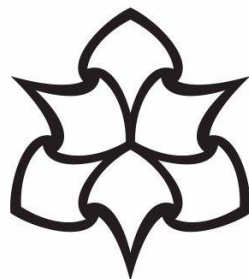


# Risk Management in Chinese Supply

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## **Abstract**

*This research investigates how, in the context of China supply management, the relationship between supplier and buyer influences risk, and how non-Chinese companies manage Chinese suppliers to minimize risk. Four streams of literature were reviewed. Themes emerged when the four were aggregated.*

*A qualitative, interpretivist, phenomenologically-housed research methodology was applied. Data was obtained through case and key informant studies, principally via literature-informed semi-structured interviews with managers at China-sourcing companies. Most key informant interviews were undertaken to enrich and validate case study findings. The two case studies and two of the key informant studies were of global MNEs; four key informants were managers at UK SMEs, one key informant interview was with a Chinese MNE (for perspectival comparison). Non-industry key informant interviews were also conducted: two were supply chain academics, three were China-specialising consultants, and two were managers at UK SMEs who both sell and source in China. The experiences of various supply chain and procurement professionals were acquired through an online discussion. Transcripts and forum messages constituted the data obtained from key informants; transcripts and internal and external documentation constituted the case study data. All data was subjected to thematic coding and analysis via NVivo. Themes and sub-themes were quantified to identify dominance. Risks and their corresponding countermeasures were compiled in tabular form, exposing similar patterns and approaches.*

*Five theoretical outputs were produced – two main and three minor. Output #1 shows the commonality in the methods of China supply risk management reported – MNE and SME meta-processes. Output #2 articulates the triadic nature of risk, China presence, and the interfirm relationship. The three minor outputs derive from Output #1: (a) three pairs of variables characterise China supply risk factors unique to global MNEs; (b) the relatedness of risk and relationship quality/formality; and (c) the relatedness of risk and buyer status/supplier perspective. Two practitioner outputs were also developed: a global MNE risk assessment tool, and a UK SME risk assessment tool.*

*Essential findings: in the context of China supply management, buyer risk is lower if the buyer-supplier relationship is strong. Buyer-supplier relationships are strengthened by interfirm integration and China-side presence of the foreign partner. Non-Chinese MNEs minimize Chinese supply risk by operating China offices; SMEs by utilising key China people. MNEs and SMEs can earn risk-reducing favoured buyer status through placing significant orders, building trust relationships, and working collaboratively with their Chinese partners.*



# Table of Contents

<b>Table of Contents.....</b>	<b>1</b>
<b>Table of Figures .....</b>	<b>9</b>
<b>Table of Tables.....</b>	<b>11</b>
<b>1. Introduction.....</b>	<b>13</b>
1.1 Research Questions and Premises.....	18
1.2 The Argument.....	20
1.3 The Structure of this Thesis .....	21
<b>2. Literature .....</b>	<b>25</b>
2.1 Literature Review Methodology .....	25
2.1.1 The Role of Literature .....	26
2.1.2 Traditional Narrative Review .....	26
2.1.3 Systematic Literature Review .....	27
2.1.4 Systematic Literature Review Method .....	28
2.1.5 The Systematic Literature Collection Process .....	29
2.1.6 Filtration of Results .....	30
2.1.7 Data Analysis Framework .....	32
2.1.8 Coverage and Structure .....	33
2.2 SC Risk .....	35
2.2.1 Supply Chain <i>Management</i> (SCM) Defined.....	38
2.2.2 SCM Philosophy.....	41
2.2.3 Supply Chain Risk Management (SCRM) .....	42
3.1.3.1 SCRM Defined .....	46
2.2.4 Supply Chain Resilience (SCRES).....	47
2.2.5 Supply Chain Vulnerability (SCV).....	48
2.2.6 Untangling SCRES, SCV, and SCRM .....	48
2.2.7 Critiquing SCRM .....	49
2.2.8 Collaboration.....	49
2.2.9 Relationships .....	52
2.2.10 Supplier Selection .....	53
2.2.11 Contracts.....	54
2.2.12 SC Complexity .....	54
2.2.13 Quality.....	55
2.2.14 Intermediaries .....	55
2.3 Chinese Business Risk.....	56

2.3.1 Chinese Business Patterns .....	56
2.3.2 Chinese Business Relationships .....	56
2.3.3 Trust.....	58
2.3.4 Guanxi .....	60
2.3.4.1 Guanxi: Advantages and Disadvantages.....	62
2.3.4.2 Guanxi: Evolution and Decline .....	64
2.3.5 Social Capital .....	67
2.3.6 Supply.....	67
2.3.6.1 Global Sourcing and Outsourcing.....	70
2.3.6.2 Strategic Supply Management .....	71
2.3.6.2 Strategic SC Management .....	73
2.3.9 Logistics.....	74
2.3.10 Quality.....	75
2.3.11 Intermediaries .....	76
2.3.12 Collaboration and Integration .....	77
2.3.13 Liabilities of Foreignness.....	78
2.3.14 UK Companies in China .....	78
2.3.15 Ownership.....	79
2.3.16 Informal Control is Insufficient .....	79
2.3.17 Ethnicity and Cross-Cultural Implications .....	80
2.3.19 Government .....	83
2.4 Definitions Used in this Research .....	84
<b>3. Methodology.....</b>	<b>87</b>
3.1 Research Methodology.....	87
3.1.1 Research Questions.....	89
3.1.2 Qualitative Research and Case Studies in Logistics and SCM .....	89
3.1.3 Case Studies as Research Method .....	91
3.1.4 The Case Study Epistemology .....	93
3.1.4.1 Theory and Practice in the Philosophy of this Research.....	94
3.1.5 A Question of Numbers.....	94
3.1.6 Case Studies and Key Informant Studies: Rationale and Methods.....	95
3.1.7 The <i>Intrinsic</i> Case Study .....	97
3.2 Data Collection .....	98
3.2.1 Access and Unit of Analysis .....	99
3.2.2 The Interview Method.....	103
3.2.3 Case Study Sampling.....	104

3.2.4 Key Informant Sampling .....	105
3.2.5 Transcription .....	107
3.3 Data Analysis .....	107
3.3.1 <i>Within-Case</i> and <i>Cross-Case</i> Analysis .....	108
3.3.2 Quantified Results of Thematic Analysis by Coding .....	108
3.4 Presentation of Findings .....	113
3.4.1 Verbal Logic Models.....	113
3.4.2 Business Process Models .....	114
3.4.3 Sociographic Models .....	115
3.4.4 Report/Narrative Structure .....	116
3.5 Contributions of This Research.....	119
<b>4. Case Study Findings.....</b>	<b>121</b>
4.1 Case Study 1 (CS1): French Electrical Manufacturer (Global MNE) .....	121
4.1.1 Company Overview .....	121
4.1.2 Internationalisation .....	121
4.1.3 Global Supply Strategy.....	122
4.1.4 China Strategy .....	123
4.1.5 China Risk Management I. Logistics .....	126
4.1.6 China Risk Management II. Quality .....	128
4.2 Case Study 2 (CS2): Canadian Transportation (Global MNE).....	132
4.2.1 Company Overview .....	132
4.2.2 Internationalisation .....	132
4.2.3 Global Supply Strategy.....	133
4.2.4 China Strategy .....	133
4.2.5 China Risk Management I. Logistics .....	139
4.2.6 China Risk Management II. Quality .....	140
<b>5. Industry Key Informant Findings .....</b>	<b>145</b>
5.1 Industry Key Informant 1 (IK1): Swedish Furniture Manufacturer (Global MNE).....	145
5.1.1 Company Overview .....	145
5.1.2 Internationalisation .....	145
5.1.3 Global Supply Strategy.....	146
5.1.4 China Strategy .....	146
5.1.5 China Risk Management I. Logistics .....	147
5.1.6 China Risk Management II. Quality .....	148
5.2 Industry Key Informant 2 (IK2): American Food Conglomerate (Global MNE).....	149
5.2.1 Company Overview .....	149

5.2.2 Internationalisation .....	149
5.2.3 Global Supply Strategy.....	150
5.2.4 China Strategy .....	151
5.2.5 China Risk Management I. Logistics .....	152
5.2.6 China Risk Management II. Quality .....	153
5.3 Industry Key Informant 3 (IK3): Direct2Customer (UK SME).....	154
5.3.1 Company Overview.....	154
5.3.2 China Strategy .....	154
5.3.3 China Risk Management I. Logistics .....	157
5.3.4 China Risk Management II. Quality .....	158
5.4 Industry Key Informant 4 (IK4): OEM (UK SME) .....	159
5.4.1 Company Overview.....	159
5.4.2 China Strategy .....	160
5.4.3 China Risk Management I. Logistics .....	162
5.4.4 China Risk Management II. Quality .....	162
5.5 Industry Key Informant 5 (IK5): R-UK (UK SME).....	163
5.5.1 Company Overview.....	163
5.5.2 China Strategy .....	164
5.5.3 China Risk Management I. Logistics .....	168
5.5.4 China Risk Management II. Quality .....	168
5.6 Industry Key Informant 6 (IK6): P-S (UK SME) .....	170
5.6.1 Company Overview.....	170
5.6.2 China Strategy .....	170
5.6.3 China Risk Management I. Logistics .....	173
5.6.4 China Risk Management II. Quality .....	174
<b>6. Summary of Case Study and Industry Key Informant Findings .....</b>	<b>175</b>
6.1 Risks Reported.....	175
6.2 Risks and Modes of Mitigation Reported by Global MNEs .....	175
6.3 Risks and Modes of Mitigation Reported by UK SMEs.....	177
<b>7. Other Key Informant Findings.....</b>	<b>181</b>
7.1 Academic/Practitioner Key Informant (AK1): Stuart Emmett (Author and Trainer)....	181
7.1.1 Reducing Risk by Relationships .....	181
7.1.2 Arm's-Length Versus Mutualist Relationships .....	181
7.2 Academic Key Informant (AK2): Martin Christopher (Professor of Logistics and SCM, Cranfield School of Management) .....	183
7.2.1 Risk in China Supply .....	183



7.2.2 Relationships: One of <i>The Four Rs</i> .....	185
7.2.3 Reducing SC Risk by Decoupling.....	186
7.3 Consultant Key Informant (CK1): Anderson Consulting (“China Solution Provider”, Stoke-On-Trent) .....	187
7.3.1 Risk in China Supply .....	187
7.3.2 Managing China Risk .....	188
7.3.2.1 Relationships .....	189
7.3.2.2 The Advantages of The Consultant – The Professional Intermediary .....	190
7.4 Consultant Key Informant (CK2): Cargo East Asia (“China Trade and Cargo Specialists”, London/Hong Kong/Worldwide) .....	191
7.4.1 Risk in China Supply .....	191
7.4.2 Managing China Risk .....	192
7.4.2.1 Relationships .....	193
7.4.2.2 The Advantages of The Consultant – The Professional Intermediary .....	194
7.5 Consultant Key Informant (CK3): Cargo East Asia, China-Britain Business Council, and Hong Kong Chamber of Commerce (Joint Seminar) .....	194
7.5.1 Risk in China Supply .....	194
7.5.2 Managing China Risk .....	195
7.5.2.1 The Importance of 3PLs .....	195
7.5.2.2 The Advantages of The One-Stop China Solutions Company .....	195
7.6 Firm Comparator Key Informant (FK1): SCMG (Xuzhou, China).....	196
7.6.1 Risk for the Chinese Multinational .....	196
7.6.1.1 Internal Risk .....	196
7.6.1.2 External Risk .....	197
7.6.1.3 Imitator Risk .....	197
7.6.2 Risk Management by the Chinese Multinational .....	197
7.6.2.1 Risk Management I. Logistics.....	199
7.6.2.2 Risk Management II. Quality .....	199
7.6.2.3 Risk Management III. Foreign Partners .....	200
7.6.2.4 Risk Management IV. Technology Lag .....	200
7.7 Firm Comparator Key Informant (FK2): 360C (UK SME, Crewe) .....	201
7.7.1 Risk in China Supply .....	201
7.7.2 Managing China Risk .....	201
7.7.3 Relationship Skepticism .....	201
7.8 Firm Comparator Key Informant (FK3): UKCeram Products (UK SME, Stoke-on-Trent) .....	202
7.8.1 Risk in China Supply .....	203

7.8.2 Managing China Risk .....	204
7.8.2.1 Relationships .....	204
7.8.2.2 The Advantages of the China Distributor .....	205
7.9 Various Practitioner Key Informants (LKs): (LinkedIn Discussion Forum, Worldwide) .....	205
7.9.1 Risk in China Supply .....	206
7.9.2 Managing China Risk .....	207
7.9.3 Causes of China Risk.....	207
7.9.3.1 Causes of Risk I. Perceptual .....	207
7.9.3.2 Causes of Risk II. Buying on Price .....	208
7.9.3.3 Causes of Risk III. China's Regional Variance .....	208
7.9.3.4 Causes of Risk IV. Personnel.....	208
7.9.3.5 Causes of Risk V. Ignorance of Chinese Systems.....	209
7.10. Summary of Other Key informant Findings .....	210
7.10.1 Risks Reported.....	210
7.10.2 Causes of Risks and Modes of Mitigation.....	210
<b>8. Discussion I. The Findings' Fit with the Literature .....</b>	<b>219</b>
8.1. Background and Concepts .....	219
8.2. China and Supply .....	229
8.3. Guanxi.....	236
8.4. Supply and Risk.....	240
8.5 Conclusion.....	245
<b>9. Discussion II. Theoretical and Practitioner Contributions .....</b>	<b>247</b>
9.1 Theoretical Output 1. System Patterns .....	249
9.1.1 The MNE Meta-Process .....	249
9.1.2 The UK SME Meta-Process .....	252
9.1.3 The UK SME China Supply Meta-Sociograph .....	254
9.1.4 Global MNEs and UK SMEs: Differences and Commonalities.....	255
9.1.5 MNE Risk-Influencing Variables .....	258
9.1.5.1 China Strategy and Supply Proximity .....	258
9.1.5.2 Technology and Supplier Availability .....	260
9.1.5.3 The Firm's Relationship with Government.....	261
9.1.6 Relationship Quality and Formality .....	262
9.1.7 Buyer Status and Supplier Perspective .....	266
9.2 Theoretical Output 2. Risk and China Presence: The Interfirm Relationship .....	267
9.2.1 Adapted Bowtie and Diamond Models of Interfirm Relationships.....	267

9.2.1.1 Classic Bowtie.....	268
9.2.1.2 Classic Diamond .....	268
9.2.1.3 Remote Bowtie.....	268
9.2.1.4 Overlapping Bowtie .....	269
9.2.1.5 Fused Bowtie .....	270
9.2.1.6 Consultant Bowtie .....	270
9.2.1.7 Consultant Diamond.....	271
9.2.1.8 MNE Hexagonal Diamond.....	272
9.2.2 The Adapted Bowtie and Diamond Models Summarised.....	273
9.3. Practitioner Output 1. The Four-Step China Supplier Establishment Tool.....	275
9.3.1. Alignment 1 .....	275
9.3.2 Alignment 2 .....	276
9.3.3 Encounter.....	277
9.3.4 Operate.....	278
9.4 Practitioner Output 2. China Supply Risk Assessment Tools .....	278
9.4.1 Global MNE Risk Assessment Tool.....	280
9.4.2 SME Risk Assessment Tool .....	281
<b>10. Conclusions .....</b>	<b>283</b>
10.1 The Research Questions Answered .....	283
10.2 <i>Five</i> Theoretical Outputs.....	284
10.3 Case Findings.....	285
10.4 Social Capital.....	286
10.5 Limitations and Avenues for Future Research .....	286
10.6 Summary of Contribution .....	290
<b>References .....</b>	<b>293</b>



## Table of Figures

Figure 1 Biggest Exporters to UK by £ Value 1997–2014.....	15
Figure 2 BRIC and Less Developed Countries Exports to UK by £ Value 1997–2014.....	16
Figure 3 Chinese SITC 6, 7, & 8-Classified Exports to the UK 1997–2014.....	17
Figure 4 Argument Map .....	21
Figure 5 Systematic Literature Review: A Method with Three Processes.....	32
Figure 6 The Literature Review: Informative Discourse and Targeted Searches .....	34
Figure 7 Structure of the Typical Private Chinese Company .....	56
Figure 8 Methodology Outline .....	88
Figure 9 Derivation of Template of Questions for Semi-Structured Interview.....	102
Figure 10 Themes and Code Counts as Schematic .....	110
Figure 11 FEM Supplier-Buyer Flows.....	126
Figure 12 CT Supplier-Buyer Flows .....	138
Figure 13 SFM Buyer-Supplier Flows.....	147
Figure 14 AFC Supplier-Buyer Flows .....	152
Figure 15 Direct2Customer Supplier-Buyer Flows.....	155
Figure 16 Direct2Customer Sociograph .....	156
Figure 17 OEM Supplier-Buyer Flows .....	160
Figure 18 OEM Engineering Sociograph.....	161
Figure 19 R-UK (Pre-2009) Supplier-Buyer Flows.....	165
Figure 20 R-UK (Post-2009) Supplier-Buyer Flows .....	165
Figure 21 R-UK (Pre-2009) Sociograph .....	167
Figure 22 R-UK (Post-2009) Sociograph.....	167
Figure 23 P-S Supplier-Buyer Flows .....	171
Figure 24 P-S Sociograph.....	173
Figure 25 Background and Concepts in the Literature.....	220
Figure 26 “chin*” AND “suppl*” in the Literature .....	230
Figure 27 “guanxi” in the Literature .....	237
Figure 28 “suppl*” AND “risk” in the Literature .....	241
Figure 29 A Combined and Intersecting Literature .....	245
Figure 30 The MNE China/Global Supply Meta-Process Model .....	250
Figure 31 The SME China Supply Meta-Process Model.....	252
Figure 32 SME Generic Sociograph.....	254
Figure 33 Risk in Relation to China Market Importance and Proximity of Supply.....	259
Figure 34 Risk in Relation to Level of Technology and Availability of China Supply .....	261
Figure 35 Supply Risk, Relationship Quality, and Formality .....	265
Figure 36 Buyer Status: The Supplier Perspective .....	267
Figure 37 The Classic Bowtie.....	268
Figure 38 The Classic Diamond .....	268
Figure 39 The Remote Bowtie Model.....	269
Figure 40 The Overlapping Bowtie.....	269
Figure 41 The Fused Bowtie Model of the Interfirm Relationship .....	270
Figure 42 The Consultant Bowtie Model.....	270
Figure 43 The Consultant Diamond Model of the Interfirm Relationship.....	271
Figure 44 The MNE Hexagonal Diamond Model of the Interfirm Relationship .....	272
Figure 45 Risk and China Presence.....	274
Figure 46 The Four-Step China Supplier Establishment Tool.....	275



## Table of Tables

<i>Table 1 A Chronology of Authorship and Definitions of “Supply Chain” (SC)</i> .....	37
<i>Table 2 A Chronology of Terms/Concepts Analogous with “Supply Chain Management” (SCM)</i> .....	38
<i>Table 3 A Chronology of “Supply Chain Management” (SCM)</i> .....	39
<i>Table 4 Definitions of “Risk”</i> .....	45
<i>Table 5 Methods by which Case Study and Industry Key Informants were Initially Contacted</i> .....	100
<i>Table 6 Methods by which Other Key Informants were Initially Contacted</i> .....	101
<i>Table 7 Parent and Child Themes Recurrent and Emergent in the Literature Review</i> .....	101
<i>Table 8 Case Study/Industry Key Informant Sampling</i> .....	106
<i>Table 9 Selection of Other Key Informant Respondents</i> .....	107
<i>Table 10 Parent Themes: Ranking by Frequency</i> .....	112
<i>Table 11 Coding: Parent Themes, Frequencies, and Ranking</i> .....	117
<i>Table 12 Correspondence of Report Headings and Parent Themes</i> .....	118
<i>Table 13 D2C Typical Customer Requirements by Category</i> .....	155
<i>Table 14 Supply Risks Identified and Location of Mitigation</i> .....	175
<i>Table 15 China Supply Risks and Mitigations: Global MNEs (CS1, CS2, IK1, IK2)</i> .....	176
<i>Table 16 China Supply Risks and Modes of Mitigation: UK SMEs (IK3, IK4, IK5, IK6)</i> .....	177
<i>Table 17 Key Relationships in China Supply Management by UK SMEs</i> .....	178
<i>Table 18 Other Key informant Sources: Supply Risks Identified and Location of Mitigation</i> .....	210
<i>Table 19 Other Key informant Sources: Supply Risk Causes and Modes of Mitigation</i> .....	212
<i>Table 20 China Supply: Risks and Modes of Mitigation Identified by Key Informant Sources</i> .....	213
<i>Table 21 Compliance of Findings with the Background and Concepts Literature</i> .....	219
<i>Table 22 Compliance of Findings with the China and Supply Management Literature</i> .....	229
<i>Table 23 Compliance of Findings with the Guanxi Literature</i> .....	236
<i>Table 24 Compliance of Findings with the Supply and Risk Literature</i> .....	240
<i>Table 25 Overview of Findings</i> .....	248
<i>Table 26 Global MNEs and UK SMEs: Differences and Commonalities</i> .....	257
<i>Table 27 The Five Theoretical Outputs of this Research and the Correspondence of Their Aspects</i> .....	285





# 1. Introduction

This chapter presents the motivation, questions, and premises behind this research. A macroeconomic argument is also made for the importance of China to global trade.

This research was motivated in part by omission and in part by a mismatch between the popular literature of Chinese business and the academic work on the subject.

On omission: few academic studies have examined risk in Chinese supply specifically. On mismatch: observing Chinese supply while employed at a Japanese multinational provided impetus. My experience spurred a literature investigation that proved enlightening but disappointing: the orthodox methods of risk management recommended in the academic literature were of limited value. Of greater practical utility were popular handbooks on Chinese business, which stress the value of relationships to Chinese business success – a topic that receives scant discussion in the supply chain risk literature.

If the ample popular literature is indicative (its assertions are bolder and less finessed by caveats; its authors are usually seasoned practitioners), the experience of many managers from Western countries has been negative. The popular literature documents in unflattering terms the complexities and hazards of Chinese business: March and Wu (2007) concentrate on the difficulties foreigners find with Chinese negotiation tactics, the hazards of informal networks, and the precarious nature of trust and face conventions. Midler (2009) paints a bleaker picture yet – of corruption, trust failure, opportunism, and quality fade; Levesque (2011) describes an ever-improving Chinese business environment, but suggests that risk in Chinese supply is often a cultural issue. All offer cautious advice and techniques for coping with the enticing yet challenging world of Chinese supply. My research was begun with the intention to reveal the methods by which professionals manage risk in Chinese SCs and to thereby add to the knowledge pool by testing the literature (both sets) against practice using the rigour of formal academic methods.

The results of a 2009 survey from the Engineering Employers Federation revealed that 14% of respondents formerly operating supply bases in low labour-cost

countries had repatriated at least part of their manufacturing since 2007. A 2012 follow-up survey by the Engineering Employers' Federation (2015) revealed that 40% of manufacturers who responded had repatriated their operations to the United Kingdom, with supply chain issues mentioned by many as a significant factor in the decision to reshore.

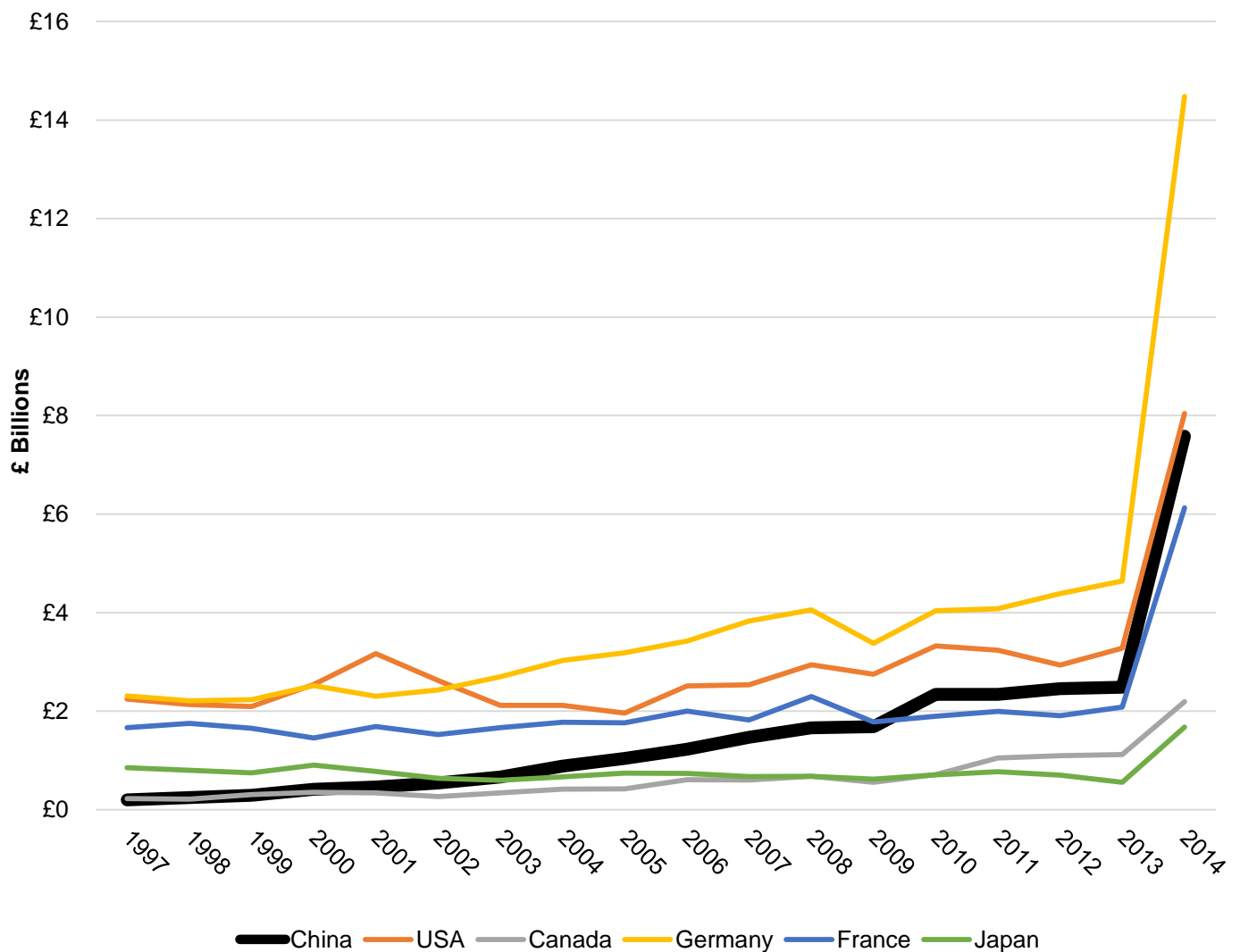
High profile examples of UK companies re-shoring all or part of their manufacturing operations from China specifically are Hornby (2013), Jaeger (2014), Aston Martin (2014), TopShop (2013), River Island (2012), Ecoegg (2012), and Pot Noodle manufacturer Symington (2013). High profile non-UK companies include General Electric (2012), Rossignol (2011, 2013), and various suppliers of textiles to Walmart (2013-14). The author's informal enquiries into UK companies manufacturing and reselling warehousing revealed a consistent picture: in 2015, most of the companies interviewed were manufacturing in the UK; all reported negative experiences with Chinese suppliers, principally rising prices and problems related to product quality and delivery. All reported that their UK and European customers have a strong preference for contracting with suppliers of products that are UK-made.

Data from the UK's Office for National Statistics (ONS) shows that despite the apparent trend for reshoring and a decreasing trade gap, China in 2015 was the UK's third largest source of imports, so is still a major supply base for many British companies.

This data provides a macro-economic rationale for this research: Chinese supply remains a significant element of British business and consumption, so *deserves theoretical scrutiny and empirically-based research that will contribute to improved efficiencies.*

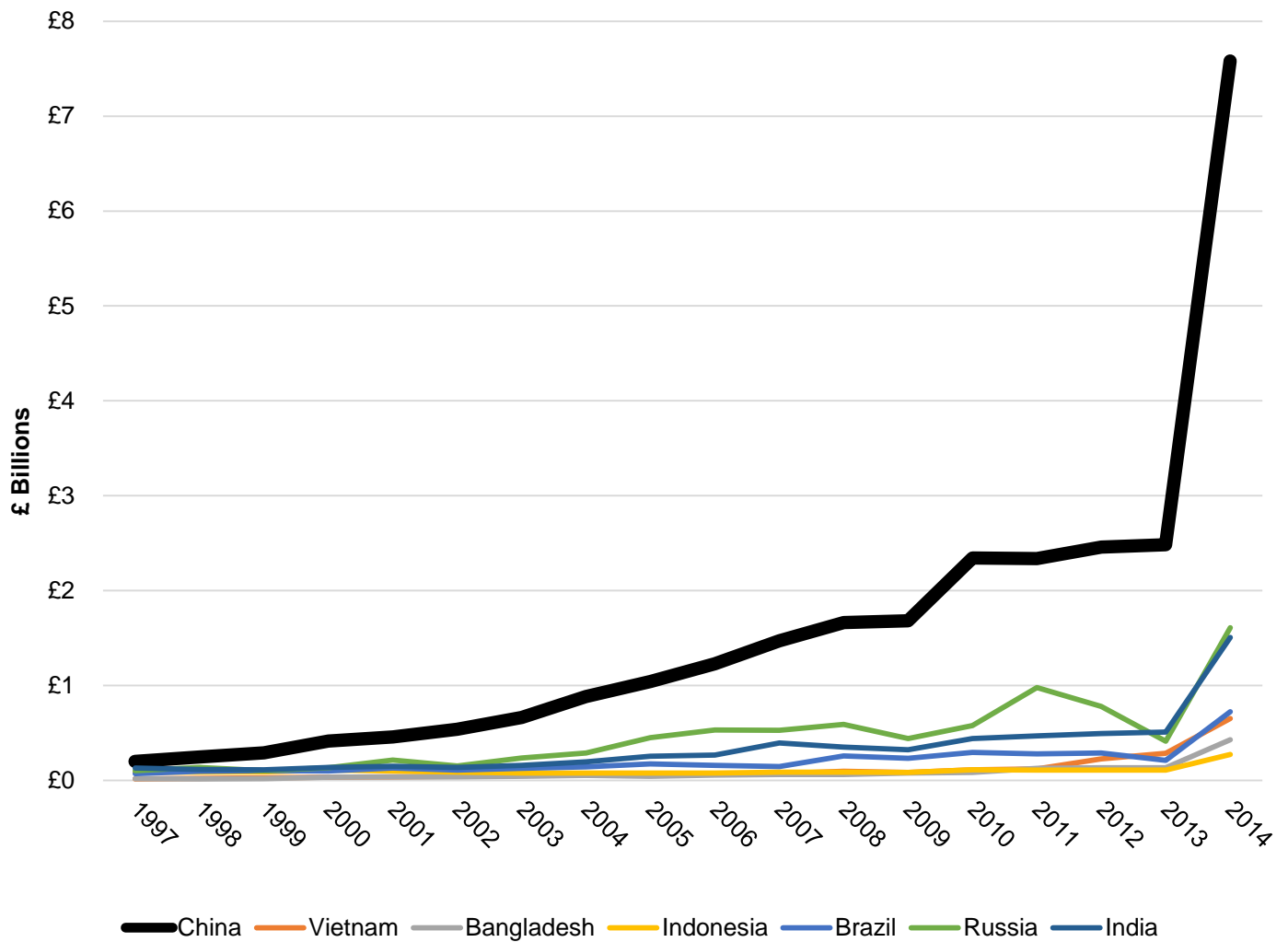
The following three charts support the macro-economic case for the importance of China supply to British companies and the UK economy.

Figure 1 Biggest Exporters to UK by £ Value 1997–2014



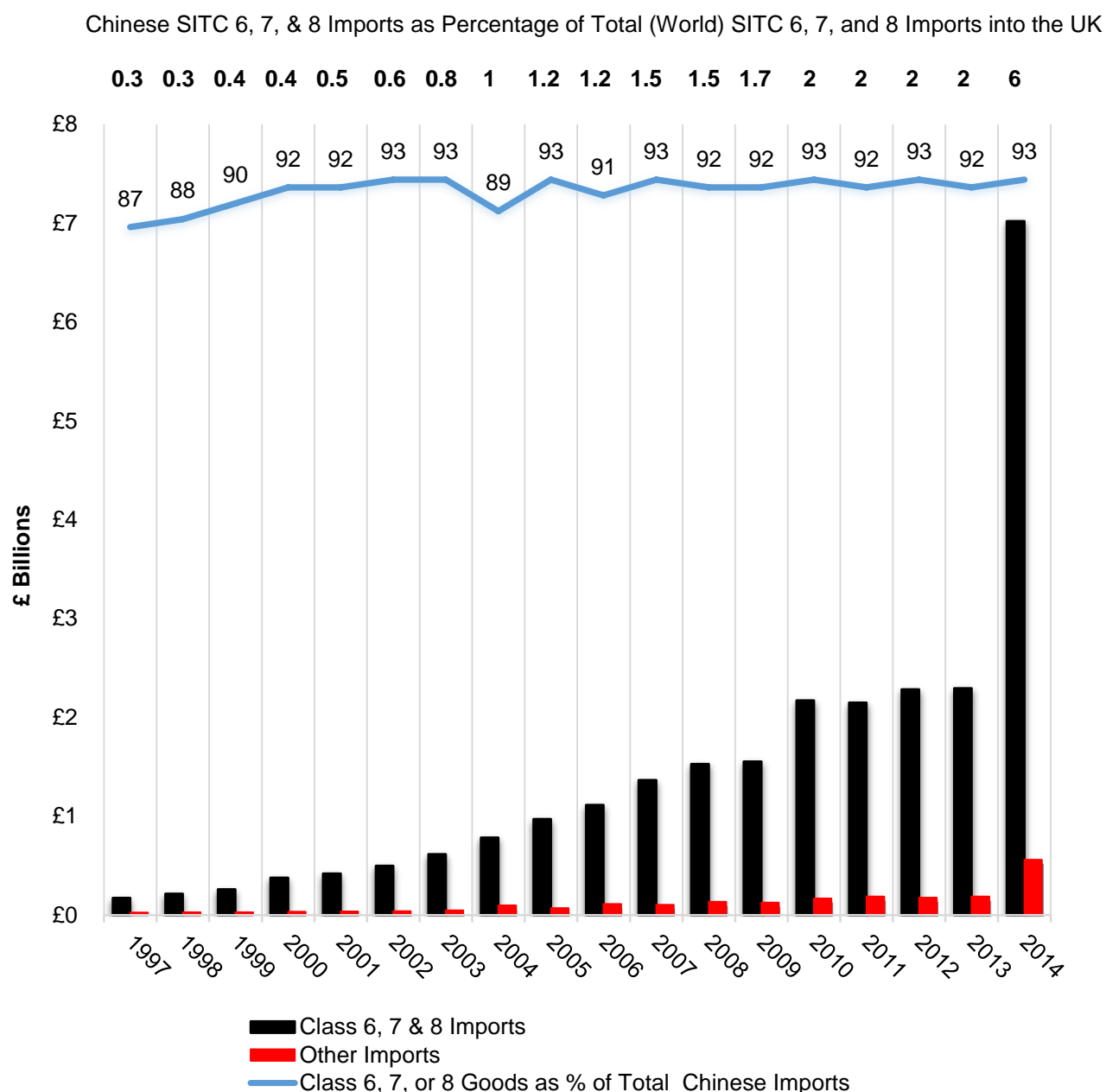
Only Germany and the United States export more by value than China to the UK. In cultural, ideological, and geographical terms, China is the most distant of the three biggest exporters to Britain. These three factors suggest that the management of Chinese supply likely features some degree of uniqueness.

Figure 2 BRIC and Less Developed Countries Exports to UK by £ Value 1997–2014



Compared to less developed countries, China is by far the largest exporter to the UK, as this graph shows.

Figure 3 Chinese SITC 6, 7, & 8-Classified Exports to the UK 1997–2014



This chart indicates that the majority of Chinese exports (in all years >87%) to the UK are classified as SITC 6, 7, or 8 manufactures (most fast-moving consumer goods are classified under codes 7 and 8 – see *Trade Data* in the Appendix). The trend is steady annual growth between 1997 and 2010, plateau between 2010 and 2013, and a dramatic spike in 2014. The general pattern indicates that despite re-shoring (or because re-shoring has increased UK manufacturing and therefore the demand for China-sourced components and materials), China imports have

increased yearly and are currently at their highest level (Office of National Statistics website, 2015; also see *Trade Data* in the Appendix).

Prior research into the nature of Chinese business networks, specifically the importance of *guanxi* (connections – see *Chinese Terms* in the Appendix) as an enabler of business, prompted this researcher to question whether *guanxi* influences supply management and risk.

The worldwide proliferation of China-manufactured goods branded by non-Chinese entities suggests that *guanxi* relationships are not the formidable, barely navigable forces the literature of the 1990s and early 2000s suggest – *guanxi* is less present between geographically disparate strangers, but the volume of goods sourced in China implies the situation is manageable. Nonetheless, the literature on *guanxi* (Wilkinson, 2011) paints a clear picture of its enduring necessity: *guanxi* between business people and between business people and officials enables access to resources, reduces various forms of supply- and demand-related risk, and enables control and accountability in the absence of strong formal institutions (contracts and law, etc.). How, therefore, can the general complexity of and cultural obstacles to Chinese business be reconciled with the ongoing enthusiasm of MNEs and non-Chinese companies for China sourcing? And what are the implications for supply chain management, since China inevitably represents a dimension of risk and challenge for supply (chain) managers?

The research questions that guided this project developed out of these observations into the following:

## **1.1 Research Questions and Premises**

This research asks and addresses the following two questions:

1. *In the context of China supply chain management and its associated risks, what is the nature of the relationship between supplier and buyer?*
2. *How do non-Chinese companies manage Chinese suppliers to minimize risk?*

Case study and key informant study data was collected, analysed and applied to answer these questions. Data was obtained from in-depth, semi-structured

interviews with practitioners and various expert key informants. When compiled and qualitatively analysed, the data provided a rich informational account.

In its philosophy, this research is interpretivist/phenomenological: it seeks insight into a phenomenon within a phenomenon, i.e. a specific business process within a specific culture.

The *microeconomic* case for this research is self-evident: a sound understanding of the risk-reducing significance of relationships with Chinese suppliers is likely to increase the profitability of operating China supply.

The *theoretical* case is made thus: the concepts of supply risk management can be tested for trans-cultural applicability. The need for the incorporation of culturally specific factors in risk calculation models and risk frameworks might also arise. Following that, several theoretical extensions are proposed in the *Conclusions* section.

Risk management in supply chains is well theorized, and popular and academic writing on the idiosyncrasies of Chinese business practice is extensive. Hence, the nature of risk in the supply and importation of Chinese products poses an issue worthy of investigation. The essential thesis of this research functions on the premise that risk in Chinese supply management is managed by relational means. That is, relationships between non-Chinese buyers and their Chinese suppliers are a significant factor in the management of supply risk. This assumption is based on the literature's majority assertion that Chinese business is highly personalistic in nature and success in Chinese business (whether between Chinese or between Chinese and non-Chinese) is highly dependent on relational factors and cultural fluencies and skills.

Hence, in abstract terms, this thesis asks the question "do relationships influence risk in Chinese supply management"? If the existing research into this matter were sufficient, justifying this study might be challenging. Similarly, if the interpersonal nature of Chinese business is overstated, outdated, or, for some strange reason, irrelevant to supply risk management, justifying this study might be challenging.

However, should the existing body of research be insufficient and the relationship consensus borne out by practitioner opinion, this research is valid and necessary. Preliminary exploration suggested this was the case: observations by the author during his time in industry presented a mixed picture on the issue of interpersonal Chinese business; the author's systematic literature review (Wilkinson, 2011) revealed significant nuance and development concerning the role of interpersonal factors in Chinese business. Pilot searches of the literature (both academic and mass market) showed that few publications address China supply risk adequately.

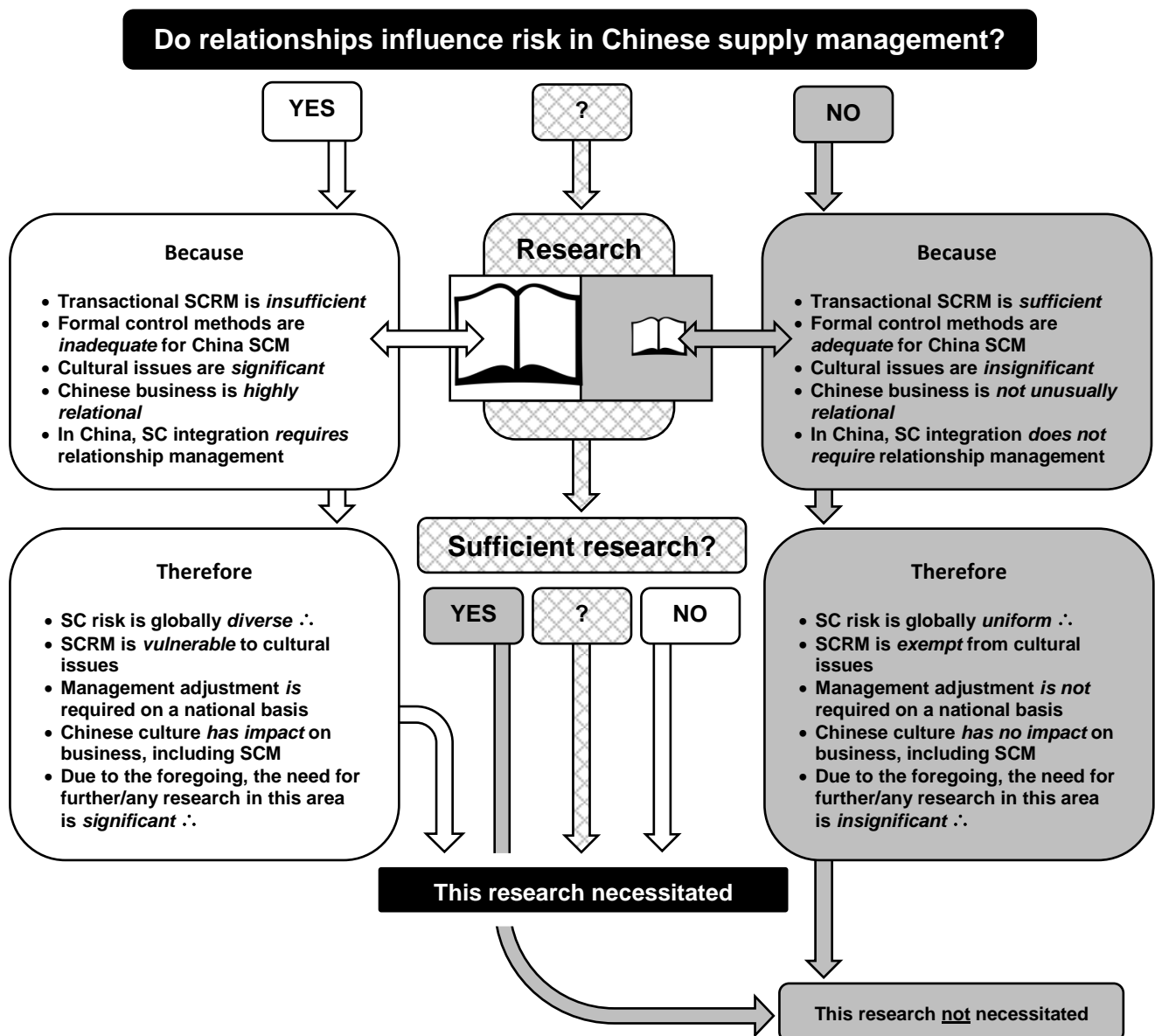
## **1.2 The Argument**

A prior systematic literature review (Wilkinson, 2011) and pre-reading of practitioner-targeted books on Chinese business lead to the deduction that China can be characterised as low-trust, making trust-building relationships key to lowering risk in Chinese business. Logically, it follows that since supply management is a form of business activity, in the case of China, risk in supply management will also be influenced by trust and relationships. The systematic review showed that in the Sinitic context, “guanxi” is the principle term for relationships, particularly long-term relationships.

The argument map (based on the format proposed by Davies, 2011) that follows outlines the epistemological justification for this research.



Figure 4 Argument Map



### 1.3 The Structure of this Thesis

The *Literature* chapter has three sections. In the *Literature Review Methodology* section, the use of a traditional narrative and three systematic searches (and the systematic method itself) are justified and explained. The *SC Risk* section of the review (2.2) covers definitions of risk and supply chain management (hereafter “SCM”), the tools and philosophy of SCM, and other dominant themes in the SCM literature. The *Chinese Business Risk* section (2.3) discusses Chinese business practices, guanxi, supply management in the Chinese context, and the experiences of foreign companies in China, among other matters. (The two review sections

merge four streams of literature to obtain the essential theory and empirical work of most relevance. The overlap of the four streams was important and intended: the reviews are informed by all four streams of literature without separation, since such separation would complicate the review.)

The *Methodology* chapter presents the research questions, the utility of qualitative methods in supply chain and management research, the philosophy supporting this research, and the appropriateness of the case study and key informant method. The protocol of data collection and analysis is described in sections 3.2 and 3.3 respectively. The mode of the findings' presentation is explained in 3.4. The chapter ends with a summary of the contributions of this research.

Chapter 4 contains the two company case studies derived from relevant textual sources and in-depth, semi-structured interviews with MNE managers in supply-related roles. Chapter 5 contains the industry key informant findings. The structure of each report is based on the case study findings, since the key informant studies were conducted to extract detail on matters uncovered during case study construction, and to provide comparisons with the case studies. Thus, the format of these chapters is similar. Chapter 6 summarises the case study and industry key informant findings. The risks and corresponding methods of mitigation are presented.

Chapter 7 presents reports of interviews with other key informants (academics, consultants, and comparator companies – such as a Chinese MNE). Feedback from an online forum for supply professionals was also included. Identified in this section are main causes of supply risk, location and mode of risk mitigation methods, specific relationships, and key risk-reducing relationships.

Chapter 8, the first *Discussion* chapter, presents the points of strongest convergence and divergence between the findings and the main currents of theory as espoused in the literature. First discussed is the compatibility of the findings with the literature on SC concepts. The following areas of theory are contrasted in the light of the findings: the fundamentals of SCM and SC risk management, supplier management in the context of China, the relational nature of Chinese business (*guanxi*), and the functional/procedural (i.e. non culturally- specific) methods of supply risk reduction.

The *Discussion* continues in Chapter 9, where case study and key informant interview findings are aggregated and synthesised to expose commonalities and differences. The theoretical outputs begin with a MNE supplier-buyer meta-process model and exposition. The models reveal the consistencies observed in the MNE case studies regarding global and China-side supply configuration. An SME supplier-buyer meta-process model is also presented. This reports the commonalities present in the China-side supply arrangements of the UK SMEs. This is followed by an SME meta-sociograph. The sociograph describes commonalities observable in the human interaction dimension of the China supply arrangements of the UK SMEs. The system patterns of China supply risk management common to MNEs and SMEs constitute the first theoretical output.

Following these, the discussion focusses on risk-influencing variables *specific to MNEs*: China strategy and supply proximity, technology and China supplier availability, and relationships with government. These MNE risk-influencing variables become another theoretical output.

Buyer-supplier relationship quality and formality, and buyer status and supplier perspective are then examined and developed into two theoretical outputs relevant to MNEs and SMEs.

The risk significance of China presence and its bearing on risk is the fifth theoretical output. Supplier-buyer integration in the context of China appears influenced by the foreign company's degree of in-country presence. Building on the bowtie and diamond models of interfirm alignment, six variant models of alignment are presented. Based on the empirical findings of this research, these models are intended to be useful methods of understanding in theoretical terms the performance and risk significance of differing forms of interfirm connectivity, relationships and integration.

Two practitioner outputs are then presented: the *Four-Step China Supplier Establishment Tool*, and the *China Supply Risk Assessment Tool*. The first provides a sequence of steps that foreign companies considering China supply can implement (from concept to collaboration) to reduce risk. The second tool enables companies

who are already operating or considering China supply to assess the level of risk that is likely present in their current or envisaged supply arrangements. This tool comprises a survey consisting of 25 questions. Because the nature of risk differs according to company size (SME versus MNE) and China strategy (also strongly influenced by size), there are two versions of the tool: an MNE version and an SME version.

This thesis closes with a *Conclusions* section in which the outputs of this research, its methodology, and its contributions are critiqued; possibilities for future research are discussed; and the implications of this research on other areas of theory are proffered.

In the following chapter, the literature of supply chain management risk and Chinese business will be reviewed.

## 2. Literature

This chapter begins by describing the methods used to find and review the literature. This is followed by a discussion of the literature on risk in supply chain management and Chinese business.

### 2.1 Literature Review Methodology

The now common term “supply chain” (hereafter “SC”) seldom occurs in clear separation from “SCM, which, according to many accounts (e.g. Lambert *et al*, 1998), entered the literature in 1982 via Oliver and Webber. We will observe that SCM developed out of logistics into a philosophy championing competitive advantage through the holistic organisation of cooperating entities. SCM promotes a set of concepts and provides tools and approaches for reducing SC risk, which is increasing as supply globalises (Christopher and Peck, 2004).

The research that this review informs seeks to reveal the nature of risk in the context of *Chinese* supply, and to identify and theorise the *relational* methods (if found) that companies use to lessen supply risk. (The term “supply” was carefully chosen for its incorporation of supplier management, supply chain management, and other likely possible descriptions of management of Chinese suppliers and risk in Chinese supply.) The fundamental assumptions of the present research are that globalization incurs risk, and that Chinese supply risk incurs risks whose causes and solutions are often relational and currently undertheorized in the SCM literature. This latter assumption derives from the literature presented in the three-phase systematic review that follows this background review.

We survey first the discipline’s literature for theoretical and conceptual work on the issues of risk management in supply chains *generally*, i.e. SC risk management methods and proposals that have acquired mainstay status in the discipline and are *non-cultural* in nature. To achieve this, the first literature review (following) was guided by the following review questions:

- RQ1.** What concepts are represented by the terms “supply chain” and “supply chain management”?
- RQ2.** What is “risk” in the context of SCs?
- RQ3.** What are the philosophies and tools of SC risk management?
- RQ4.** How might relationships influence risk in the specific context of China supply?

By charting the development of “supply chain” and “supply chain management”, section 1 answers RQ1. Section 2 of this review addresses RQ2. Section 3, by reviewing lean, agile, and the various other tools/philosophies of SCM, addresses RQ3. Section 4 presents an introductory answer to RQ4, and connects this discussion of the literature to the three systematic reviews, which address this question in greater detail.

### **2.1.1 The Role of Literature**

Swanborn (2010) avers that researchers should possess knowledge about the phenomena of interest before they attempt case study construction. The phenomena of interest in this case are dual: risk management in global supply and Chinese business. Prior knowledge of both phenomena came through pre-reading, formal academic learning, formal academic research (Wilkinson, 2011), working experience, first-person cultural exposure, and three structured systematic literature searches (see next section).

According to Niederkofer (1991), theory is confirmed if results are as expected. In this research, theory was extracted from the extensive literature of SCM primarily and related fields secondarily. The coding of the summaries of the articles returned by the three systematic literature searches revealed recurrent themes and theories. These provided the researcher with the material for a semi-structured interview template questionnaire (see Appendix), and gave the researcher expectations regarding interviewee responses and, possibly, some degree of confirmation bias.

### **2.1.2 Traditional Narrative Review**

The *Background Literature* review is a traditional narrative. The *Background Literature* review is the first of a quartet that comprise the total literature review (the

other three are systematic reviews, which are discussed later.) Its structure is based on guidance from pre-reading that occurred between 2007 and 2010. The pre-reading was of both popular and practitioner-oriented literature while working in Asia in various supply-related capacities. Post 2012, many articles were suggested by the author's supervisory consultation panel, who recommended journals, authors, and specific articles that are rudimentary to the discipline.

The traditional review covers the core concepts and definitions relevant to the theory of SCM, and provides an overview of SCM as a theoretical discipline. The researcher's conceptual framework for this section of the review can be compacted into the terms "supply", "supply chain" (SC), and "supply chain management" (SCM), with SC and SCM denoting a very specific suite of concepts and practices – primarily an underpinning concept of holism and synergy, a formula of advantage akin to that promoted by the literature on internationalization (Dyer, 1997).

The *Background Literature* review analyses concepts deemed key according to three criteria:

1. Disputation: Absence of which implies academic consensus; presence implies importance and development. The adoption and development of a concept in a body of peer-reviewed literature implies acceptance of that concept.
2. Seminal authorship: since high citation count is incomplete as an indicator of quality (Meho and Sonnenwald, 2000), authorship is reasonable grounds for inferring worth. Concepts in articles by heavily cited authors were considered representative.
3. Vernacular currency (this author's term): refers to the extra-academic adoption of a term/concept; i.e., to the presence of a term/concept within relevant areas of industry and practice; in, for example, the non-academic literature of logistics.

### **2.1.3 Systematic Literature Review**

Scientific, systematic literature review in the field of business studies has strong precedence. For example, Pittaway *et al* (2004), Thorpe *et al* (2005) (*International Journal of Management Reviews*); and MacPherson and Holt (2007) (*Research Policy*). Furthermore, Tranfield *et al* (2003) and Denyer and Neely (2004) have applied the systematic review method to management research specifically.

Tranfield *et al* (2003), Pittaway *et al* (2004), and Thorpe *et al* (2005) maintain that popularization of the systematic method is necessary if research in international business is to advance generally.

The systematic method has credibility because it attempts to use objective, explicit criteria of article selection, and because it constitutes a tried-and-tested means of accumulating an evidence base. Lee (2009) claims that the systematic literature review leaves a useful “audit trail” of search terms and conditions of inclusion and exclusion, and thus reflects the scientific principles of repeatability and transparency. Perhaps it is for these reasons that systematic literature searching is strongly represented in the health sciences (Clarke and Oxman, 2001).

Although systematic reviews can produce up-to-date analyses, the present research does not disregard the contributions (actual and potential) of the narrative approach, since this counters the tendency to reference some sources while neglecting alternatives, such as books (hence the *Background Literature* section).

The systematic method also reflects the interpretivist ontology, since it has been shown effective in the author’s previous research (Wilkinson, 2011) for evaluating the component attributes of guanxi and producing objective, scientometric overviews of the literature in which guanxi is embedded and emergent.

In the present study, systematic searching is the *primary* literature retrieval method. This is because the body of potential literature is of such high volume that a system enabling elimination of less relevant literature is requisite. However, to overlook the contribution of the narrative review would be hazardous. For this reason, and to advance knowledge through a broad conceptual discussion that enfolds as much of the literature as possible – academic and otherwise – this research also employs a traditional narrative review.

#### **2.1.4 Systematic Literature Review Method**

The systematic review returned literature on three specific subjects within international business:

- ❖ Literature Search 1 retrieved articles relating to China/Chinese supplier or supply related research.



- ❖ Literature Search 2 retrieved articles relating to guanxi.
- ❖ Literature Search 3 retrieved articles related to supply or supplier and risk.

### 2.1.5 The Systematic Literature Collection Process

Systematic literature collection involved the following sequence of three processes:

- ❖ Step ①: the five richest citation databases (online academic journal indices) were identified.
- ❖ Step ②: three sets of search terms were used to retrieve articles from the databases identified in Step ①.
- ❖ Step ③: the articles retrieved in Step ② were filtered for inclusion/ exclusion according to specific quality criteria.

Step ① involved running pilot searches on various citation databases to identify which databases yielded the highest number of returns for the search terms “Chin\*”, “suppl\*”, “guanxi”, “suppl\* and risk”. Only databases that supported searching by wildcards were selected, since wildcards enable fuzzier searching that should increase catchment. For example, wildcard searches such as “chin\*” and “suppl\*” return articles that contain in their titles, abstracts, or keywords “China” and “Chinese”, and “supplier”, “supplies”, “supply chain”, “supply management” and so on. The five highest yielding databases were selected. These were *Science Direct*, *Jstor*, *Ingenta Connect*, *Emerald Insight*, and *Web of Science*.

In Step ②, all five top yielding databases identified in Step ① were interrogated using specified Boolean search terms/keywords. Each set of search terms/keywords thus constituted a Literature Search.

- ❖ Literature Search 1 search terms/keywords: “chin\*” AND “suppl\*”
- ❖ Literature Search 2 search terms/keywords: “guanxi”
- ❖ Literature Search 3 search terms/keywords: “suppl\*” AND “risk”

Each Literature Search required a search of all five databases. In total therefore, there were 15 searches (searches of all five databases for Literature Search 1, 2, and 3). When each Literature Search was complete, duplicates were eliminated.

In Step ③, the articles were sorted into three groups representing the three Literature Searches (and the three main areas of the literature informing the research question). An Excel spreadsheet containing three separate sheets was created. The details of each article (author, date, title, citation count, and source) were entered into the spreadsheet. Sheet 1 of the spreadsheet contained the details of the articles returned by Literature Search 1 (“Chin\* and suppl\*”). Sheet 2 contained the details of the articles returned by Literature Search 2 (“guanxi”). Sheet 3 contained the details of the articles returned by Literature Search 3 (“suppl\* and risk”).

Alongside the details of the relevant article, an evaluation/summary was written into the spreadsheet. The evaluation included each article’s main findings and any observations salient to the research question. The evaluation was developed from a reading of each article’s abstract, conclusion, and, in some cases, entire text.

Articles that were returned by all three searches were considered highly relevant to the research question. In the spreadsheet, the details of these articles, along with those of other articles whose relevance was deemed high following evaluation, were highlighted in red for emphasis and ease of reference. In the preceding diagram, articles returned by all three searches so can be considered important to this research, are represented by the central red area.

### **2.1.6 Filtration of Results**

Based on the evaluation and a reading of the abstract, each article was included or excluded according to specific inclusion, exclusion, and quality criteria (see Appendix). Various criteria were used to filter the articles according to articulated conditions of quality and suitability. These criteria were developed to limit the material of this research to articles that are fully compliant with normal academic standards, and to preclude articles originating in unrelated disciplines, or whose methods fall outside the orthodox triad of qualitative, quantitative, and conceptual/theoretical papers.

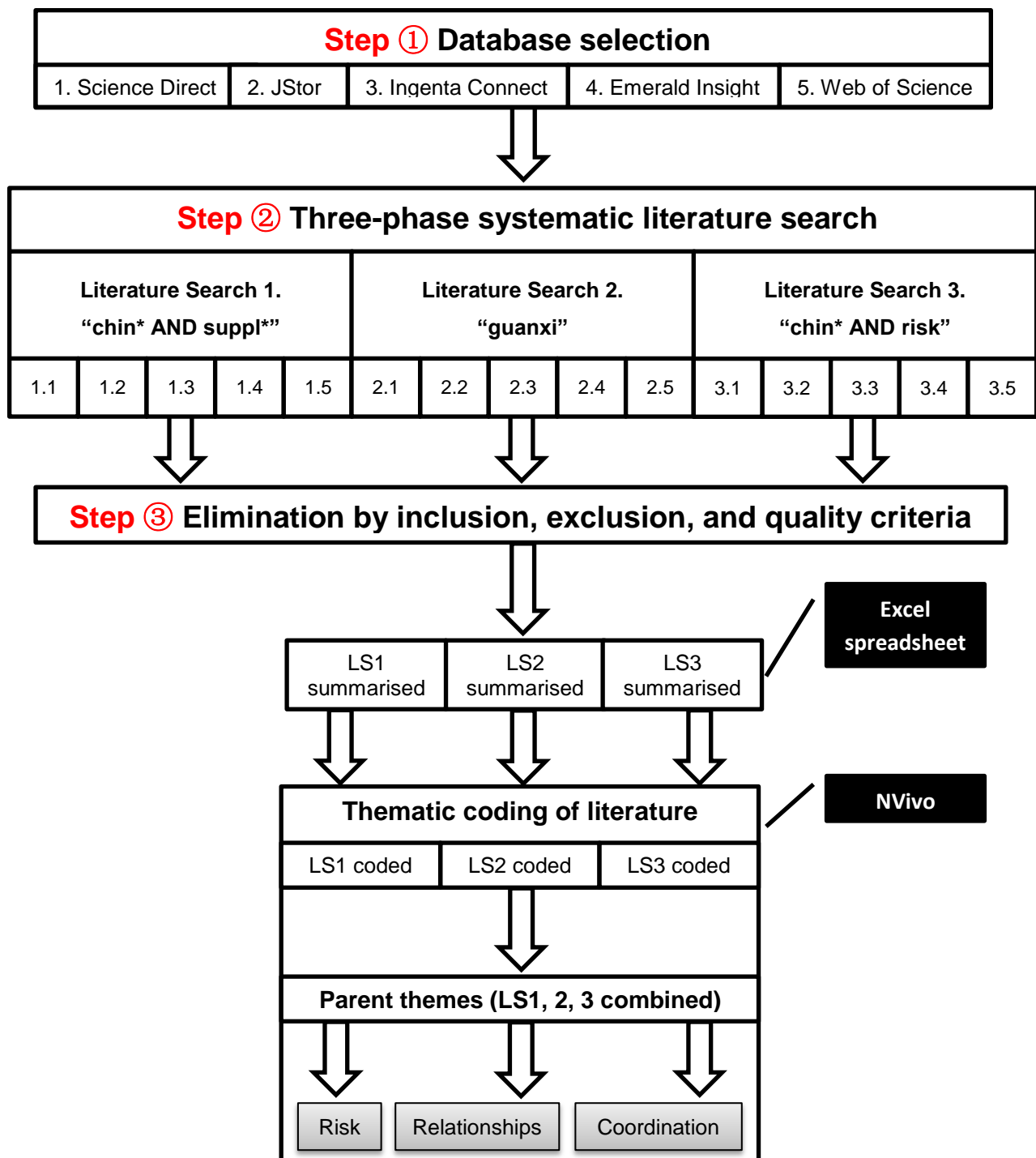
Furthermore, all criteria were derived from the research questions, follow the recommendations by Harden *et al* (2004), and imposed in order to limit the review to articles meeting consistent and transparent conditions of quality and relevance, and thereby reduce the possibility of unseen bias in selection. Due to the specificity

enforced by the terms and conditions of the initial searches however, few articles were removed at the elimination stage. (The Appendix contains the full details and pre-and post-elimination article counts of each literature search.)

Articles cited fewer than 40 times were excluded on the rational premise that citation count is indicative of an article's degree of discourse influence. Since this biases selection in favour of older, not necessarily more relevant, articles however, an important caveat was applied: articles meeting the other inclusion criteria but having a citation count of fewer than 40 would be included if their title, abstract, or keywords indicated relevance to the research question. This way, selection was both intelligently encompassing and topical.

Figure 5 illustrates all three steps and the two subsequent coding phases.

Figure 5 Systematic Literature Review: A Method with Three Processes



### **2.1.7 Data Analysis Framework**

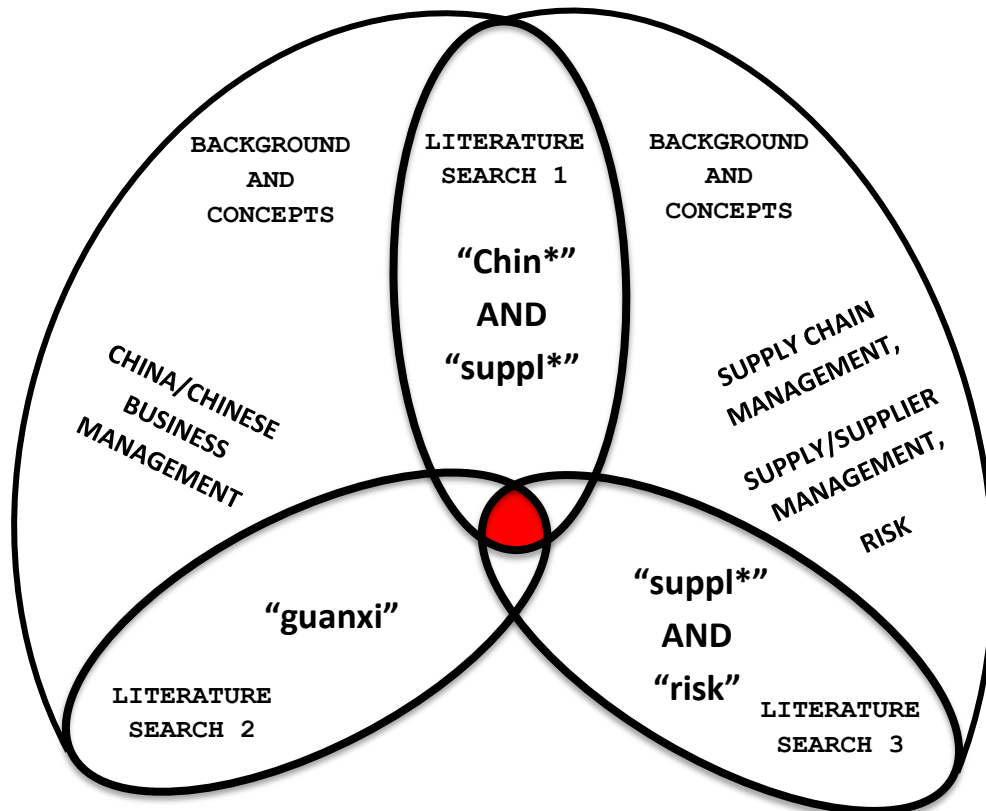
All three sets of systematically retrieved articles were encoded using NVivo. The nodes were, unsurprisingly given the specificity of the search terms that had generated the three sets of literature, classifiable into three overarching parent themes: risk, relationships, and coordination. The analytical narrative reviews that constitute the literature review chapters of this thesis developed systematically as the articles, encoded using NVivo, began to expose recurrent concepts and commonalities; comparisons and contrasts between studies appeared, and sources other than the articles captured by the systematic method enriched the discussion. The child themes contained within the parent themes revealed areas of theory and observations of interest that could be explored further by in-depth interview. The template of the semi-structured interview was thus derived.

### **2.1.8 Coverage and Structure**

In sections 2.2 and 2.3, the streams of literature collected by the traditional review and the three systematic reviews are merged. The streams were purposefully designed to examine related areas of literature; hence there is overlap in the information they yielded. Recurrence of the themes that arose in the four was such that separating the review according to streams would incur unnecessary repetitions and structural complexity (for this reason, 2.2 and 2.3 are separated according to themes not streams). Hence the review combines the findings of all four streams, and separation is by subheadings that correspond to the themes of interest.

The following Venn diagram (Figure 6) shows the four areas of literature examined and their point of common intersection. A small number of articles recurred in all three systematic searches (hence the relative smallness of the red area). However, since all four areas of literature examined related research, the coverage thus achieved was expansive.

Figure 6 The Literature Review: Informative Discourse and Targeted Searches



In broad terms, the aggregate of the literature streams indicates that in the Sinitic context of supply chain management, understanding key concepts of culture – particularly low-trust, relationships, and guanxi – help lower supply-related risks and improve business practice generally.

## 2.2 SC Risk

“Supply chain management” occurs first in Oliver and Webber’s article of 1982, despite no prior literature having explicitly announced “supply chain”. The present review is *logically* rather than historically ordered, so elucidates SC *before* SCM.

“Supply chain” began receiving theoretical attention in the 1990s. To craft value- and demand-related concepts that required contrastive qualification, academic writers coined revisionist definitions (see Table 1). Gereffi (1994), for example, writing at a time when continued geographical diffusion of manufacturing looked inevitable and irreversible, argued for the replacement of “supply chain” with “commodity chain” in acknowledgement of technological parity across the increasingly global nature of production.

Because “supply” infers supplier, not customer, supremacy, Christopher (1998) and Vollman *et al* (2000) proposed extension beyond the supplier-buyer dichotomy, with their term “demand chain”. Walters and Rainbird (2004) and de Treville *et al* (2004) later asserted that “demand” is more descriptive: the demand chain subordinates the SC, and thereby subjugates the SC to functional status. “Chain” invokes linear arrangements of nodes – a configuration that although perhaps logically envisioned is rarely reflective of diffuse sourcing and production. Lambert *et al* (1998) restate the linear imagining of supply by describing SCs as companies *aligned* for the purpose of bringing goods to market. Even though Christopher (1992) described SCs as “networked organisations”, the more realist descriptor “network” has yet to replace “chain”.

Several definitions of SC dominate. Christopher (1992, p.10) offers a generic and much-cited definition: the SC is “a network of organisations that are involved through upstream and downstream linkages...in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumers.” This definition portrays multiple organisations operating upstream and downstream to provide value.

In the 1990s, highly-cited, representative definitions of SC, such as the above, emphasized the networking and connectedness elements of the SC concept. Later definitions describe *features* of the SC. Acceptance of the core concept is inferable when the discussion moves toward particulars. For example: Ritchie and Brindley (2000) call for a definition that mentions the flow of information and finance that is, they claim, the lifeblood of the SC. Such a claim would be groundless if the integrated network/relationship attribute of the SC was untenable and unaccepted. By 2000, influential authors were describing the *traits* of competitive SCs.

Christopher and Towill (2000) and Mason-Jones *et al* (2000) advocated the *lean and agile* SC – a notion that recurs heavily in the literature of the subsequent decade. Similarly, Christopher and Peck (2004, p.1) defined SCs as “dynamic networks of interconnected firms and industries” and then proposed the *resilient* SC (discussed later).

Various post-1990 definitions of SC mention integration and relationships (see red text in Tables 1 to 3), and a steady ascension from SC-as-concept into SC-as-paradigm is discernible.

Streams have emerged in the literature. Articles discuss SCs from one of three perspectives: structural, systems, and strategic or relational. Of these, only the systems perspective corresponds with the concerns of traditional logistics: systems literature focusses on improvement in processes and efficiencies (Cooper *et al*, 1997). The structural perspective focusses on competitive advantage through optimal *configuration*, in which each activity translates to customer *value* – making SC concepts similar to Porter’s “Value Chain” (1985).

Later research (e.g. Ritchie and Brindley, 2000) shows deepening interest in the *relationship* aspects of SCs. Here focus is on the creation and management of inter-organizational relationships, to enable operational and strategic integration and risk/liability sharing.



*Table 1 A Chronology of Authorship and Definitions of “Supply Chain” (SC)*

Year	Author(s)	Term	Definition/Concept
1988	Houlihan	SC	[The SC] operates as a single process. Responsibility for the entire chain is centralized. Supply is the common objective of every function of every firm in the chain.
1989	Stevens	SC	[The SC is] a system whose constituent parts include material suppliers, production facilities, distribution services and customers linked together by feed-forward flow of material and feedback flow of information.
1992	Christopher	SC	[The SC is] a network of organisations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer.
1994	La Londe and Masters	SC	“[The SC is] a group of firms connected by the sequence of the passing onward of materials or product.
1998	Aitken	SC	[The SC is] a network of connected and interdependent organisations <i>mutually and cooperatively working together</i> to control, manage and improve the flow of materials and information from suppliers to end users.
1998	Lambert <i>et al</i>	SC	[The SC consists of] firms aligned for the purpose of delivering products to market.
1998	Morehouse	SC	[Supply chains are] extended enterprises with <i>relationships</i> which embrace business processes, from materials extraction to consumption.
1999	Handfield and Nichols	SC	[The SC] encompasses all activities associated with the flow and transformation of goods from the raw material stage (extraction), through to the end user, as well as associated information flows. Supply chain management is the <i>integration</i> of these activities through improved supply chain <i>relationships</i> to achieve sustainable competitive advantage.
2001	Mentzer <i>et al</i>	SC	[The SC is] a set of three or more companies directly linked by one or more of the upstream and downstream flows of products, services, finances, and information from a source to a customer.
2004	Hines	SC	[The SC] covers all activities associated in acquiring and moving products/services from source to end user.
2007	Chartered Institute of Purchasing and Supply	SC	[The SC] conceptually covers the entire physical process from obtaining the raw materials through all process steps until the finished product reaches the end consumer. Most <i>supply chains consist of many separate companies, each linked</i> by virtue of their part in satisfying the specific need of the end consumer.
2008	Harrison and Van Hoek	SC	[The SC] is a <i>network of partners</i> who <i>collectively</i> convert a basic commodity (upstream) into a finished product (downstream) that is valued by end customers, and who manage returns at each stage.
2010	Chopra and Meindl	SC	[The SC] <i>consists of all parties involved</i> , directly or indirectly, in fulfilling a customer request.
2010	Peck	SC	[SCs] comprise flows of materials, goods, and information (including money), which pass between and within organizations, linked by a range of tangible and intangible facilitators, including <i>relationships</i> , processes, activities and integrated information systems. They are also linked by physical distribution networks, and the national/international communications and transport infrastructures. In their totality, <i>supply chains link organizations, industries, and economies</i> .
2010	Rushton <i>et al</i>	SC	“supply chain = suppliers + logistics + customers”

### 2.2.1 Supply Chain *Management* (SCM) Defined

In the 1980s and 1990s, several theorists proposed concepts highly analogous with SCM (see Table 2). These concepts, because they parallel SCM, imply a burgeoning consensus among business academics that a SC-like phenomenon was actual and awaiting formalization in theory.

*Table 2 A Chronology of Terms/Concepts Analogous with “Supply Chain Management” (SCM)*

Year	Author(s)	Term/Concept
1984	Burt	<i>integrated purchasing strategy</i>
1991	Ellram	<i>an alternative form to vertical integration</i>
1991	Farmer and Ploos van Amstel	<i>supply pipeline management</i>
1992	Lee and Billington	<i>value-added chain</i>
1993	Lamming	<i>buyer-supplier relationship; supply base management</i>
1994	Nishiguchi	<i>supply networks</i>
1997	Farmer	<i>supply pipeline management</i>
1997	Jones <i>et al</i>	<i>value stream</i>
1997	Lee and Ng	<i>management of a network of organizations or entities</i>
1997	Lewis <i>et al</i>	<i>supply base management, strategic supplier alliances</i>
1997	New and Ramsay	<i>lean chain approach</i>
1998	Tan <i>et al</i>	<i>supply chain synchronization</i>
1998	Dyer <i>et al</i>	<i>supplier integration</i>
1998	Nassimbeni	<i>network supply chain</i>
1999	Harland <i>et al</i>	<i>supply strategy</i>

In the case of SCM, definitional diversity reflects the evolution of the concept/theory succinctly. Definitional diversity, although a complicating factor in a synoptic literature review such as this and in academic taxonomy generally, is not entirely negative: Anderson (1983) claims that diversity within a field deepens the knowledge base; the status of a field is enhanced if debate occurs, because diversity signifies epistemological precociousness and industrial relevance.

Cooper *et al* (1997) posit that “SCM” and “logistics” were once interchangeable and synonymous terms. According to Sweeney (2011), the definitions of SCM are multiple and agreement sparse. The present author contends that definitions vary, but mostly by *emphasis* – the majority exhort cross-entity integration, relationships, and material and informational flow (Table 3 presents the most influential SCM definitions). A philosophical commonality prevails: *integrated SCs provide performance benefits* (New, 1996).

Table 3 A Chronology of “Supply Chain Management” (SCM)

Year	Authors(s)	Term	Definition/Concept
1958	Forrester	N/A SC/SCM antecedent	Proposed a theory of distribution management that advances <b>integration</b> as vital to organisational <b>relationships</b> . Advantage can be achieved by improved understanding of the <b>relationships between functions</b> within the company, and <b>between companies and their markets, their industries, and the broader economic environment</b> . Inadequate communication along any supply system generates disadvantageous outcomes, such as demand amplification, also known as the “bullwhip effect”.
1962	Drucker	Logistics/ business logistics (SC/SCM antecedent)	<i>Company competitive advantage can be achieved by examination and improvement of logistics systems. Logistics is “the economy’s dark continent”, i.e. that part of a business’s organisational structure most likely to evade scrutiny and therefore least likely to be subjected to profit-based reconfiguration.</i>
1982	Oliver and Webber	SCM	[SCs include] <i>the flow of goods from supplier to end user, through the manufacturing and distribution chains.</i> [SCs have four key features:] <ul style="list-style-type: none"> <li>• they must be <b>perceived and managed as a single whole</b>,</li> <li>• they must be governed strategically,</li> <li>• systemic <b>integration</b> must be rigorous, and</li> <li>• inventory balancing can occur within the SC only as a final measure.</li> </ul>
1991	Ellram	SCM	[SCM is] an <b>integrated</b> approach for dealing with planning and control of materials from suppliers to end users.
1992	Christopher	SCM	[SCM is] the management of a <b>network of organisations</b> that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer.
1993	Cooper and Ellram	SCM	[SCM is] a form of vertical <b>integration</b> between separate identities, and a <b>management philosophy or corporate ethos of integration, corporation, and co-ordinated group effort</b> .
1994	La Londe and Masters	SCM	[SCM involves] two or more firms in the SC entering into a <b>long-term agreement</b> ”, “the development of <b>trust and commitment</b> to the <b>relationship</b> ”, “the <b>integration</b> of logistics activities involving the <b>sharing</b> of demand and sales data”, and “the potential for a shift in the locus of control of the logistics process”.
1995	Berry et al	SCM	[SCM] aims at building <b>trust</b> , exchanging information and market needs, developing new products, and reducing the supply base to a particular original equipment manufacturer (OEM) so as to release management resources for developing <b>meaningful, long-term relationships</b> .

Year	Authors(s)	Term	Definition/Concept
1997	Cooper <i>et al</i>	SCM	[SCM is] the <i>integration</i> of business processes across the supply chain; an <i>integrating philosophy</i> to manage the total flow of the distribution channel from supplier to ultimate customer.
1998	Council of Supply Chain Management Professionals (CSCMP)  This definition was used by the Council of Logistics Management (CLM), the organisation that became the CSMP.	Logistics versus SCM	Articulated concisely the emerging distinction between SCM and logistics: <i>Logistics is that part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption in order to meet customer's demands.</i>
1998	Lambert <i>et al</i>	SCM	[SCM] is the <i>integration</i> of key business processes from end-user through original suppliers that provides products, services, and information and advice for customers and other stakeholders. [SCM] deals with total business process excellence and represents a new way of managing the business and <i>relationships</i> with other members of the SC.
1998	Monczka, Trent and Handfield	SCM	[SCM is] a system of management that demands centralised coordination of all material flows and related processes, achieved by <i>integration</i> with suppliers in all tiers. [SCM is] a concept of <i>incorporation</i> for the purpose of control, which is realised via a system of total management with influence over all functions and tiers.
1999	Lummus and Vokurka	SCM	[SCM] is traceable directly back to the introduction of Quick Response (QR) manufacturing techniques pioneered by the textiles industry and Efficient Customer Response (ECR) in the groceries industry.
2000	Simchi-Levi <i>et al</i>	SCM	[SCM] is a set of approaches utilised to efficiently <i>integrate</i> suppliers, manufacturers, warehouses, so that merchandise is produced and distributed at the right quantities, to the right locations and at the right time, in order to minimise system-wide costs while satisfying service level requirements.
2010	Council of Supply Chain Management Professionals (CSCMP)	SCM	[SCM] encompasses the planning and controlling of all processes involved in procurement conversion, transportation and distribution across a supply chain. SCM includes <i>coordination and collaboration</i> between partners, which can be <i>suppliers, intermediaries, third-party service providers</i> , and customers. In essence, SCM <i>integrates supply and demand management within and between companies</i> in order to serve the needs of the end customer.

The red text in these tables reveals the prevalence of integration and related concepts in the definitions.

### 2.2.2 SCM Philosophy

The philosophy of SCM seems embodied in the concept of *integration*, which in multiple-firm scenarios is believed to generate competitive advantages for the aggregate. Concern with tools and techniques has not however subsided. In fact, SCM reveals its historical and continuing proximity with operations management and logistics by its borrowing of lean, agile, leagile, and other manufacturing concepts (all of which are discussed later).

The SCM philosophy can be considered generative and/or symptomatic of a shift away from production-side prioritizing, push-dominant systems toward customer-oriented, pull-dominant systems. The concept of logistics' transformation into integrative systems thinking is not unique to the SCM philosophy. At least three other models chart a similar path:

- Masters and Pohlen (1994): logistics management and roles of managers;
- La Londe and Masters (1994): three phases of logistics integration; and
- Battaglia (1994): fragmentation-to-integration: from logistics to SCM.

Despite the modernity suggested by notions of collaboration and integration, the SCM concept invokes systems theories of the 1950s and generalist concepts of holism and synergy (Cavinato, 1992). Antecedence is perceptible in early theorisation on holistic approaches to logistics chains (e.g. Lewis, 1956) and the "Total Cost" approach by Heckert and Minor (1940).

Davenport (1998) and Fawcett and Magnan (2002) argue that companies fail to reap the benefits proclaimed by SCM proponents. They cite the increasing complexity incurred by the centralisation inherent in the coordination of collaborative practice, the increasingly global nature of SCs, and the ever compressing lifespans of the products that SCs deliver. The reasons why companies fail to achieve competitive advantage through SCM have received sparse discussion, and empirical support for the much lauded integration concept is, according to these authors at least, lacking.

### 2.2.3 Supply Chain Risk Management (SCRM)

Cooper *et al* (1997) observed that since the “logistical chain” evolved into a SC, risks have multiplied and the character of risk is complicating as SCs elongate. By the 2000s, discussion of logistics and supply management occurred within the SCM paradigm. The prominence of SC risk and its management has grown accordingly.

“Risk” is conceptualised variously, depending on the business literature in which it appears (Manuj and Mentzer, 2008). The SCM theorists Harland *et al* (2003, p.52) defined risk as “chance or danger of damage, loss, injury, or any other undesired consequences”.

The *sources* of SC risk have become germane to the study of SCM. To Christopher (2000) and Cohen (2000), one key source is demand uncertainty. Ritchie and Brindley (2000) and Johnson (2001) attribute SC risk to a duplex composite of demand- and supply-side uncertainty. The foregoing are somewhat circular deductions: risk is rooted in uncertainty, which is risk. Perhaps the point to note is that SC risk – when discussed in the SCM literature – is typically countered by application of SCM principles: by improved integration between marketing and production, for example (Christopher 1998, 2000).

Christopher and Peck (2004) aver that longer SCs have greater vulnerability. To reap SC efficiencies, organisations and their value-creating processes must have stable links and nodes. Manuj and Mentzer (2008) report that internationally active firms operate complex SCs that demand coordinated cross-border exchange of information, materials, capital, and goods. It is rational to assume that the performance of global SCs is determined by multiple factors, some of which will be purely logistical/operational (transportation or product quality related), structural (coordination and control related), microeconomic, and cultural/interpersonal. To date, researchers have concentrated on the logistical/operational factors in this matrix. The literature lacks conceptual frameworks and empirically supported theorization to furnish practitioners with normative guidance on *cultural* and *country-specific* SC risks.

Svenssen (2001) believes SC risk is a complex, multifaceted phenomenon, and divides sources of SC risk into two categories: atomistic or holistic. Atomistic sources concern simple, low volume, generic, or highly available materials and components. Such risks might be context-specific, unique, and contained. Holistic risks occur in complex product-generating SCs. Holistic risk is potentially contagious, structural, and generally impactful.

Mason-Jones and Towill (1998) stream SC risk into three categories: 1. internal to firm (processes, control); 2. external to firm but internal to SC network (demand and supply fluctuations); and 3. purely external (e.g. environmental). The issue of SC risk compels consideration of the correspondent notions of SC *resilience* and *vulnerability* (hereafter “SCRES” and “SCV” respectively). The study of SCRES and SCV is a steadily developing territory in logistics and SC research. A report commissioned by the Department of Trade and Industry in 2001 (Cranfield) could be regarded as the germinating document. The report (p.2) defines SCV as “exposure to serious disturbance, arising from risks within the supply chain as well as risks external to the supply chain”. This definition indicates that its authors, like Mason-Jones and Towill (1998), divide risk into internal and external. *Internal* risk, we learn, concerns factors under direct management control (e.g. product specifications, statements of work, quality standards); *external* risk concerns events and conditions management cannot control (e.g. commodity prices, natural disasters, macroeconomic turbulence, disruptive sociopolitical events).

Harland *et al* (2003) articulated the advantages of global SCs: outsourcing; borderless transfer of capital, information, people, products and services; expansive e-business opportunities; acquisition of human capital and technology; and exploitation of economies of location (labour costs, currency differentials, productivity levels, and taxes).

The SC literature overlooks the general but significant “liabilities of foreignness” that feature strongly in the discourse on foreign direct investment (e.g. Hymer, 1960; Zaheer, 1995; Zaheer and Mosakowski, 1997). If the foreignness penalty is tenable, the global SC is an intrinsically risk-fraught apparatus, with precariousness presumably proportional to degree of internationality.

Table 4 provides several definitions of risk from SCM specialists (academics such as Waters, and practitioner-focussed writers such as Emmett), operations management theorists (Schroeder and Slack *et al*), and generalists (The Royal Society, 1983; Adams, 1996).

The preceding discussion and the following definitions indicate convergence on the meaning of “risk” in the SC literature, and between practitioners and academics.



Table 4 Definitions of "Risk"

Year	Author	Definitions
1987	March and Shapira	<i>Risk is the variation in the distribution of possible supply chain outcomes, their likelihood, and their subjective values. (p.1404)</i>
		<i>Risk is probability (of a given event) X severity (negative business impact) (p.1405)</i>
1993	Schroeder	In operations management, most risk is type I and type II error, and the possibility of the occurrence of negative events caused by a mixture of internal and external factors.
1996	Adams	Risk focuses on the identification, quantification, management, and reduction of specifically identified, quantifiably expressed, purposefully narrowed known knowns.
2001	Borge	<i>Risk is a measure of the possible upside and downside of a single rational and quantifiable financial decision. (p.3)</i>
2003	Hetland	<i>Risk is an implication of a phenomenon being uncertain. (p.59)</i>
2004	Slack <i>et al</i>	Operational risk is mostly external in nature: natural disasters, terrorist incidents, industrial disputes, and plant incidents (which could result from factors that are external, internal, or a combination of both).
2005	Emmett	In SCs, risk is the product of internal factors such as weak links and choke points, and external factors such as material availability and other macroeconomic conditions.
2005	Taylor	Variability in supply chains translates directly into risk.
2007	Tiffin and Kissling	Risk is related to the number of handoff stages within the SC: the risk of something going wrong increases in proportion to the number of handoff points.
2007	Waters	<i>Risks to the supply chain are unforeseen events that might interrupt the smooth flow of materials. There are always risks that the delivery will be later than promised, the goods will be damaged or lost, the wrong product will be delivered the wrong amounts, the delivery will go to the wrong place, the invoice will have a mistake, the customer will not pay – or the many other things that can go wrong. (p.14)</i>
		<i>The main risk to supply chain is disruption to the flow of materials. (p.17)</i>
		<i>Risk occurs because there is uncertainty about the future. This uncertainty means that unexpected, risky events may occur. Some [risks] arise from external effects on the environment, while others arise from internal operations; some are long-term so might strike at any point into the far future, and others are short-term and soon disappear; some have minor impact, while others destroy entire supply chains; some appear regularly in normal operations, and others are one-off disruptions such as natural as disasters. But the risks can only really materialise when some harmful events actually occur. (p.14)</i>
		<i>The essential feature of risk is a quantifiable analysis, principally involving events with known probabilities. Risk management becomes the broad function for dealing with risk. (p.18)</i>
2010	Waters	<i>Risk to supply chains is any threat of an event that might disrupt normal flows of materials or stop things happening as planned. (p.474)</i>
		<i>Risk management is the process for systematically identifying, analysing and responding to risks throughout an organisation. (p.477)</i>
2014	Manners-Bell <i>et al</i>	Emerging markets/less developed and developing countries pose a greater source of threat [risk] to supply chains than developed regions.

The selection of these definitions was purposeful: a focus on risk as it appears in SC(M) literature alone would be excessively narrow; in many texts, SCM and SCRM are discussed as disciplines and sub-disciplines under operations management; several key articles on SCRM cite generalists' definitions; inclusion of definitions

from various sources reveals definitional commonality across a broad spectrum of literature.

Because SCs are becoming leaner and more agile, and because suppliers are increasingly globally dispersed, today's SCs are fragile and prone to interruption (Emmett, 2005). Potentially, the risk of disruption has increased dramatically as a result of excessive focus on the *efficiency* of SCs, at the expense of *effectiveness* (Christopher, 2002). For example, the cost-savings alleged to derive from reduced inventory systems can be neutralised by the risks that such minimalist practices impose on system-wide performance. Unless management recognises the challenge and acts upon it, the implications could be "chilling" (Christopher, 2002). For Slack *et al* (2004), such "chilling" effects are natural disasters, terrorism, industrial disputes, and plant incidents, i.e. *external* factors. Like Schroeder (a fellow operations management theorist), Slack *et al* (2004) omit mention of the *internal* complexities and *human factors* that must arise when SCs globalise.

Manners-Bell *et al* (2014) claim that manufacturing in emerging markets is intrinsically more risky than manufacturing in developed countries. Of particular relevance to this research is the issue of risk in China-operating SCs.

#### 3.1.3.1 SCRM Defined

Paulsson, in his extensive review (2004) of SCRM, defines SCRM (p.80) as "to, collaboratively with partners in the supply chain or on your own, apply risk management process tools to deal with risks and uncertainties caused by, or impacting on, logistics related activities or resources in the supply chain." This is an enlargement of Norrman and Lindrith's definition (2002, p.7): "Supply chain risk management is to, collaboratively with partners in a supply chain apply risk management process tools to deal with risks and uncertainties caused by, or impacting on, logistics related activities or resources."

SCRM is defined by Jüttner *et al* (2003, p.9) as "the identification of potential sources of risk and implementation of appropriate strategies through a coordinated approach among supply chain risk members, to reduce supply chain vulnerability."

#### 2.2.4 Supply Chain Resilience (SCRES)

Christopher and Peck (2004) maintain that resilience in SCs requires flexibility and agility. SCRES is contingent on efficient and reliable transportation and communication systems. These rudimentary variables are commonly overlooked by SC theorists and usually absent from management concepts. These authors propose four basic conditions of SCRES:

1. Resilience must characterize the entire SC design. This demands deep understanding and analysis of the SC. Mapping tools should be used to locate and manage “pinch points” and “critical paths”.
2. High level collaboration helps identify and mitigate risk.
3. Design of the SC must enable *agility* – the ability to respond rapidly to disruptive, unpredictable events.
4. A risk-awareness culture must be inculcated at all levels of the organization, and a management culture of collaboration established.

Christopher and Peck (2004) profess that SCRM is the *antecedent* of SCRES. Empirical support exists for SCRM, but for SCRES there is only *conceptual* support. To its credit however, SCRES is premised on the probabilistic position that resilience planning is sensible because risk is natural and disruption inevitable.

Ponomarov and Holcomb, (2009, p.131) provide a precise definition of SCRES: “the adaptive capability of the supply chain to prepare for unexpected events, respond to disruptions, and recover from them and maintain continuity of operations at the desired level of connectedness and control over structure and function.” Later, Ponomarov and Holcomb (2009) identify four capabilities as key to resilience:

1. *Flexibility*: described by Peck (2005) as an elemental aspect of resilience, and by Skipper and Hanna (2009) as the capacity of the SC to effectively respond to adverse events. Tang and Tomlin (2008), among others, argue that flexibility must be designed directly into the SC. Sheffi and Rice (2005) encourage SC designers to include redundant systems to enhance resilience.
2. *Velocity* concerns the efficiency of SC response and recovery. In recent years, velocity has gained ground as a credible alternative to SC inventory and/or redundant systems (Walden, 2006). Advocating timeliness as preferable to quantity (just-in-case) for the purposes of economy, velocity thinking invokes

just-in-time (JIT) and lean principles, and has thus acquired centrality within the SC orthodoxy. In terms of resilience however, velocity refers to the speediness of the SC's response (Stevenson and Spring, 2007).

3. *Visibility*: the identity, location, and status of entities and product in the SC. Visibility enables preventative planning and real-time corrections in proportion to the magnitude of the disruption. Visibility enhances SC responsiveness and recoverability. Several authors (e.g. Christopher and Peck, 2004; Chopra and Sohdi, 2004; Faisal *et al*, 2006) include visibility with flexibility as elements of *agility* (discussed later).
4. *Collaboration* overlaps visibility since SCRES is a network-wide philosophy of practice. Individual organisations create SC visibility by exchanging information. Collaboration between organisations reduces uncertainty and increases readiness. Richey (2009) defines collaboration (p.623) as “the glue that holds supply chain organisations in a crisis together”.

### **2.2.5 Supply Chain Vulnerability (SCV)**

To Jüttner and Maklan (2011), supply chain *vulnerability* (SCV) is the managerial counterpart of SCRM. Similarly, to Blos *et al* (2009) and Christopher and Peck (2004), SCV is the susceptibility of the SC to the possibility and ramifications of disruption. Since anything at risk is vulnerable, the existence and validity of SCRM declares SCs vulnerable. Thus, SCV and SCRM are commonly considered complementary (e.g. Wagner and Bode, 2006).

### **2.2.6 Untangling SCRES, SCV, and SCRM**

Although SCV reduction is a major preoccupation of SCRM (Peck, 2006), SCV reduction does not necessarily increase SCRES. Suppliers might be located in politically stable countries, but SCV measures do not automatically improve SCRES. The only certain effect is reduction of the SC's vulnerability to particular *types* of risk (political, economic etc.). However, knowledge of SC risk improves event readiness (SCRES), because it increases end-to-end visibility and shortens the time required for detection of events (Manuj and Mentzer, 2008).

- ❖ SCRM decreases SCV; SCRM increases SCRES (resilience↑ = vulnerability↓)
- ❖ SCRES decreases SCV

- ❖ SCV can be reduced by knowledge sharing, supplier collaboration, and other SCRM initiatives. SCRES increases as a result of such initiatives.
- ❖ SCV does not increase SCRES. The inverse is the case: SCRES decreases SCV.
- ❖ SCRM can decrease SCV directly, or indirectly through SCRES.

### 2.2.7 Critiquing SCRM

The literature of SCRM is coherent in its promulgation of SCM-compliant solutions to risk. Mitigation methods involve deeper application of SCM precepts. The possibility that risk might be addressed by adoption of an *alternative* philosophy awaits presentation.

There is ambiguity concerning the applicability of SCRM. Can SCRM describe risk in SCM theory-compliant SCs alone, or in legacy systems and hybrids also? Does SCRM have value to non-SC systems or non-SCM supply arrangements? Is risk in non-integrated systems also an issue tackled by SCM theory? Christopher and Peck (2004) contend that lack of understanding among managers of their wider supply/demand network is strongly evident: managers envision their supply networks as linear configurations. This implies deficient comprehension of SCM principles on the part of managers, and prompts two questions:

- ❖ How well are SCM and SCRM principles applied and understood by practitioners?
- ❖ To what degree are the theories and concepts of SCM and SCRM applicable to (and reflective of) real world scenarios?

### 2.2.8 Collaboration

A conceptual paper by Christopher and Lee (2004) argues that in every industrial sector, demand volatility is higher than in the past and SCs are increasingly vulnerable to disturbance or disruption as they extend globally. The adoption of lean practices and outsourcing, along with general trends toward supplier base reduction, are typical responses to SC risk – but can actually *increase* SC risk. A key element in SC risk management is end-to-end visibility. SC confidence increases directly in proportion to SC information quality. The two principal factors of SC resilience are visibility and control.

The question of whether collaboration – a core tenet of SCM – is necessarily beneficial was raised by Finch (2004), whose examination of the literature found the benefits to be acutely conditional on the composition of the collaborative membership. According to Finch's summation, large companies can *increase* their SC risk by partnering with SMEs and engaging in inter-organisational networking.

Also challenging the collaboration principle, Ellegaard (2008) revealed the following defensive supply risk management practices to be commonplace: knowledge *protectionism* (antithetical to the sharing ethos of SCM), *local sourcing*, and (more compliantly) *relational methods*, such as fairness, loyalty, and identification of responsive and dependable partner companies. Ellegaard proposed that relational practices are of value to purchasing and SC managers because they are feasible *alternatives to formal methods* of SC risk reduction.

Working on the premise that SC risk management via formal means (i.e. contractual) is prevalent practice, Selviaridis and Norrman (2014) applied agency theory to case studies of logistics services SCs. Their study revealed four factors for consideration in the management of contractual relationships and the various interactions that occur inside SCs: 1. performance "attributability" (visibility); 2. balancing provider risk against reward; 3. provider's freedom to transfer risk to subcontractors; and 4. *relational* governance along the SC. They concluded that service performance measurability can reduce risk, that performance influencing factors should be identified (roles, inputs, and requirements of customers and other relevant parties), that inputs from customers and third-parties are unambiguous and manageable, and that quality conditions in performance-based contracts are clearly stipulated. Of most significance to this research (and Ellegaard's proposal) is these authors' conclusion that relational governance can be used in conjunction with formal practices *but is effective only in lowering particular types of risk*.

Further complicating the picture is the investigation by Dekker *et al* (2013) into how buyers manage risk in inter-firm transactions. Their study of Japanese manufacturing companies revealed that transaction-based relationships are *less* effective than competence trust as control practices. This conclusion is predicted by the SCM paradigm, since it favours extra-transactional collaboration. However, these authors

also deduced that contractual and other formal measures can *reduce* (not supplement) supplier cooperation.

The foregoing notwithstanding, the consensus of the research into SC risk is that collaborative relationships offer more positives than negatives. The study by Zhai *et al* (2013) is exemplary: SC risk associates negatively with SC integration; the relationship between SC integration and performance is contingent. The key drivers of schedule attainment, competitive performance, and customer satisfaction are supplier performance, internal integration, and customer integration.

Support for risk reduction through structural management involvement came from Blos *et al* (2009), who found that SC risk in the Brazilian automotive and electronic industries is managed by a set of specific activities: improved communications, risk and continuity planning and training, and creation of a chief risk officer to coordinate SC risks and responses.

The findings of a survey by Lavastre *et al* (2012) were supportive: SC managers at French companies showed that to be effective, SCRM must be *intrinsically inter-organisational* and tightly incorporated into the strategic and operational activities of *all* involved organisations.

In strategic supplier relationships, the main form of risk management is collaborative *learning* (Hallikas *et al*, 2004). Mutual risk management and collaborative learning help SC members attain efficiencies. Collaborative relationships develop into strategic learning, joint measurement and innovation, protection of relationship-relevant knowledge, and increased communication.

Braunscheidel and Suresh (2009) recorded the high value of cooperative learning, and found that SCs that combine learning with strong market- and agility-orientation achieve reduced risk. They define SC “agility” as the capability (internally and with key suppliers and customers) to respond to market place change through effective SC partner interaction. Three practices influence agility positively: internal integration, external integration (with customers and suppliers), and external *flexibility*. Companies that are closely integrated with their suppliers and customers are better poised to react to market changes and SC disruptions.

The notion of flexibility through collaboration also appears in the work of Skipper and Hanna (2009), who consider flexibility a construct of top management support, resource alignment, usage and exchange of information and IT, and external collaboration.

A qualitative study by Fawcett *et al* (2002) prompts a powerful meta-conclusion: formal management activities improve collaboration, innovation, and competitive performance in SCs, but informal, trust-based methods are the core of collaborative alliances.

### **2.2.9 Relationships**

Survey findings by Zsidisin and Smith (2005) showed that perceived SC risk decreases if Early Supplier Involvement (ESI) in product design occurs – because ESI intertwines partners' outcomes and activities. Similarly, information exchange and relationship building was found to be key to supplier performance.

Olaja and Hallikas (2006) investigated the effect of power disparity on relationships. They found that in buyer-dominant supply networks, most risks relate to supplier responsibility and information reliability. Four important factors were identified: openness, trust, power, and dependency.

Leverick and Cooper (1998) found that *adversarial* relationships between suppliers and competitors become uncommon as collaboration increases. Their study of supplier-manufacturer relationships in the UK car industry identified a significant degree of collaborative supplier-manufacturer partnering.

In supply networks, relationships and risk interact strongly (Hallikas *et al*, 2004). The optimal strategy is to achieve effective relationships by balancing the rewards and risks across related organisations. Partners must work collaboratively to identify risks that can be resolved by joint effort.

Srinivasan *et al*'s survey of American firms (2011) yielded a conclusion that is representative: buyer-supplier relationship *quality* influences SC risk and performance strongly. Mutualist, non-adversarial relationships are optimal for the achievement of collaborative working.



### 2.2.10 Supplier Selection

Federgruen and Yang (2008) maintain that while SCM emphasises the benefits of consolidating suppliers, the problem of supplier *selection* is persistent. The distributed risk advantages of SCM are realizable only if selection is effective.

According to Trkman *et al* (2010), identifying which suppliers pose greatest risk is the first step in SC disruption management. These researchers propose a method of identification that is consistent with post-Taylorian contingency theories: SC strategy associates closely with supplier non-performance risk. Suppliers must be closely monitored and replaced if their performance falters. The focal firm must not bind itself to suppliers that cannot cope with environmental turbulence or fail to comply with strategy (which has implications for collaboration). When selecting a supplier, firms must consider four variables: SC type, supplier type, geographical dispersion, and business structure. Suppliers' shock absorption and resilience to tier 2 supplier disruption are also significant factors.

Levary (2007) proposed a model that simplifies the selection of reliable overseas suppliers. Attributes of supplier risk are measured using a set of characteristics that represent risk and reliability. Connected suppliers are ranked for risk, so a general measure of risk in the "reliability chain" becomes ascertainable. Levary identified the following reliability criteria: 1. supplier reliability – trust in the supplier's management, potential for labour issues, and intellectual property protection; 2. country risk – political environment, exposure to natural and man-made disasters, and currency risk; 3. transportation reliability – the efficiency of transport connections between supplier and the manufacturer; and 4. reliability of tier 2 suppliers. Of relevance to this research is Levary's omission of interpersonal, cultural, and other human factors of SC risk.

Wu and Olson (2008) offer an analytical tool for supplier/vendor selection based on simulations and calculation of risk. The tool enables trade-off analysis (expected costs, quality, on-time delivery, etc.). Kull and Talluri (2008) theorise a combination of analytical hierarchy process (AHP) with goal programming to assist in supplier selection. The combination acts as a supply risk reduction model that applies integrated multi-criteria decision making to help purchasing managers overcome the

supply risk-related problems of definition, operationalisation, and incorporation of risk measures into supplier selection.

Olson and Wu (2011) claim that global outsourcing is increasingly important as e-commerce develops international business. Outsourcing has many advantages, but incurs risk due to real-time communication challenges and problems in enforcing supplier/vendor compliance and production standards. Data-based methods allow SC core organisations to select supply partners effectively.

### **2.2.11 Contracts**

According to Li and Kouvelis (1999), contractual flexibility in sourcing agreements can reduce sourcing costs when price conditions are uncertain. In risky supply contracts, time flexibility provides major advantages, so is useful in environments where holding costs are low. Multi-supplier sourcing can reduce sourcing cost by offering quantity and flexibility. When risk-sharing windows are sufficiently wide, firms benefit most from exercising quantity and supplier flexibility.

Xu *et al* (2014) proposed that SC coordination can be achieved via two-way revenue sharing contracts. Risk perception positively influences the parameters of the coordinating contract. Also, manufacturers could persuade retailers to enter cooperative relationships with them, so that win-win situations become possible.

### **2.2.12 SC Complexity**

Risk increases in proportion to supply network complexity (Harland *et al*, 2003). Wagner and Bode's investigation (2006) into SC vulnerability showed that executives regard SC vulnerability as comprising the following factors: dependency on particular customers and suppliers, intensity of *single* sourcing, and dependency on *global* supply. SC design must consider the variables related to these so that risk can be reduced. Organisations operating SCs should attempt to reduce SC complexity. Single and global sourcing are both useful and powerful *when environmental factors are stable*. However, during instability, both become *sources of risk*.

According to Choi and Krause (2006), complexity is a key managerial consideration, particularly complexity of the supply base, which has three dimensions: 1. number of available suppliers; 2. extent of differentiation between suppliers; and 3. degree of interrelatedness between suppliers. Reduced complexity can lead to lower

transaction costs and greater supplier responsiveness (agility), but also to increased supply risk (resulting from reduced supplier innovativeness). Supply base/supply complexity reduction can lower costs but negatively impact overall competitiveness if not applied *selectively*.

A few researchers have investigated the *conditionality* of complexity factors: when suppliers are *reliable*, sole sourcing is the most cost-effective approach (Ruiz-Torres and Mahmoodi, 2007). With *unreliable* suppliers, more suppliers are required to achieve low costs. In extreme conditions (highly unreliable suppliers, high per-supplier losses, and inability to mitigate failure), a large number of suppliers constitutes optimum strategy.

Thun and Hoenig (2011) aver that while reducing supplier numbers can enhance supplier relationships, excessive rationalisation increases dependency and its resultant risks. Offshoring increases SC vulnerability because global SCs are vulnerable to faults and complexity-related issues.

### **2.2.13 Quality**

Risk-averse suppliers typically deliver high quality products, but supplier capability is not always indicative of high-quality – high capability suppliers sometimes deliver low quality goods (Starbird, 1994). Threat of rejection compels suppliers to improve/maintain quality. Starbird recommends acceptance sampling even when statistical justification is lacking.

### **2.2.14 Intermediaries**

Wiengarten *et al* (2013) identified *contextual* factors as determinative of outsourcing success: legal risk decreases outsourcing performance on both cost and quality; supplier risk decreases quality. A combination of contracts and management of contextual factors such as relationship management and intermediaries can lower risk.

## 2.3 Chinese Business Risk

### 2.3.1 Chinese Business Patterns

According to Limlingan (1986), Chinese business is highly relational. This is succinctly represented in the structure of the typical privately owned Chinese company system (in which institutional influence is negligible and private preference is determinative).

*Figure 7 Structure of the Typical Private Chinese Company*

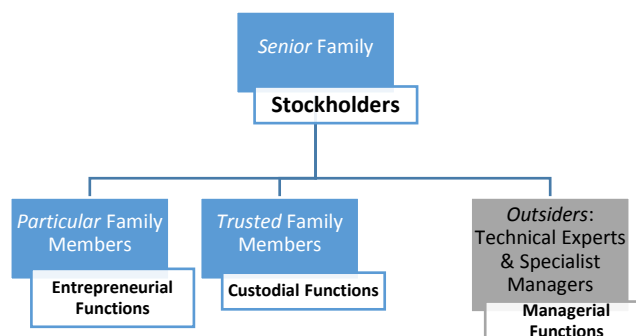


Figure 7 (adapted from Limlingan, 1986) illustrates the strong tie/in-group dominant profile of the traditionally patterned Chinese company. Outsiders provide only those functions not available in the strong tie-bound in-group, so have no controlling stake in the organisation. For foreign companies seeking SC relationships with Chinese companies, this preference presents a challenge: can untrusted outsiders gain the influence and control available to strong tie-bound, in-group members? According to SCM principles, mutualism rewards all participants, but the in-group/out-group dichotomisation appears to oppose this tenet.

### 2.3.2 Chinese Business Relationships

Styles and Ambler (2003) claimed that China is a “highly relational society”, but found that transactional approaches to marketing in China coexist alongside the more commonly reported relational methods. The two approaches are compatible; their utility varying according to situation. Hence, elements of both approaches can be synthesised for advantage.

In that they emphasize the relational nature of Chinese business, the foregoing studies are generally representative of the bulk of the literature. Wiley *et al* (2006),

however, claim the Chinese case is not unique. After reviewing theories on the impact of network relationships and conducting a survey of international B2B relationships in Swedish, German, and Chinese companies, they found no evidence to support the belief that Chinese firms are fundamentally different from European firms with regard to initiation of relationships, which relationships are important and why, and the nature of affect in important relationships.

Further support for the non-uniqueness counterclaim comes from Björkmann and Kock (1995), whose survey showed that both Chinese and non-Chinese respondents reported social relationships as important in the marketing of goods and projects – relationship networks generally function as information and business exchange facilities.

Su *et al* (2008) found that SC relationship quality (“SCRQ”) can influence cooperative strategy. Survey data from Chinese manufacturers showed that SCRQ can be considered a construct of communication, cooperation, trust, adaptation, and atmosphere; SCRQ also impacts significantly on the longevity, frequency, and diversity of relationships.

Relationship quality was explored by Song *et al* (2012), whose survey of manufacturing firms in China found that the business relationship function impacts indirectly on buyer performance via the mediating effect of relationship quality. The business relationship function influences relationship quality more than buyer performance; a high level of availability of alternative suppliers weakens the influence of the business relationship function on relationship quality. This finding introduces conditionality into the business-by-guanxi and relationship notions: when suppliers are plentiful, relational factors become *less* determinative.

In 2005, Wong *et al* investigated supplier-buyer dyads in Xian (China) to measure the long-term orientation of their relationships: when mutual commitment to quality improvement exists among supplier and customer, the partnership becomes strategically effective and cooperative interdependence is developed.

Studies such as the foregoing investigated the role of SC relationships in the context of Chinese-to-Chinese SCs and found that relationship quality and trust were strong influencers of SC performance.

For comparative purposes, the study by Coote *et al* (2003) of trust in the context of Chinese marketing is informative. Findings showed that relational commitment relates to trust (defined as “integrity and reliability”), communication quality, conflict, and similarity (social, ethnic, economic). By analysing 150 marketing relationships among overseas Chinese firms, support for trust, communication quality, conflict, and similarity was found – factors that these authors consider to be predictors of relationship commitment. They also note that ethnic similarity between interacting parties is likely an influencing factor. The study supports theories such as transaction cost economics that claim that trust, although a term with multiple interpretations (Williamson, 1975) is key to successful cooperative endeavours (Arrow, 1972), relational exchange, and reduced transaction risk.

Such studies prompt a logical supposition: the relational and informal (i.e. trust-based) management methods that are characteristic of Chinese business are discernible and active in China SC activity; hence, China SCM involves intangible but irreducible human interaction factors that facilitate the growth of the positive supplier relationships that, when mature, return the advantages of SCM.

### **2.3.3 Trust**

To Buttery and Wong (1999), *guanxi* is Chinese relationship- and trust-building. Favour and face represent key attributes of business interaction, and, through trust-building *guanxi*, outsiders evolve into insiders, who become business partners. A systematic review of “*guanxi*” in the business literature by Wilkinson (2011) showed that the discourse reports a distinct *guanxi* process: outsiders becomes insiders via trust-building interaction; when insider status is obtained, mutualism is assured, resources can then be exchanged and business advantages result.

Wang (2005) asserts that China is a low trust society; hence, trust is the key component of *guanxi*, which is particularistic trust in the Chinese context.

Introductions (via intermediaries) permit participation in networks, through which transactions can be enacted and resources exchanged. *Guanxi*-tied individuals are

expected to show mutual empathy. Guanxi trust involves bilateral confidence in the ability and willingness of a party to carry out expected behaviours in the appropriate manner. Exchange requires reciprocity, and trust can be extended by introduction from third-parties (intermediaries). The rules of *renqing* (which Wang interprets as “reciprocity” and “empathy” – see *Chinese Terms* in the Appendix) facilitate long-term relationships and commitment.

Ramasamy *et al* (2006) found that trust and communication are the main channels of knowledge transfer. Inter-organisational rules, if formal, *impede* resource allocation between firms and *incentivise opportunistic behaviour*. Trust and communication (i.e. a functioning guanxi relationship) are necessary for knowledge transfer and must exist *before* effective knowledge transfer can occur.

Kriz and Keating (2010), in a concept paper that advocates business-by-guanxi, recommend foreign managers attempt to emulate the trust that is a central, albeit undertheorised, fundamental of Chinese business. Trust in Chinese business exchange is culturally encoded in the concept of *xinren* or “deep trust” (see *Chinese Terms* in the Appendix), which is achieved through reciprocal behaviour and emotional bonding. Such behaviours precede trust-based transactions. Once developed, trust generates guanxi networks whose power can be harnessed for the purpose of resource and information exchange.

Several studies on trust in Chinese business confirm the assertion by earlier researchers (e.g. Guthrie, 1998) that guanxi is in retreat as formal institutions improve. Tan *et al*'s (2009) argument is representative: guanxi is fading as market system trust, supported by increasingly potent institutions, improves. Increase in system trust is also reforming Chinese management style, which increasingly reflects market economics and closer incorporation of the customer (findings that correlate with Braunscheidel and Suresh, 2009, and Zhai *et al*, 2013).

Chua *et al* (2009) found that trust and network size/guanxi-connectedness correspond. For Chinese managers, a relationship's *embeddedness in third-party ties increases his/her trustworthiness* – a finding that supports the studies that recommend the use of intermediaries. Concepts and practices of trust, although

important to both Chinese and Western managers, differ in cultural *expression*. In Chinese scenarios, personal relationships influence business decisions significantly, to an extent that Westerners may perceive cronyism and underhandedness in Chinese business practices. In China, well-connected people are perceived as trustworthy and reliable, and transactional relationships are usually suboptimal.

#### **2.3.4 Guanxi**

The paper by Lee and Humphreys (2007) offers the earliest instance of specific discussion of guanxi in relation to supply. These researchers surveyed Hong Kong-based electronics companies to assess the impact of guanxi on three aspects of SC management: strategic purchasing, outsourcing, and supplier capability development. Responses indicated strongly that guanxi exerts significant influence on all three. The authors conclude that guanxi proficiency is a valuable asset for Chinese supply managers.

Cheng *et al* (2012) investigated the impact of guanxi on supply risk, exploring supplier management through the relational approach that, according to influential earlier papers (such as Xin and Pearce, 1996), characterises the Chinese business environment. When supply risk exists, suppliers utilise their guanxi networks to achieve continuity: purchasing firms leverage guanxi networks with key suppliers; through guanxi development, community business interests improve, and these in turn enhance performance. Supply risk in the Chinese context can thus be considered moderated by guanxi. These two studies typify what can be labelled the “business-by-guanxi” recommendation.

Developing the premise that Chinese business is relational and that guanxi can be defined as “connections” (Xin and Pearce, 1996); “networking” in the sense of Chinese business is the pursuit or utilisation of guanxi for business gain.

Jansson *et al* (2007) claimed networked firms operate as “institutionalised actors”. Chinese business networks exhibit high patience and long-term orientation, but often feature weak, unpredictable, and opaque institutions. Western businesses are expected to make deep investments in Chinese business networks and demonstrate



strong commitment *before* obtaining acceptance as valid partners. Trust is earned through demonstrations of commitment.

Ren *et al* (2010) maintain that guanxi-like relationships develop business-essential interpersonal trust. As tools of control and performance guarantee, explicit contracts are redundant in China, which is a low-trust, collectivist society, i.e. a culture in which high trust is extended to in-group members, but very low trust extended to out-group members. Nonetheless, weaker partners in asymmetrical relationships can benefit from formal contracts. Trust between retailers and suppliers can reduce conflict and improve performance. Trust is crucial to exchange relationships (as observed by transaction cost theorists such as Arrow, 1972); and in China, trust and guanxi associate strongly.

However, a survey of Chinese buyer-supplier dyads by Liu *et al* (2008) challenges this deduction: while relationship length and solidarity reduces buyers' perception of relational risk, guanxi can weaken buyers' trust in suppliers' competence. The implications of this are counterintuitive: guanxi does not necessarily predict trust in competence.

Extending Granovetter's embeddedness theory (1985), Su *et al* (2009) argue that performance of companies in emerging markets is strongly influenced by economic and sociocultural factors. Foreign companies operating in such environments require strategies that concentrate on interpersonal influence. Interpersonal influence in the case of China is embodied in the concept of guanxi. As argued by other authors (e.g. Gu *et al*, 2008; Arribas *et al*, 2013), guanxi is the Chinese equivalent of social capital. Guanxi-oriented companies show high levels of dependence, have boundary spanners that represent and utilise social capital, and organise on the basis of cultural values. Guanxi-oriented companies encourage personnel to build trust and exploit their personal resources for business advantage.

Barnes *et al* (2011) found empirical support for the importance of guanxi in the Chinese supply business. These researchers disaggregate guanxi into three dimensions: *ganqing* (feeling), *renqing* (emotion), and *xinren* (trust), all of which, they posit, are influential in cooperation and coordination, lead to improved supplier

performance, and must be adopted by Western companies working with Chinese suppliers (see *Chinese Terms* in the Appendix).

Sternquist and Wang (2010) disagree. They detail the various penalties of guanxi and rebut the oft-heard advice that international business people in China should develop business guanxi. They allege that guanxi is increasingly regarded pejoratively – retailers, for example, often forbid buyers to build guanxi with suppliers.

The dark side of guanxi includes excessive mutual obligation and group blindness. Relationships between buyers and salespeople can foster corruption via gift giving and other informal practices. Firms with central buying systems, such as state-owned enterprises (SOEs), are more likely to have buying committees, which reduce the influence of guanxi on purchasing decisions. By broadened implication, this study confirms the claims by other researchers (e.g. Guthrie, 1998; Anderson and Lee, 2008) that preference for non-guanxi business dealings is increasing as the efficacy of formal institutions improves.

The study by Cai *et al* (2010) is supply-relevant and similarly confounding: guanxi is only one in a trinity of China's institutional environment features influencing the integration of trust and information flow between suppliers and buyers, the others being legal protection and formal government control.

#### *2.3.4.1 Guanxi: Advantages and Disadvantages*

A 1995 study by Davies *et al* reported that Hong Kong and Western executives both perceive guanxi creation and maintenance as essential for business in the Chinese market. Westerners reported that the real decision maker is often elusive – an observation possibly explicable by the tendency of Chinese business to operate collectively. Westerners must establish their own guanxi networks, and transcend transactional methods in order to cultivate personal relationships with facilitating individuals.

A conceptual paper by Standifird and Marshall (2000) describes several transaction cost advantages of business-by-guanxi and makes a highly conditional (and somewhat convoluted) recommendation: where guanxi networks are well-developed,

guanxi-facilitated transactions are advantageous to the degree that the incorporation of guanxi-based *and* market-based exchange mechanisms should be adopted. Ambler and Styles (2000) argue that guanxi should be regarded not as a business enabler in its own right, but as a *conduit* through which information and Keynesian “animal spirits” can flow.

Su and Littlefield (2001) distinguish between forms of guanxi, finding two: favour-seeking, which is culturally embedded, and rent-seeking, which is institutionally-derived. They identify three distinct benefits for business: guanxi provides information on market trends, policies, regulations, and opportunities; guanxi enables access to resources (transportation, bureaucracy bypassing etc.); and guanxi smoothens transactions and establishes trustworthiness.

Defining guanxi as “a process of social interactions”, Fan (2002b), contends that the presence of a “guanxi base” (special relationship) does not necessarily entail production of guanxi. The author makes five assertions: 1. the advantages of guanxi are tactical (i.e. short-term) rather than strategic; 2. guanxi alone cannot provide sustained competitive advantage (the same is argued by many researchers); 3. guanxi between business people and government are intrinsically ethically problematic; 4. guanxi impacts on the wider public so should be evaluated in the context of *all* stakeholders (direct and indirect); and 5. guanxi is waning as China’s formal structures improve and its markets open (this was the deduction of Guthrie and others).

Luo’s conceptual paper (2008) argues that the intertwinement of guanxi and corruption over the last 30 years has impacted negatively on business performance, culture, and practice. Guanxi takes two forms: weak and strong (see *Chinese Terms* in the Appendix). Between these are webs-of-friendship guanxi (see *Chinese Terms* in the Appendix), which can include distant relatives and acquaintances. In Chinese tradition, kinship-based social bonds and cliquism are well-established relationship norms (also observed by Limlingan, 1986, in relation to overseas Chinese economic cliques). Face and reciprocation bind such relationships.

Warren *et al* (2004) describe guanxi as the “double-edged sword” of “social exchange”. Two studies of Chinese business people showed that guanxi is both advantageous and disadvantageous for key persons and groups, but not equally so, depending on the context. Guanxi ties have a “wrong side” and a “right side”. They conclude that guanxi both benefits and harms Chinese society.

Chen and Chen (2009) critically analysed close guanxi and found that favour exchanges benefit guanxi partners but create significant negative externalities for non-guanxi parties (outgroup members) and organisations as a whole. “Relationalist” values can worsen negative externalities, but individual and institutional factors can reduce them. Yi and Ellis (2000) also examined the insider/outsider implications of business guanxi - their survey revealed business-by-guanxi yields three times more benefits than losses.

Nie *et al* (2011) found that a distinctly negative side of guanxi exists: obligations and commitments prevent optimal decision making in business processes.

#### *2.3.4.2 Guanxi: Evolution and Decline*

According to Wank (1996), China’s post-Mao market economy is characterised by inefficiency and statist involvement. Property rights and legal structures function alongside social institutions such as trust and morality. Business people pursue advantage through networks rather than company strategies. Collectivism and tactics are major features of guanxi.

Guthrie’s heavily cited conceptual paper (1998) proposes a notion that evidence from later studies supports: guanxi is *declining* as China’s economy transitions toward a free market and its institutions improve. Guthrie notes that managers in China do not view Chinese networking as significantly different from networking elsewhere (claims supported by Puffer *et al*, 2010 and Smith *et al*, 2012). Guthrie concedes that guanxi and gift-giving remain significant, but are not majorly performance-determinative.

Guthrie sees guanxi as dynamic, its power and utility changing in response to external developments. At the time of its writing, the paper interrupted the consensus of the literature, which held that guanxi is a rigid trait of Chinese life that will obstruct

economic development and complicate the venturing of MNEs. Guthrie claims this describes the pre-reform era, but is less true in the present urban-industrial era. Hitherto, the literature documented the presence and complexities of guanxi deeply, but nuanced discussion of guanxi practice was scarce – cultural emulation and business-by-guanxi recommendations appear to have proliferated largely unchallenged.

Fan (2002a) states that although guanxi can benefit individuals and organisations, such benefits are often obtained at the expense of other (i.e. outgroup) individuals and organisations. As an institution, guanxi, impacts the wider public, usually negatively. Guanxi remains an indispensable necessity of business, but its power is declining as China strengthens its market system and institutional infrastructure.

The guanxi-in-decline argument has dissenters. Yang (2002) proposes that decline advocates perceive guanxi incorrectly – i.e. as static and fading as China introduces legal and commercial change. According to Yang, guanxi is evolving in response to changes in social institutions and globalisation – an assertion supported by Michailova and Worm's 2003 study of Russian *blat*. (Interestingly, given the methodological stance of this research, Yang argues that positivist methodologies are uninformative in the study of guanxi.)

Dunning and Kim (2007) attribute guanxi to Confucianism, particularly the Confucian emphases on human interdependence and properness in social conduct. Few studies situate guanxi theoretically, but their literature review reveals six traits: guanxi is utilitarian, reciprocal, transferable, personal, long-term, and intangible. Collectivism strengthens guanxi: collectivist societies are inclined to create and remain bound by guanxi-like institutions. For these authors, Hofstede's "power-distance" is another source of reinforcement – Chinese society is characterised by high power-distance relationships. In developing economies, informal modes of regulation act as an effective alternative to weak formal institutions (a claim made emphatically by Xin and Pearce, 1996).

The Chinese business environment is characterised by inconsistently applied regulations and weak formal power (contracts etc.) – an assertion made by many other researchers.

Anderson and Lee (2008) investigated how guanxi is evolving in the era of globalisation. China's Confucian heritage influences Chinese organisational values, practices, and working behaviour. Hong Kong and mainland Chinese respondents reported guanxi as still important, but no longer solely determinative of business success. Hong Kong Chinese expressed dislike for business through guanxi. Supporting Guthrie's guanxi-decline assertion, both groups reported guanxi decline as a force of regulatory control, it being gradually displaced by market environment improvements. These authors conclude that guanxi today operates *in conjunction with market forces and formal regulations*.

Also supporting the decline argument, Mackinnon (2008) claims that the traditional values (typified in the business-by-guanxi tendencies) of Chinese managers are declining, as is Hofstede's "power-distance" characterisation of the Chinese. Methods of countering competitive challenges in Chinese business should emphasise flexibility, dynamism, and heterogeneity. A "transvergence" toward Western management systems and strategy is occurring: competitive advantage in the Chinese scenario is no longer contingent on relationships alone; management according to Western strategic thinking *in addition to* existing relationship protocols is required.

Trimarchi *et al* (2010) showed that the dealings of mainland Chinese with Western buyers are Confucian in practice but *short-term* in orientation (unexpectedly perhaps, considering the common assertion that long-term orientation typifies Chinese preference). As Chinese businesses globalise, guanxi appears to be evolving from traditional, social, and personal trust into a guanxi-inflected transactional hybrid. A tangential implication of this study is that business interaction between Chinese differs in some vital ways from interaction between Chinese and foreigners (see next section).

Interviews by Nolan (2011) revealed that Western managers are contributing to Chinese companies' adoption of international business norms. However, some foreign managers adjust significantly for Chinese conditions, i.e. practice business-by-guanxi. Western managers perceive guanxi as decreasing in significance due to China's growing more market oriented.

### **2.3.5 Social Capital**

Findings by Szeto *et al* (2006) indicated that social capital development and inter-organisational relationships constitute vital business assets. These researchers recommend that foreign MNEs delegate responsibility for China-side operations across multiple managers, and define a "China team leader" to act as key contact for Chinese business associates.

A conceptual paper by Yang and Wang (2011) identified three separable, business-relevant dimensions of guanxi: 1. guanxi balances three elements – *qing* (emotions or feelings), *li* (reciprocation), and *liyi* (instrumental benefits); 2. guanxi represents dynamic relationships between individuals and organisations; 3. guanxi is the irreducible root of the Chinese concepts of networking (*quanzi*) and social capital. (See *Chinese Terms* in the Appendix for details about each term.)

According to Wang *et al* (2014), "boundary spanners" (of the sort defined by Wenger, 1998) are a major resource of interpersonal influence and in-channel communication. In collectivist societies, personal ties (guanxi) enable the solidification of embedded inter-firm networks and relationship-specific investment (RSI), which is inter-organisational but occurs through interpersonal means. MNEs operating in the Chinese market must adopt local business culture by extending inter-organisational relationships beyond transactions and contracts, i.e. conduct business-by-guanxi.

### **2.3.6 Supply**

Millington *et al* (2006) reported that many Western MNCs express the desire to localise supply inside China, but inadequate information and deficient knowledge complicates supplier selection. They advise foreign MNCs to exploit market channels in conjunction with guanxi networks to acquire knowledge about supplier viability. Interfirm information exchange is based on relational contracting, which is based on

long-term supply relationships – not guanxi alone. Guanxi can, however, facilitate information exchange with competitors or OEMs. Foreshadowing the claim by Berman and Swani (2010) that management of China risk begins with MNEs assuming responsibility for selection of appropriate suppliers, Millington *et al* recommend use of guanxi in supplier identification and recruitment of local managers or China-experienced ex-patriate managers who possess option-generating guanxi. *Such managers are a valuable China supply-risk moderator.*

Leung *et al* (2005) claim that two uniquely Chinese cultural variables – guanxi and *xinyong* (trust) – feature alongside competence, commitment, conflict management, and satisfaction as influencers of the relationship between Chinese and Western partner firms. Western firms create *xinyong* (see *Chinese Terms* in the Appendix) with Chinese buyers by demonstrating product knowledge and conflict resolution through adaptation. For foreign companies, competence is prerequisite to generating trust; guanxi cannot replace competency.

Shin *et al* (2007) found three cultural factors – “Confucian dynamism”, guanxi, and collectivism to influence information sharing. Guanxi impacts more strongly on in-group sharing than on out-group sharing – a result that is predictable according to social network theory (according to Burt, 1992 and Granovetter, 1973, ties function as conduits of information and other resources). Guanxi can facilitate boundary spanning and, thereby, enhance crossflow of information and resources. In a SC scenario, guanxi-connected individuals are more likely to share information when, for example, a manager has found a way to reduce costs. Such information can be shared with guanxi ties working in upstream and downstream organisations.

Sternquist and Chen (2006) revealed that buyers’ decisions are influenced by performance, price, trade assistance, and the supplier-buyer relationship (guanxi). Foreign producers lack guanxi and therefore lack knowledge about the internal operations of China’s retail chains. Product selection decisions are not fully understood by foreign entrants. This observation implies that in the area of selling to Chinese retailers, knowledge and guanxi are synonymous, hence lack of either constitutes a specific liability of foreignness.



According to Jia and Rutherford (2010), Chinese-Western cultural differences can create SC risk. Cultural differences manifest as relational risk for Western buyers. Relational risk can, they argue, be mitigated by mutually beneficial partnerships. Importantly for SC risk theories, these authors declare a relational-cultural dimension, which they call “Supply Chain Relational Risk” (SCRR).

In their study of cultural adaptation in China-Western SC partnerships, Jia *et al* (2013) make a triple recommendation: success in China supply requires guanxi, cultural adaptation, and mutualism. Parties in SC relationships must harvest rents from spillover. Relationships attract spillover and grant access to resources beyond organisational boundaries (effectively “boundary spanning” in the sense proposed by Tushman, 1977). Cross-organisational learning is also relationship-enabled.

A study of collaboration in the Taiwanese shoe industry (Lee and Koh, 2009) revealed a tripartite collaborative strategy between OEM supplier, machinery manufacturer, and end-user (branding party). The end-user and machinery maker have no direct interaction, but the flow of material between the two ties them closely. This investment ensures that flow between OEM and end-user, and flow between OEM and machinery maker remain efficient. This study shows that, in this context, cross-investment, more than guanxi, facilitates collaboration.

Research by Kong (2011) into key suppliers and customers in China showed that companies with low social capital (low guanxi connectedness and low trust among workers) are more vulnerable to government intervention. Supporting Xin and Pearce (1996), Kong’s study demonstrates that network involvement (guanxi) lowers informational asymmetry, which reduces transaction costs. Social capital/network connectivity also lowers the impact of industry shock by functioning as a bonding/buffering mechanism. Implications: social networks provide protection against supply risk, namely by increasing proximity to government and cushioning firms against macroeconomic and business environment turbulence.

Case study analysis by Ranfagni and Guercini (2014) attribute Ferrero’s China growth to its practice of business-by-guanxi. Interdependence between foreign companies and local, indigenous companies is a fundamental contributor to China

success. The Ferrero case shows that relationships with local distributors featured symmetrical interdependence and high levels of inter-firm power. This is especially true of the primary distributor, upon whom Ferrero relies to increase brand awareness and create business relationships with other distributors. Thus, MNEs can achieve China brand presence and market penetration by forging mutually beneficial relationships with local partners.

#### *2.3.6.1 Global Sourcing and Outsourcing*

According to Kotabe *et al* (2008), outsourcing of components and finished goods to lower-cost producers on OEM-based contracts, although popular with US and Japanese companies, carries risks such as quality erosion and unpunctuality. Outsourcing can be advantageously exploited if modest; excessive outsourcing degrades performance.

Lau and Zhang (2006) revealed the economic factors that motivate China outsourcing by MNEs: efficient production, cost savings, and reduced capital investment. Strategic advantages were also identified: acceleration of re-engineering benefits, core competence concentration, flexibility enhancement, and improved prospects for eventual domestic market penetration. China outsourcing is however characterised by problems such as relative lack of proficient service providers, loss of control, immature transportation infrastructure, deficient IT connectivity, legal protectionism, and absence of general post-outsourcing evaluation.

Huang *et al* (2013) cite currency appreciation, rising labour and fuel prices, and declining VAT rebates as general cost pressures on multinational manufacturers operating in China, but Liu and Wang (1999) argued that China risk factors vary by region. Compared with inland China and surrounding Asian countries that also offer relatively low labour costs, coastal China offers risk-reducing benefits such as industry clusters and logistical advantages.

Research by Andersen *et al* (2009) indicates that outsourcing to China by SMEs can be challenging and offer only marginal competitiveness improvement. Relationships with and between Chinese suppliers enhance performance. Relationships with Chinese suppliers have four components: quality, coordination and role specification,

frequency and scope of communication, and trustworthiness. Culture is inadequate as explanatory of expectation-versus-performance discrepancy.

Closely mirroring Berman and Swani (2010), Olson and Wu (2011) emphasize the criticality of vendor selection: selecting vendors within the greater China area lowers SC risk due to lower costs and higher efficiencies. Local outsourcing within SCs moderates risk inside the Chinese SC. This proposition invokes Meredith-Smith's (1999) recommendation that local sourcing can support risk-reducing timeliness, and corresponds with findings by Ivarsson and Alvstam (2005) that indicate efficiencies occur when proximal Chinese suppliers interact. Olson and Wu (2011) proffer that *local sourcing within China is optimal*: national cost advantages are achieved, and the benefits of local supply reduce risk.

Qu and Brocklehurst (2003) showed that in the decision to outsource offshore, transaction costs are as important as production costs. China's increasing transaction costs have led foreign companies to outsource information technology work to India. Chinese competitiveness can, these authors contend, be increased by lowering transaction costs, many of which are government imposed.

A study by Lau (2003) demonstrated that outsourcing to China by companies within the Chinese culture-sphere is unlike outsourcing to China by companies outside the Sinosphere. Interviews with 22 Hong Kong clothing manufacturers revealed that the internationalisation processes of Hong Kong firms differs significantly from those of companies from advanced economies. Hong Kong multinationals emerged as a result of the outsourcing practices of multinationals. Many Hong Kong firms were thus exporting from inception and benefit from low "psychic distance" with mainland partners.

#### 2.3.6.2 Strategic Supply Management

Proceeding on the premise that corporations are defined by their purchases and partnerships with suppliers, and that sourcing is an increasingly critical factor in firm performance, Zeng (2000) presents China as a global sourcing case. Since sourcing markets are global, opportunities in China continue to evolve, and China's role as a global business actor is expanding. For the following reasons, Zeng describes China

as a “great supplier”: 1. China’s huge markets are attractive to makers of consumer products and suppliers of raw materials; 2. China is a major supplier of industrial and agricultural products; 3. China has the ability to attract investment due to its competitive labour and raw materials rates, and China’s foreign investment outranks other emerging economies; 4. China’s economic environment is stable; and 5. Joint-ventures and private international companies are preferred by China’s graduates, which develops the competitiveness of these companies. In sum, the business case for China as the global centre for outsourcing, procurement, and manufacturing is strong; population, potential markets, and favourable macroeconomic factors make China a priority candidate for FDI.

A study by Steinle and Schiele (2008) challenges the assertion that the continuation of global supply is inevitable. Their case studies revealed that, contrary to expectation, competitiveness is not necessarily improved by highly global sourcing – firms must become the preferred customers of their strategic suppliers. In addition, achievement of preferred customer status is simpler for firms that are located geographically close to suppliers, e.g. in the same region or national cluster. Foreign firms trying to access remote suppliers will struggle to achieve preferred customer status. Global sourcing decisions are thus influenced by clusters – possible and actual. Resources that enable sustained competitive advantage can be sourced outside the legal boundaries of the company (i.e. overseas).

Similar, earlier dissent comes from Meredith-Smith (1999), who showed that although internationalisation of business activities has accelerated improvement in communication, transport, and logistics, JIT and speed-related SC pressures are driving companies toward local supply.

A best-of-both-worlds scenario is proposed in a concept paper by Schiele (2006): technically proficient, highly specialised companies that are in geographical proximity to the buyer and enmeshed in a relationship of trust and frequent interaction are most likely to become the buyer’s core suppliers.

Cannon *et al* (2010) investigated international market contexts to test the notion that supplier-buyer relationships flourish when partners are long-term orientated, as per the literature’s consensus. Crucially for the present research, this study found that

cultural differences are important considerations in the development of purchasing strategies between parties from collectivist and individualist cultures.

After investigating the current and future role of purchasing and supply management as a strategic function within organisations, Zheng *et al* (2007) found that e-business, globalisation, and outsourcing mean that purchasing and supply are increasingly strategic. Also, “people effects” are of growing significance but skills gaps, particularly at senior management level, are evident. E-procurement and multifunctional/multicultural teams are commonplace, but increasingly integrated business processes, automation, and globalisation mean that although fewer purchasing and supply specialists are required, their decisions will be increasingly strategically significant, which, presumably, will impact on risk in terms of both SC performance and general competitiveness.

Sarkar and Mohapatra (2006) argue that a *rationalised* (i.e. reduced) SC/supplier base is critical to the creation of the strong supplier relationships/partnerships that engender SC effectiveness.

#### 2.3.6.2 Strategic SC Management

Li *et al* (2006b) tested the essential SCM premise, i.e. that competitive advantage and performance improvement are obtainable through effective SCM. The premise (probably first asserted by Drucker, 1962) is that SCs, not organisations, can be the determinative mechanisms of competitive advantage. The survey by Li *et al* revealed that high levels of SC integration and successful SC were supportive: SC management can indeed generate gains in competitive advantage and organisational performance.

With global supply however, comes risk, the basic forms of which were isolated by Wagner and Bode (2006) who revealed a set of key SCM characteristics – dependence on particular customers and suppliers, degree of single sourcing, and reliance on global supply sources – that are important determiners of a firm’s exposure.

The integration and mutuality principles of SCM suggest that China, where business is relational and traditionally cooperative and collectivist, should provide fertile ground for developing SCs and reaping their advantages. However, Handfield and Nichols (2004) discovered that non-Chinese organisations operating SCs in China struggle to create the necessary business relationships with Chinese suppliers. For MNEs, Chinese SC success involves fundamentally different challenges to achieving the same in Europe or the USA. Managers need frequent, personal travel in order to achieve direct contact with Chinese suppliers.

### **2.3.9 Logistics**

Meixell and Gargeya (2005) argue that despite global sourcing trends, few academic models present the problems of global SCs completely. Required is a SC model that is both forward-looking and practical in orientation. One of the aims of the present research is to partially address this absence by creating a China-specific model. On the evolution of Chinese logistics, Luk (1998) contends that distribution reform has reshaped channel structures in the Chinese market. The Chinese market requires international managers to adjust strategy and change operational systems in order to improve the provision of the value-added services desired by Chinese customers.

Jiang (2002) begins on the premise that foreign firms face multiple SC-related risks in China: underdeveloped infrastructure, expertise deficiencies, fragmented distribution and logistics, and local protectionism. To harvest returns from the cheap labour costs offered in China, companies are strengthening their SCs through three methods: use of non-Chinese 3PLs, use of local carriers, and preference for cluster-based suppliers.

Olson and Wu (2010) reviewed Chinese SC risk and identified the following specifically Chinese factors: floods and other natural disasters; malicious activity; government limitations on air pollution affecting factories and transportation in and around Beijing; the ability of Chinese companies to engage in cross-border collaboration following the financial crisis of 2008; the necessity of increasing flexibility, capability, and transparency.

The findings of a survey by Rahman and Wu (2011) showed that foreign customers prioritise different services than local Chinese companies: both foreign and Chinese companies appreciate logistics IT capabilities, but operational visibility is emphasised more heavily by foreign companies. For manufacturers outsourcing in China, providing logistics services to both local and foreign companies, organisational restructuring, and operational strategy adjustments are increasingly necessary undertakings.

### **2.3.10 Quality**

Wong *et al* (1999a) reported that quality improvement is achieved by suppliers and buyers creating a cooperative and competitive relationship. Such relationships produce trust and a long-term orientation that reduces quality risk. In a later study, Wong *et al* (1999b) observed that developing the long-term relationships that manufacturers recognise as contributory to product quality improvement can be challenging. Manufacturers and suppliers who share cooperative goals are able to communicate openly on quality issues – openness strengthens trust and reinforces the long-term orientation that creates quality-enhancing operations.

Somewhat contradictorily, Feng *et al* (2010) found that product quality, delivery reliability, and other supply performance indicators are unaffected by supplier involvement, which impacts significantly on cost leadership alone. Supplier involvement reduces costs, but *customer* involvement increases quality, reliability delivery, flexibility of processes, and customer services. Zhai *et al* (2013) and Braunscheidel and Suresh (2009) also stress the importance of including customers in the SC collaboration.

Salmi (2006) found that strong commitment by the Chinese partner can reduce and counter SC risks, including product quality issues. This author reports several important summative observations that correspond strongly with those of other researchers: a long-term, relational orientation characterises Chinese sourcing; supplier relationships solidify incrementally over time; the effectiveness of non-Chinese managers' interaction with Chinese suppliers is enhanced by cultural literacy, social skills, and an appreciation of Chinese culture. The utility of non-

cultural assets – SC skills and management tools – as means of reducing “psychic distance” was also noted.

Reflecting similar sentiment, Lyles *et al* (2008) proposed that relationships, trust, and cultural understanding constitute a triadic formula of risk moderation in China supply. Theorising and emphasising the role played by SCs in the recent recalls of Chinese-made products, these authors suggest that future research should investigate three aspects of “deep SCs”, i.e. SCs spanning long distances and incorporating a dozen or more organisations: visibility; trust – its creation and management; and depth – how it might be reduced and what types of product justify the complexity that characterizes deep SCs.

Several studies posit that Chinese supply risk is the product of China (supply-side) conditions *and* foreign buyer (demand-side) pressures: Jiang *et al* (2009), for example, claim that the main China-side factors are high staff turnover at suppliers, low productivity, and order failures; while buyer-side factors are frozen price demands, deadlines, flexibility, and lead time compression. Such pressures force suppliers to employ migrant labour, since it is relatively flexible/casual and inexpensive.

Berman and Swani (2010) cite product recalls and food scares that have highlighted issues in Chinese supplier quality, and attribute “quality fade” (a term coined by Midler, 2010, p.96) to upward cost pressures imposed by local conditions (labour and upstream supply), downward cost pressure from foreign buyers, and, in some instances, cynical opportunism by the supplier. For foreign companies, most China SC risks can be avoided by implementation of a robust safety/quality assurance strategy and careful supplier selection facilitated by China-based audit firms.

### **2.3.11 Intermediaries**

Liu and Wang (1999) recommend the trading office as a strategic intermediary between foreign buyer and Chinese supplier. Vedel and Ellegaard (2013) discovered that intermediaries reduce the hazards of global sourcing – to which novice buyers are particularly vulnerable. Pressey and Qiu (2007) concur: they demonstrated that in China, the involvement of third parties in business relationship dissolution is typical and usually beneficial.



### **2.3.12 Collaboration and Integration**

Core to SCM principles are a triad of concepts: 1. holistic management of entities within the SC (Oliver and Webber, 1982; Monczka *et al*, 1998); 2. active, mutualist collaboration and integration between all SC-connected entities (Forrester, 1958; Cooper *et al*, 1997); and 3. synchronisation of flow between SC entities for improved supply-demand balance (Stevens, 1989; Ellram, 1991). Through SCM, value is enabled by close interaction, information exchange, and cooperative problem resolution between SC members (Christopher, 1992; Cooper and Ellram, 1993). Several studies have observed collaboration and integration in the context of Chinese SC participants:

Li *et al* (2006a) demonstrated that information sharing – a key collaboration/integration SCM activity (Handfield and Nichols, 1999) – improves the stability and general performance of Chinese SCs.

Liu *et al* (2004) investigated business-to-business interaction between members of a Chinese SC and found that operations were enhanced by an internet-enabled system of information exchange. The system's success was due to strong management support, "deep cooperation", fair negotiation with both suppliers and retailers, open source hardware and software systems, and adaptability to suppliers' requirements.

Echoing the assertion that integration is critical to SC performance, Lockström *et al* (2010) identified the factors that enhance and inhibit integration between Chinese automotive SC members. Buyer-side leadership is important for the formation of supplier motivation, trust, relationship commitment, and a "collaborative mindset". If achieved, these facilitate supplier-buyer strategic alignment and enable suppliers to improve their collaborative capability and general SC performance.

Ivarsson and Alvstam (2005) demonstrated that dealing with remote suppliers incurs higher transaction and communication costs compared to local (cluster-based, coastal) suppliers. In China, local suppliers exploit their interaction with their foreign buyers more effectively than distant suppliers. This last observation lends credence

to the recommendation by Olson and Wu (2011) that local sourcing within China provides optimal SC advantages to internationally sourcing organisations.

### **2.3.13 Liabilities of Foreignness**

Liu and Wang (1999) showed that distribution channel management is critical to the success of foreign companies operating inside China. Overdependence on a single distributor incurs risk. Relationships, although important in Chinese business dealings, have to be initiated as formal business relationships – an assertion opposing the many studies that argue that Chinese business begins and continues informally. Overreliance on interpersonal relationships incurs unfavourable burdens, destructive alliances, and suboptimal outcomes. Management of conflict with Chinese organisations requires a learning process. Experience of conflict in other international scenarios can be helpful, but a template approach to China problem solving is not recommended. Applying practices used in other countries or even in different regions of China is also of limited utility: conflict resolution should be *ad hoc* and situation-specific.

Commonality of objectives is proposed by Li *et al* (2010b) as a key facilitator of Chinese supplier-foreign buyer activity: when foreign subsidiaries and local Chinese suppliers share common goals, the subsidiary obtains high levels of explicit and tacit knowledge. Lack of such knowledge represents a formidable liability. Access to the local suppliers' network through the partner supplier allows the foreign subsidiary to obtain higher levels of explicit – but not tacit – knowledge. Formal contracts can facilitate the acquisition of explicit knowledge and reinforce the effects of relational mechanisms on the acquisition of both tacit and explicit knowledge. For foreign subsidiaries in China, acquisition of local knowledge must occur through formal and informal methods. This dual approach recurs throughout the Chinese business literature (e.g. Yang *et al*, 2011, discussed later in this section). Risk management by collaboration is also a common recommendation (e.g. Hallikas *et al*, 2004).

### **2.3.14 UK Companies in China**

A study by Towers and Song (2010) showed that the greatest challenges facing UK garment companies sourcing in China are delivery risk, negotiation rigidity, language barriers, and Chinese business style and practices. Three out of these four are

human/cultural factors. Similar findings were obtained by Wilkinson *et al* (2005): UK-owned Chinese subsidiaries actively seek close cooperative relationships with their local suppliers, but significant human resource barriers impacted on partnership sourcing agreements. Staff recruitment and retention, cross-cultural communication issues, substandard working practices of suppliers, and corruption by key staff were identified as the main problems in partnership sourcing.

### **2.3.15 Ownership**

In the reform era, International Joint-Ventures (IJVs) were the only mode of China entry available to most MNEs. Since 2000, WOFE (Wholly-Owned Foreign Enterprise) status has become the preferred mode (Wilson and Brennan, 2003; Child, 2009). Ostensibly at least, IJVs – if by nothing more than definition – invoke collaboration and international/cross-cultural interaction, so should therefore embody the advantages espoused in SCM theory. However, Lee *et al* (1998) found discrepancies between majority ownership and dominant control in China IJVs – discrepancies possibly attributable to bilateral bargaining that is influenced by both contextual and resource-related variables. Chinese law grants the Chinese partner majority control (at least 60%), but product knowledge and marketing expertise provide the foreign partner with bargaining power in the ownership/control trade-off.

### **2.3.16 Informal Control is Insufficient**

A study of buyer-supplier exchanges in China by Zhou and Poppo (2010) indicated the following: 1. when managers believe the legal system can protect their company's interests, explicit contracts are preferred over relational safeguards for risky transactions; 2. when managers believe the legal system cannot protect the company's interests, relational reliability is preferred over explicit contracts.

A survey of Chinese manufacture-distributor dyads by Liu *et al* (2008a) showed that although relational mechanisms are powerful, performance improves most when both contracts *and* relational practices are used. Performance improvement is less significant when either is used in isolation.

Similarly, a survey by Li *et al* (2010a) of domestic and international buyer-supplier dyads showed that formal (contractual) and informal (social, interpersonal)

control influences risk in buyer-supplier relationships. In international relationships however, formal and social control operate in a complementary manner.

### **2.3.17 Ethnicity and Cross-Cultural Implications**

Alston (1989) showed that Japan and Korea have guanxi-like concepts. In Japan, *wa* (harmony) emphasises group and social cohesiveness; in Korea, *inhwa* is harmony based on hierarchy and obedience to authority; in China, guanxi codifies work and conduct according to interpersonal relations. Although each has differentiating nuances, all connote harmony through appropriate behaviour (see *Terms in Other Languages* in the Appendix).

Findings by Hui and Graen (1997) showed that Western leader member exchange theory (LMX) is of limited applicability in China. Guanxi – which, to these authors, constitutes the Chinese relational system – is framed in Confucian/feudal/family-oriented relationships. Research into China’s “international joint-ventures” (IJVs) shows that a bicultural approach to management is most beneficial. This observation foreshadows but conflicts somewhat with the “ambicultural” management style proposed by Chen and Miller (2011). Hui and Graen (1997) claim that if a company possesses sufficiently culturally proficient individuals on both sides, a third cultural approach is possible. Chinese networking is exclusivist and determinist: since only insiders receive respect and trust, only insiders can expect reciprocation of favour. A concept paper by Lovett *et al* (1999) argues that native systems are intrinsically better adapted to their host environments. Because guanxi developed under distinct socio-historical conditions, it is rooted in ethical protocols unlike those of Western systems. Many countries – most of the non-Western world – operate guanxi-like systems. These authors contend that the Chinese economy is moving toward “network capitalism” more than “market capitalism” in the Western sense. The eastern system should obtain the ability-seeking strength of Western recruitment; and Western systems could incorporate specific relational features – the best of the east should eventually merge with the best of the west.

Hung’s survey (2004) of multinational corporations (MNCs) in China revealed that several aspects of Chinese culture (family orientation, guanxi, and relational orientation) significantly influence the relationship cultivation strategies of MNCs.

Western MNCs also exert their own cultural values in relationship building practices, *and more strongly than Asian MNCs*. Western MNCs in China show awareness of Chinese culture and apply Chinese practices in *some* behaviours (e.g. socialising with local officials to cultivate favourable relationships). However, Western MNCs remain bottom-line oriented, and practice guanxi less than Chinese companies. On the other hand, Asian MNCs adapt better to the Chinese guanxi culture, perhaps not surprisingly, given Alston's observation (1989) about Japan and South Korea. However, like Western MNCs, Asian MNCs show resistance to influence by guanxi. Like Alston, Hung argues that concepts of guanxi, face, and favour are not uniquely Chinese – they are practised in the United States for example, and Goffman (2014) claims “face” issues (“face-work”) are universal. However, insider/outsider differentiation has greater emphasis in Chinese societies (Leung and Bond, 1984).

A survey of Chinese senior executives by Jiang *et al* (2011) showed that ethnicity is an important factor influencing trust between Chinese business people. Senior executives are more trusting of overseas partners who belong to the same ethnicity. This prompts the question – could the term “guanxi” be a culturalized euphemism for ethnic-commonality bias? Appointing a manager who is ethnically similar to the executive who is managing the Chinese partner maybe a rational application of this observation.

Intermediary guanxi is underutilised by foreign firms in China (Li and Wright, 2000). Expatriate managers are typically rotated, so valuable guanxi fade with repatriation. Enduring inter-firm guanxi can be created by use of a continuously present third-party/intermediary. The social and professional status of the intermediary influences the quality of the relationship that can be achieved.

Tung and Worm (2001) attribute the weak performance of European companies in China to their inability to develop the requisite business-facilitating guanxi with officials. European MNEs acknowledge the importance of China but note that preference for non-Chinese managers lacking guanxi connectedness is likely a limiting factor. Use of well-connected intermediaries can compensate for this, but few managers of European MNEs harness such means.

Guanxi, trust, and social dependence play key roles in creating and maintaining robust channel relationships in Chinese markets, where collectivist values, high levels of government involvement, and weak legal frameworks dominate (Jia and Wang, 2013). Guanxi with government officials can improve general firm performance, and inter-firm guanxi can offset the deficiencies of underdeveloped legal structures (as claimed by Xin and Pearce, 1996). Foreign companies operating in China require cross-cultural guanxi networks. These are particularly necessary for foreign partners from culturally distant nations. Foreign companies must recognise that guanxi and its associated concepts (see *Chinese Terms* in the Appendix) are powerful social mechanisms that reward adopters. Foreigners who comprehend and apply these mechanisms can operate successfully within networks and thereby access the resources and markets available to Chinese business people.

Pearce and Robinson (2000) exhort foreign companies to devise and operationalise China-relevant strategies – especially guanxi-based network strategies – as a rational response to the increasingly competitive Chinese business environment. They reason that emulation of Chinese patterns is necessary, since Chinese and Western business practices feature striking differences: Chinese business venturing is fraught with risk that stems from cultural practices and in-group preferences. Lack of understanding of those preferences creates risk and is the main impediment to China success. Guanxi creation requires sizeable investments in time and energy, but such investments ultimately pay dividends.

Lee *et al* (2001) discovered that uncertainty in decision-making and perception of similarity affect guanxi positively, while perceived opportunism affects guanxi negatively. They concluded that guanxi can influence firm performance positively, and guanxi is mediated by relationship quality and interdependence. Echoing Pearce and Robinson (2000) and Huang (2000), they also recommend guanxi practices to foreign firms attempting to acquire resources and reduce risk. Relationships between Western and Chinese firms require nurturing, and Chinese partners are likely to reciprocate investments in time and effort.

Luo *et al* (2002) suggested a more nuanced, syncretic approach: MNCs operating in China should apply a *combination of contracts and guanxi* to offset their liabilities of

foreignness. Their study revealed that Chinese companies acquire local business contacts and practice guanxi networking as an offensive mechanism against foreign MNCs attempting to enter Chinese markets. Guanxi lowers liabilities by enhancing indigenous capability, organisational legitimacy, and cooperation with local businesses. For foreign firms, *contracts in conjunction with guanxi* can offset liabilities – contracts safeguard against operational uncertainty and coordination cost escalation, and protect resource investments. These observations refute guanxi as *the sole enabler* of Chinese business.

The possibility that guanxi can be adopted and applied by non-Chinese is suggested in Hutchings and Weir's (2006) comparison of networking in China and the Arab World. Despite globalisation, both guanxi and *wasta* (the Arab near-equivalent of guanxi) remain potent in their native environments. Both *wasta* and guanxi emphasise insider preference and third-party introductions (i.e. intermediaries), and both feature ethical complexity. Unlike *wasta*, guanxi is adapting to globalisation – guanxi can be practiced by foreigners and extended overseas. Guanxi with local officials remains essential for business, but technically or organisationally superior Chinese firms are far less guanxi-dependent. In the Arab world however, there appears to be no substitute for *wasta*.

Puffer *et al* (2010) also demonstrated that guanxi-like institutions exist in other emerging countries. Both Russia and China are unlikely to experience a complete switchover to formal institutions, the informal institutions of both (*blat* or *svyazi* in Russia; guanxi in China) are too socially embedded and effective as countermeasures of formal institutional weakness (as argued by Xin and Pearce, 1996).

### **2.3.19 Government**

According to Xin and Pearce (1996), business-by-guanxi counteracts institutional weaknesses, particularly China's underdeveloped legal environment. Executives at privately owned companies are more guanxi-dependent than executives at state-owned or hybrid companies. The Chinese business and economic environment is largely informal, hence managers of private businesses depend on government guanxi for resources and performance.

Findings from a survey of Chinese firms by Park and Luo (2001) showed that institutional, strategic, and organisational factors are critical elements of guanxi and competitive force. Use of guanxi enhances firm performance, but the effect is not general: guanxi increases sales, but impacts negligibly on profit growth. Guanxi's greatest benefit is its ability to expand markets and achieve competitive positioning. However, guanxi does not correlate with internal operations efficiency.

Buckley *et al* (2006) propose that foreign investors practice guanxi and *mianzi* (face) to develop stakeholder trust. They argue that understanding China requires familiarity with the concepts of guanxi and *mianzi* (see *Chinese Terms* in the Appendix), which although by no means uniquely Chinese (cf. Goffman, 2014), are interpretable as powerful interpersonal phenomena and descriptive of the relationships between firms and government. Government support and common vision is obtained when trust exists between key stakeholders; trust is achieved through long-term interaction with key people, particularly officials.

Luo *et al* (2011) demonstrated that business and government guanxi are determinative of the economic and operational performance of firms in China. Business guanxi improve operational performance; government guanxi improve economic performance. In state-owned organisations, government guanxi are more important. The importance of government guanxi is however declining as institutions improve.

Sheng *et al* (2011) concur: business ties have a stronger positive effect on firm performance than political ties, but the effects of both forms of tie are contingent on market and institutional conditions. Business ties are superior when laws are inadequately enforced and technological change is swift; political ties are superior when official support for business is lacking and technological turbulence is low. Businesses seeking sustained advantage must utilise both forms, applying each when appropriate.

## **2.4 Definitions Used in this Research**

This research employs the following operative definitions, since they are representative of the literature and sufficiently broad to incorporate more specific definitions:



*Risk*: “chance or danger of damage, loss, injury, or any other undesired consequences” (Harland *et al*, 2003, p.52).

*Supply chains*: “dynamic networks of interconnected firms and industries” (Christopher and Peck, 2004, p.1).

*Supply chain management*: “management of a network of organisations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer” (Christopher, 1992, p. 15).

*Supply chain risk management* is “to, collaboratively with partners in a supply chain apply risk management process tools to deal with risks and uncertainties caused by, or impacting on, logistics related activities or resources” Norrman and Lindrith’s (2002, p.7).

The next chapter details the methodology used in this research.



### **3. Methodology**

This chapter describes and justifies the research methodology applied in this research. The methods of data collection, analysis, and presentation are also discussed.

#### **3.1 Research Methodology**

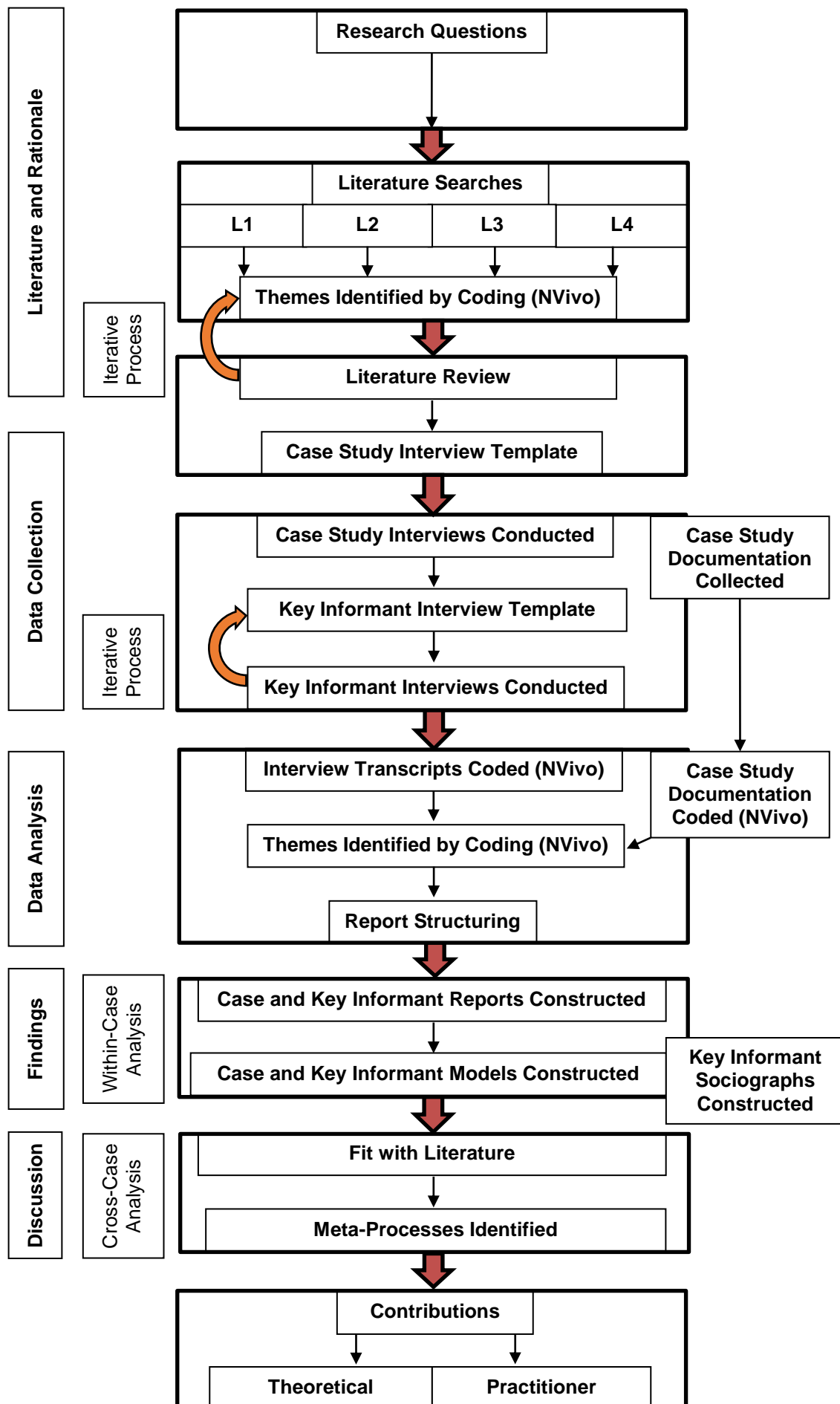
This research employed the case study methodology to acquire two forms of primary data:

1. Eight focal (manager) in-depth, semi-structured interviews. Interview transcripts were analysed, and then presented as case studies (the protocols of collection, analysis, and presentation are discussed later);
2. Eight supplementary (key informant/expert) interviews. The transcripts of these interviews were analysed and then presented as referential substance. The findings of the focal material (case studies) were compared for convergence and divergence against the pertinent opinion of purposefully selected experts.

Both focal and supplementary data were analysed in light of the theory and empirical findings that emerged in the literature review.

Figure 8 depicts the fundamental steps of the methodology applied in this research.

Figure 8 Methodology Outline



### 3.1.1 Research Questions

The following research questions guided this research:

1. *In the context of China supply chain management and its associated risks, what is the nature of the relationship between supplier and buyer?*
2. *How do non-Chinese companies manage Chinese suppliers to minimize risk?*

To answer these questions, deep insight into the influence of relationships on risk in Chinese supply management was required. For this reason, a qualitative case study method was adopted. In alignment with major theorists of the case study method (such as Stake and Yin), this researcher believes that qualitative methods are better suited to answering questions of “how?” than quantitative methods.

### 3.1.2 Qualitative Research and Case Studies in Logistics and SCM

In the fields of logistics and SCM, case studies *as pedagogic tools* are well endorsed (e.g. Stock and Lambert, 2001; Chopra and Meindl, 2010). However, according to Flynn *et al* (1992) and Hamel *et al* (1993), case studies *as a research method* are underutilized in business studies *generally*; according to Ellram (1996) and Mentzer and Kahn (1995), case studies are especially underutilised in purchasing and logistics research, although a handful of studies have used the case study method in materials management research (Ellram, 1996). The dates of these claims are worth noting. The systematic literature searches that revealed the dominant currents on which the present project is carried show that post-2000, numerous heavily cited supply-related research articles have employed a *qualitative* case study methodology.

The early absence of case study research in logistics and SCM is possibly attributable to the misconception that case studies are *necessarily* qualitative. Although the *typical* case study emphasises qualitative, in-depth investigation of one or a handful of cases (Larsson, 1993), case studies *can* gather quantitative data. This complexity might explain the philosophical ambiguity surrounding case study research. Major proponents of the method (e.g. Stake and Yin) have diverging philosophical assumptions that, to philosophical purists, strain the method’s validity.

Rarely disputed however is the method's utility in diverse contexts and its exploratory potential for a broad span of research questions (Farquhar, 2012).

The notion that the typical supply chain is a series of vertically integrated, linear processes punctuated by definite points is a quantitatively biased model. That each node is isolable and discreet yet elemental to an integrated whole is simplistic, if not notionally contradictory, but reflects a *positivist* assumption – complex systems are best understood through systematic isolation and observation of interacting elements. In the case of a network whose nodes are managed by independently motivated humans, reduction to the level of variable for the purposes of prediction and quantification is precarious, and theory generated thereby of limited or questionable value. Positivist/quantitative research models attempt to describe, explain, predict, and understand SC risk management activities as they are practised, but qualitative methods such as in-depth interviews and case studies can explain how human factors influence risk.

The issue of human relationships as influencers of risk in international supply chains is relatively undertheorised. The use of case study methods to research human-centred phenomena such as cultural differences and social relationships has strong precedence. Two examples of direct relevance to this research are Yang (2002): a positivist methodology is inappropriate for the study of *guanxi*, which is intrinsically social and not easily confined to isolable variables; and the qualitative work of Brand and Slater (2003) that revealed the ethical issues confronting foreign managers in China.

Hence, an exploratory method that enables obtainment of a complex, qualitative depiction of a number of informative business instances was desirable. For research into relatively unexplored social phenomena, qualitative methods are apt: they provide depth and insight and demand relatively little pre-theorisation, giving the researcher freedom to probe how and why questions (Bonoma, 1985), and to create Kantian idiographic knowledge (Hoaglin *et al*, 1982; Larsson, 1993), which reveals insight into *subjective* processes and for that reason is favoured by many social researchers. This research seeks ideographic knowledge because the phenomena of interest are a particular mode of culturally influenced human interaction and how that interaction influences risk in a specific business activity.

Data derived from interviews with individuals *must* entail some degree of subjectivity, and this research has two dimensions that make it *social*: it examines business *interaction* (a social phenomenon) in the context of a particular *culture*. Thus, required was a qualitative data-generative method and general approach that is extractive of deep, rich information concerning a relatively novel aspect of supply management, namely the impact of relations on risk in Chinese supply.

For these reasons, and for philosophical compatibility, this research employed the case study method, which comprised collection by in-depth interviews and analysis by literature-informed thematic coding of interview transcript analysis – both operationalized under the interpretivist/phenomenological paradigm. This research, in approach, application, analysis, and outcomes remains paradigm-conformist; that is, no attempt at triangulation by quantitative methods was undertaken.

### **3.1.3 Case Studies as Research Method**

There are multiple definitions of case study (Swanborn, 2010). Gragg (1954, p.10) provides an appropriate, albeit early definition: “a record of a business issue which actually has been faced by business executives, together with surrounding facts, opinions, and prejudices upon which executive decisions had to depend. These real and particularised cases are presented to students for considered analysis, open discussion, and final decision as to the type of action which should be taken.”

There are three main theorizers of the case study as a research method: Yin (1981, 1984, 1994, 1999, 2003a, 2003b, 2005) Stake (1978, 1994, 1995, 2005, 2008), and Merriam (1998). Reflecting their epistemological and disciplinary variance (policy, education, and education, respectively) the three authors’ definitions and emphases vary.

Yin (1984, p.23) defines case studies thus: “an empirical enquiry that investigates a contemporary phenomenon within its real-life context.” (Brown, 2008, classifies Yin as a “methodologist” for his meticulous articulation of the processes of case study design and analysis.) Yin (2003b) proposes three overarching principles of case study practice: in order to focus attention on the relevant data, the theoretical premises of the research must steer case study design; alternative explanations for case study findings must receive discussion; and case study analysis must be

thoroughly descriptive, i.e. robust analysis demands that the researcher is “able to develop strong, plausible, and fair arguments that are supported by the data” Yin (2003b, p.137).

To Stake (1978), the case study is methodologically flexible, and its definition likewise: “a form of research, [the] case study is defined by interest in individual cases, not by the methods of inquiry used”. (Brown, 2008, labels Stake the “grounded interpretivist”.) Stake suggests that case studies are a naturalistic, personal experience-validating method (2000, p.19): “case studies are useful in the study of human affairs because they are down-to-earth and attention holding.” Stake (2005) stressed that cases must be organised around issues – complex, problematic *relationships* that expand the theme of the case and “go a long way toward *making relationships understandable*” (p. 444) – a notion that suggests the method is highly appropriate to the present research. Although suited to the exploration of humanistic concerns, the case study is a tightly bounded system. The interpretive and “ever reflective” (p. 450) researcher has to extract meanings and relate these to context and experience. Case studies thus generate valuable “thick description” (1995, p.102). On generalisability, Stake claimed that the purpose of the case study is not representation of the world, but representation of the case, and “the utility of case research [...] is in its extension of experience.” (1994, p.245).

According to Merriam (1998, p.27) “the single most defining characteristic of case study research lies in delimiting the object of study: the case”, which is “a thing, a single entity, a unit around which there are boundaries”. The researcher’s task is to describe and explain holistically (also stated by Stake, 2005); hence the case study is typically *qualitative and optimal for research questions answerable by qualitative methods*. The case study is intuitive in practice and heuristic in analysis, capable of illuminating phenomena by explaining a situation’s background, formative events, and explicatory factors, i.e. case studies are capable of answering the “how?” and “why?” questions (Merriam, 1998).

The three preceding interpretations are sufficiently coherent to provide the following synthetic definition:

- ❖ Case studies examine specific instances or bounded phenomena.



- ❖ Case studies produce thick description, i.e. they generate a rich informational picture so are able to answer complex questions such as “how?” and “why?”
- ❖ Prior understanding of relevant theory and literature primes the researcher and focuses the data collection process.
- ❖ Case studies are methodologically flexible, but are typically – but by no means only – used in qualitative research.

In *social* contexts, a single phenomenon rarely occurs in pure isolation, so revelation of collateral phenomena as undertheorised contributory factors is desirable, and their collection is enabled by the in-depth qualitative method that the case study provides. In the case of the current research, the specific phenomenon is management's experience of supply risk mitigation via relationships.

### **3.1.4 The Case Study Epistemology**

Inductivism is common in case study research, which is typically qualitative. The researcher attempts to generate theory from data by detecting patterns within it (Maylor and Blackmon, 2005). Inductive methods are exploratory and therefore usually coherent with the objectives of qualitative research. Phenomena that exist in “a vacuum of theory” are ideal material for inductivist research questions (Eisenhardt and Graebner, 2007). In the discipline of supply chain and risk, theory is plentiful, but theories that accommodate cultural considerations are yet to be fully developed. The phenomenon of relational Chinese business practice is well documented (making the “vacuum of theory” description probably excessive) but is understated in theories of supply. Nevertheless, this research is inductivist because the research questions prompt exploration and the *prima facie* case for relational Chinese business practice is strong.

Since the case study method is syncretic, theory produced from it is notionally better supported than theory derived from research based on a single source. Use of reinforcing, complementary data collection methods provides intra-paradigm triangulation. Paradigm breach is thereby avoided.

Reflecting the inductivist approach, this research generates theory by identifying patterns in the data collected. A process of literature-informed encoding occurred

following collection, and patterns, when evident, were built into the question set on which the semi-structured interviews were conducted. Also in keeping with the interpretivist tradition, subject sampling was deliberately specific and based on the research questions – managers of non-Chinese companies whose supply base involves Chinese companies.

#### *3.1.4.1 Theory and Practice in the Philosophy of this Research*

In the Platonic conception, theory and practice interrelate thus: theory represents a perfected model that practice approximates (Rowland, 1999). In the Aristotelian conception, theory and practice are mutually, simultaneously informative, integrative forces within a growing whole that generate understanding and insight. This research, when considered in terms of these two (not too distant) conceptualisations, is closer to the peripatetic perspective, because its research questions developed from experience of and reading on practice, and because it seeks to enrich and sensitize both theory and practice by presenting a discussion of the literature and primary case study and key informant data.

#### **3.1.5 A Question of Numbers**

Multiple case studies, like multiple experiments, provide deeper evidence from which to develop theory. Favouring the theory-generative capability of inductive, qualitative methods, this researcher rejects the generalizability offered by quantitative methods, but still seeks very modest representativeness. A single case study, like a single experiment, is ideal if the case is critical, exemplary, or revelatory of inaccessible phenomenon (Yin, 2009), but cannot yield the representativeness of *multiple* case studies. At outset, envisaged were six well-selected case study samples that would provide a good body of evidence to address the research questions. However, circumstances permitted eight industry interviews to be conducted, but lack of literature and other sources meant that only two could be developed into case studies. The two case studies were however extremely large (global) MNEs and are leaders in their sectors, so can be considered “exemplary” in Yin’s terms. The industry respondent sample set comprised *two* full MNE case studies, *two* MNE key informant cases, and *four* UK SME key informant cases. Thus, these eight industry cases are divisible into two homogeneous groups (MNEs and UK SMEs), differing by

scale, degree of Chinese supply activity, and general local-versus-international strategy and ambitions.

According to Eisenhardt (1989), eight studies are adequate for empirical projects whose purposes are primarily explorative. This study seeks insight into different experiences and risk-management approaches adopted by a variety of companies, so that findings across various industry types and scales could be identified. The industry sample was theoretically composed: cases and key informants were selected due to their possessing the conditions for understanding relationships among the relevant constructs (foreign company, Chinese supply, and risk etc.), and because their lack of industry and home state commonality enabled some, albeit minor, degree of representativeness. Information from non-industry key informants was also used (discussed in detail later).

### **3.1.6 Case Studies and Key Informant Studies: Rationale and Methods**

Flyvbjerg (1998, p.7) cites the Wittgensteinian approach: it is the *details* in a case study that create the most complete picture possible. What qualitative research loses in generalizability, it gains in informational depth and specificity. Case studies give “empirical depth and attention to detail” (Flyvbjerg (1998, p.1).

The key informant method has been endorsed by significant social researchers, such as Flyvbjerg (1998), and important business researchers, such as Pettigrew (1985). A famous study by the former was a single case study centred on a European city grappling with democratic, social, modernist personal-versus-traditional organisational power issues. A major study by the latter investigated the case of ICI’s response to rapidly evolving economic, technological, and social conditions. In both studies, the majority of data came from *key informant* interviews. This study applies a similar method: the bulk of its data derives from key informant (manager) interviews that took place face-to-face, online, and by telephone. Both case studies were reinforced by press releases, website content, news articles, and published books.

Instead of a single city or organisation, the cases exposed in this study reveal varying aspects of a single *phenomenon*, i.e. Chinese supply – itself a sub-

phenomenon of exchange/business, which resides within the overarching phenomena set that is human social interaction. The cross-cultural dimension of the Chinese supply phenomenon and the allegedly highly interpersonal/social nature of Chinese business further rationalise the phenomenological and interpretivist perspective framing this research design and the methods thus selected.

Alternatively, the case data explicated by this research could be considered a layered “metaphor” (Flyvbjerg, 1998 p.4), i.e. a metaphor for the Chinese supply phenomenon, China supply risk management, global business, Chinese-western business interaction, east-west business interaction, supplier-buyer interaction, developed world MNE involvement in developing countries, and the interaction of global MNE with small scale domestic partners, etc.

The key informant method has been used in the study of phenomena that are *directly* relevant to important issues in this research. For instance, in his research into the Chinese family firm (2001), Tsang used key informants to provide data on relational contracting, networking, and other interpersonal dimensions of Chinese business practice. Research in operations management – arguably a parent discipline of supply [chain] management – has also utilised the key informant method. For instance, Adler *et al* (1999) used key informants to investigate changeovers at Toyota.

In both of these examples, the key informants were managers, semi-structured interviews were employed, and transcript analysis was performed – a protocol that was also adopted in this research.

Because many of the key informants were managers at small firms, supporting documents (internal and especially external) were sparse. The companies of all the industry informants operated websites, so these were cross-referenced to obtain details not recalled by the informants or understood by the interviewer at the time of the interview. Facts found in catalogues, brochures, and publicity material were digested at both the pre- and post-interview stages to achieve familiarity with the industry, products, and geographical operations of the informant’s company. In the majority of the industrial key informant instances, the author researched each company prior to the interview in order to develop pertinent questions and illicit

favourable impression regarding the seriousness and preparedness of the interviewer.

### **3.1.7 The *Intrinsic* Case Study**

According to Stake (1995), the *intrinsic* case study is the case that is itself of primary, interest (P.171). The intrinsic case study occurs when a particular phenomenon or opportunity of interest occurs. Its value is particular to instance and resides in its ability to reveal uniqueness and complexity, embeddedness in context, clarity of focus, and, if possible, cause-and-effect linkages (vital connections that quantitative research would likely overlook). In the intrinsic case study, the case reveals the issues (Stake, 1995, p.25). Through the intrinsic case study, the researcher forgoes generalisation for the sake of examining the workings of a particular specimen (Stake, 1995, p.37).

*Instrumental* case studies are relevant when, for example, we choose a company and examine its methods and outcomes to ascertain how that company copes with the particular issues that engage us.

Seen in this light, our case study approach could also be considered instrumental, in that its examination permits the researcher to obtain understanding of the efficacy of methods in addition to obtaining a detailed specific case. Such reasoning is supported by Gomm *et al* (2000) who argued that case study research need not be distracted by generalisation.

Stake (1994) argues that the intrinsic case study (by dint of its pertinence to the research issues) has intrinsic value to researchers and practitioners seeking insight into a very specific phenomenon. There is also the argument that a well-chosen case study presents in microcosm issues that are symptomatic to broader wholes (a claim exemplified by Geertz, 1973). In this research, the microcosm argument appears to have weight: the findings of the case studies were generally supported by data derived from key informants, as indicated by aggregated theme tallies).

Stake (1995, p.64) stresses that the more intrinsic the case study, the more significant context becomes, and that interviews to obtain vital context must be planned strongly (a recommendation applied in this research, where extensive pre-interview investigation was conducted). Also in alignment with Stake's

recommendations (1995, p.74), themes were created and supported by tallies for the purpose of generating an aggregated picture (the same was extended to informant case studies in order to perceive macro patterns between the themes revealed and their relative frequencies).

The third form of case study identified by Stake is the *collective* case study, in which a particular phenomenon is investigated using information and perspectives derived from multiple cases.

*Aspects* of all three case study approaches are presented in this research:

- *Intrinsic*: each case and industrial key informant study is of interest: each case is influenced by context and variables specific to instance.
- *Instrumental*: each case and industrial key informant study presents data that allows insight into a particular phenomenon, i.e. management of risk in China supply.
- *Collective*: the aggregated findings of the case the industrial key informant studies revealed commonalities in the types of risk and countermeasures employed (through qualitative coding, these emerged as themes that were tallied).

Despite these overlaps, of the three types of case study approach identified by Stake (1995), the *intrinsic* case study best describes the approach employed here. The intrinsic case study parallels Creswell's "bounded system"/single case approach (2007) closely. As is typical in intrinsic case studies, data sources in the bounded system approach are purposefully few and focused, generalisability is a low priority, and the implications of its findings are modest and caveat-laden.

### **3.2 Data Collection**

A degree of accessible domain bias was unavoidable: success cases are more easily found (Farquhar, 2012). *All* the SME interviewees spoke favourably of their Chinese sourcing partners. The Hornby interviewee refused a promised interview following the media's reporting of his company's quality failures. Interpretivist researchers accept that bias of this sort is likely.

### 3.2.1 Access and Unit of Analysis

At project outset, the researcher decided that respondents would not be selected according to industrial sector. This was done for three reasons:

1. to avoid the possibility of factors and circumstances unique to the chosen industrial sector being explanatory of the data obtained;
2. because the researcher is *not* seeking insight into how relationships influence Chinese supply risk *in the context of a specific industry*; and
3. to enhance (modestly, with caveats) the applicability of any patterns uncovered by the study's findings.

Although generalizability of findings is seldom a high priority in qualitative research, it is nonetheless advantageous if attainable. The case and key informant studies came from several industrial sectors. Any cross-case commonalities are unlikely therefore to be specific, and can be more reliably perceived as *broadly characterising the Chinese supply environment as seen from the perspective of UK SMEs and non-Chinese headquartered MNEs*. Nationality criteria were however applied: sought were UK SMEs, primarily because their being headquartered in the UK allowed the researcher physical access and reduced the possibility of cultural and language factors causing interpretation error on the part of the researcher. In a project that engages with various hermeneutic issues stemming from language and culture, such precautions seemed sensible. Less control was possible when selecting MNEs, who, by their international nature, could be managed by people of any nationality. However, all the MNE case study interviewees were native English speakers, so the possibility of interpretation error due to language issues was slight.

The overarching unit of analysis is the firm, specifically the China-sourcing non-Chinese firm. However, because two categories of respondent were sought, two subunits of analysis are identifiable: UK SMEs that manufacture or procure in China, and non-China-headquartered MNEs that manufacture or procure in China.

The managers of all firms were involved in China sourcing. MNE managers had various titles: "Head Purchaser Europe" (American Food Conglomerate); "Global Risk Manager" (Swedish Furniture Manufacturer); "Supplier Coordination Manager" (FEM); and "International Sourcing Manager" (Canadian Transportation). The UK MNEs were similarly varied. Two managers (D2C and OEM) were owner-director

CEOs; the R-UK interviewee was a “Director”, and the P-S interviewee was “Commercial Manager” and “Purchasing Manager”.

Most respondents were contacted by telephone initially. Some requested details in e-mail. Tables 5-7 show how each informant was contacted initially. The ordering of the following tables indicates the chronological order in which the interviews were conducted.

*Table 5 Methods by which Case Study and Industry Key Informants were Initially Contacted*

Organisation	Type	Method of Initial Contact
French Electrical Manufacturer (FEM)	MNE (France)	Personal acquaintance (Tokyo expat)
CT	MNE (Canada)	Introduction via FEM
Direct 2 Customer (D2C)	SME (UK)	Introduction via academic (MMU) contact
OEM Products (OEM)	SME (UK)	Introduction via family business contact
Swedish Furniture Manufacturer (SFM)	MNE (Sweden)	Personal acquaintance (Tokyo expat)
American Food Conglomerate (AFC)	MNE (US)	CIPS meeting (Manchester)
R-UK	SME (UK)	Cold call and e-mail – details obtained from China-Britain Business Council (CBBC)
P-S	SME (UK)	

(In these tables, yellow shading indicates case study interviewees. Non-shaded areas are industry key informant interviewees. The ordering of the table’s contents reflects the chronological order of the interviews. Data collection occurred between December 2013 and May 2015)



*Table 6 Methods by which Other Key Informants were Initially Contacted*

Organisation	Type	Method of Initial Contact
Cargo East Asia	MNE (Hong Kong)	Multimodal UK Exhibition 2014: "China Risk" seminar and workshop
China-Britain Business Council (CBBC)	NGO (UK)	
State China Manufacturing Group (SCMG)	MNE (China)	CIPS meeting (Cheshire)
Logistics Training International Ltd (Stuart Emmett)	SME (UK)	LinkedIn, e-mail
Cranfield School of Management (Prof Martin Christopher)	University (UK)	LinkedIn, e-mail
360C	SME (UK)	Introduction via MMU contact
Anderson Consulting	SME (UK)	Web search; cold call and e-mail
UKCeram Products	SME (UK)	Introduction via Anderson Consulting
Various (supply chain and sourcing professionals worldwide)	Various	LinkedIn discussion forum

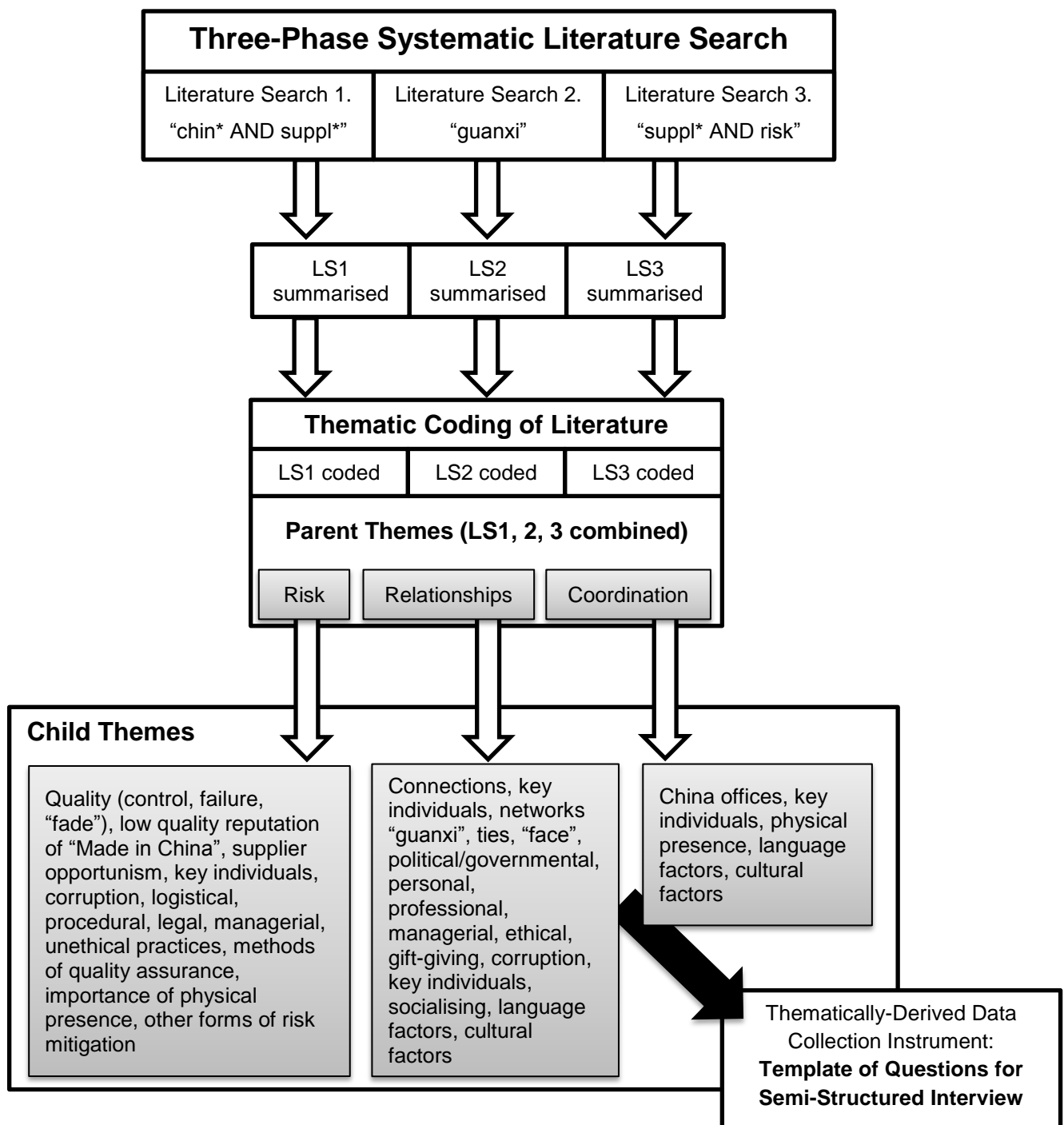
The interviews were semi-structured. The key informant interviews were undertaken to add data, validate the case study findings, and allow comparison. The structure of the key informant interviews was derived mostly from the findings of the case study interviews. The case study interview questions were derived from recurrent themes identified during the NVivo coding of the summarised findings of the literature (see Table 7).

*Table 7 Parent and Child Themes Recurrent and Emergent in the Literature Review*

Parent Themes	Child Themes
<i>Risk</i>	Quality (control, failure, "fade"), low quality reputation of "Made in China", supplier opportunism, key individuals, corruption, logistical, procedural, legal, managerial, unethical practices, methods of quality assurance, importance of physical presence, other forms of risk mitigation
<i>Relationships</i>	Connections, key individuals, networks "guanxi", ties, "face", political/governmental, personal, professional, managerial, ethical, gift-giving, corruption, socialising, language factors, cultural factors
<i>Coordination</i>	China offices, key individuals, physical presence, language factors, cultural factors
<i>Informative or illustrative incidents</i>	Advantages and disadvantages of Chinese suppliers

Figure 9 describes how the question template used for the interviews was derived from the literature.

Figure 9 Derivation of Template of Questions for Semi-Structured Interview



The use of specific search criteria increased the probability that the searches would return only pertinent articles. It is for this reason not surprising that thematic coding of the resultant articles generated parent themes that reflect the literature search criteria. The disaggregation of the parent themes into sub nodes or child themes revealed more particular instances of informative observations and events. This specificity primed the researcher with foundations for questions and an array of

avenues by which the larger issues could be approached – this indirect method was particularly useful with laconic interviewees. All the parent themes overlap to some degree. The child themes identify separable manifestations of the overarching issues, so provided subjects for exploration via interview.

### **3.2.2 The Interview Method**

According to Yin (2014), interviews are one of the most important methods of acquiring case study evidence. The interview method is one of Yin's four recommended sources. The others – archival material, documentation, observations, and artefacts – although desirable, were not uniformly available. In all cases, documentation was requested, but all MNE respondents referred to their corporate websites. Two UK SMEs provided documentation in the form of supplier catalogues and brochures, but these contained only addresses, prices, and product details, so were of limited value to case study development. Two interviews were via Skype. For these, the guidelines of James and Busher (2009) were followed. (The same text was used to devise interview scheduling and structured question sets; it provided guidance regarding laddering of questions in online discourse, such as that required when steering the LinkedIn discussion).

Because data from multiple respondents would have built a deeper, more perspective-rich account of each company, at the conclusion of each interview, the researcher asked for additional contacts within the company. Three of the eight managers interviewed said they would talk to relevant individuals but no further communication followed. Follow-up e-mails thanking the interviewees for their time and contribution yielded no more internal or external leads.

A question template was built from emergent and recurrent themes revealed by qualitative coding of the findings of the literature searches. Abstracts of articles that passed the exclusion/inclusion criteria were first collated in an Excel spreadsheet and then transferred to NVivo for coding and analysis. In accord with Saldaña's recommendations (2009), two cycles of coding were performed – to reveal "parent" and "child" themes respectively. The first coding cycle produced three dominant parent themes: "Risk", "Relationships", and "Coordination". The second coding cycle disaggregated the parent themes to reveal greater specificity. The child themes

identified in the second cycle became material that the researcher deployed to prompt interviewees and thus address the research question.

According to Cassell (2015), theory can be investigated via semi-structured interviews: the “theoretical interview” – as employed by Dennis and Parkhe (2002) and Willman *et al* (2006) *inter alios*. In Cassell’s terms, the theoretical interview is derived from a review of the relevant literature. This corresponds with Swanborn’s claim (2010, p.10) that knowledge of the phenomena of interest should precede case study research. This project used literature-informed semi-structured interviews, so can be considered compliant with both Cassel and Swanborn on this matter.

### **3.2.3 Case Study Sampling**

As mentioned earlier, if the researcher’s access to the details and locations of UK SMEs constitutes a convenience, then convenience sampling influenced interviewee selection.

A total of 277 companies in the United Kingdom were identified by web searches and then contacted. The details of around 50 of those companies were obtained through the China-Britain Business Council (CBBC). For reasons of physical access, SMEs located geographically near the researcher (the English North West) were prioritised. Managers at two companies – P-S and R-UK – agreed to interviews. Of the 277 contacted, around 70 managers (25%) expressed willingness to be interviewed, but only two (the aforementioned) made themselves available. Time constraints (exacerbated by unanswered e-mail requests and unreturned phone calls) and the evidently commonplace resistance to cold calling researchers requesting what many likely perceived to be sensitive information forced a change of tactics: the remaining six interviews were obtained through introductions via personal and academic contacts.

Sampling was predominantly purposive (Cassell, 2015), since respondents were chosen for their compliance with specific criteria: SC or purchasing managers at UK SMEs that manufacture or procure in China, and SC or purchasing managers at non-China headquartered MNEs that manufacture or procure in China. “Snowball” sampling (Cassell, 2015) accounted for one case: CT. The FEM interviewee

connected the researcher to a contact at CT (mutual acquaintances via a Montréal business network). Since the CT contact fitted the purposive criteria and was willing to be interviewed, the interview was conducted and a case study thereby acquired.

### **3.2.4 Key Informant Sampling**

Key informant selection was also purposive but this purposiveness derived from informants' potential to illuminate phenomena of interest (some tangential, some focal) that emerged from the analysis of the case study interview transcripts. For example, because the importance of negotiation protocol and insight recurred in several case study interviews, the researcher found and contacted a UK company (360C) currently negotiating with Chinese suppliers. This way, overlooked issues could be explored in depth and their significance to the research questions judged thereon. The three consultants were sought for their experience of matching UK SMEs with Chinese suppliers and their insights into the challenges of China sourcing. Consultants, since their clients represent various industries in various locations, have a depth and breadth of knowledge beyond that of a single company and are able to discuss issues without naming the companies involved.

In the interests of lessening, if only slightly, the cultural-perspectival imbalance of the research design, the Chinese view on supplying non-Chinese companies was sought. A representative of a Chinese MNE (SCMG) was interviewed. Similarly, because the case studies focussed on the issues of non-Chinese companies buying from Chinese suppliers, the experiences of a UK company (UKCeram) *selling UK-made goods into China* seemed an informative complement. These reverse-perspective accounts were sought for their potential to enhance the informational picture, and expose the complexities and idiosyncrasies of Chinese business *outside the dichotomous enclosure that is the China supplier-foreign buyer context*. Such accounts, it transpired, became a means of identifying consistencies and exceptions.

Table 8 (following) describes the sampling of case and key informant studies.

*Table 8 Case Study/Industry Key Informant Sampling*

<b>Organisation</b>	<b>Type</b>	<b>Industry</b>	<b>Sampling Type</b>
French Electrical Manufacturer (FEM)	MNE (France)	Electrical & power (B2B, B2G)	Purposive
Canadian Transportation (CT)	MNE (Canada)	Rail vehicles & railway infrastructure (B2B, B2G)	Purposive/Snowball
Swedish Furniture Manufacturer (SFM)	MNE (Sweden)	Furniture & domestic goods retail (B2C)	Purposive
American Food Conglomerate (AFC)	MNE (US)	Food & agricultural (B2B)	Purposive
Direct2Customer (D2C)	SME (UK)	Garments (B2B)	Purposive
OEM Products (OEM)	SME (UK)	Domestic & medical electrical appliances (B2C, B2B, B2G)	Purposive
R-UK	SME (UK)	Agricultural mechanical (B2B)	Purposive
P-S	SME (UK)	Glass making products (B2B)	Purposive

The key informant interviews were not common template-based. Each case was selected to provide expansion on a particular area of interest uncovered in the literature review or mentioned by a case study respondent. Table 9 explains why the other key informants were selected. The questions asked during the interview were based on those reasons.

*Table 9 Selection of Other Key Informant Respondents*

Organisation	Type	Reason Why Selected
360C	SME (UK)	Provided insight into negotiation processes and relationship formation and maintenance with Chinese suppliers.
UKCeram Products	SME (UK)	Recommended by Anderson Consulting: experience of selling UK products to Chinese companies; experience of difficulties of buying from Chinese suppliers.
State China Manufacturing Group (SCMG)	MNE (China)	Provided the Chinese perspective on supply risk when selling to non-Chinese companies; provided insight into organisational structures and activities of a major Chinese MNE; provided contrast and comparison with non-Chinese MNE case studies.
Anderson Consulting+	SME (UK)	Extensive experience helping multiple UK SMEs manufacture and procure in China. + third-party consultant and intermediary * logistics and supplier-buyer liaison specialist
Cargo East Asia+* (CEA)	MNE (Hong Kong)	
China-Britain Business Council (CBBC)*	NGO (UK)	
Logistics Training International Ltd (Stuart Emmett)	SME (UK)	Strong advocacy of relationships as critical determinants of supply (chain) performance
Cranfield School of Management (Prof Martin Christopher)	University (UK)	Extensive record of influential articles on general, i.e. non China-specific, supply (chain) risk – causes and solutions; authoritative source of SCM literature
Various supply chain and sourcing professionals (n=26) worldwide (via LinkedIn discussion forum)		Provided an overview of professional opinion from as diverse a range of sources as possible.

### 3.2.5 Transcription

Audio recordings were made of all interviews (cases and key informant), and an additional video recording was made of the consultant group interview/workshop seminar at Multimodal 2014. Interview transcription was performed along the guidelines provided by the Saunders *et al* checklist (2012, p.552).

### 3.3 Data Analysis

Coding was via NVivo, which was selected for its usability, storage capabilities, and data generation functions (such as word clouds and other forms of frequency-illustrating diagrams). According to Easterby-Smith *et al*, (2012), code-based applications such as NVivo or ATLAS.ti provide better identification of emerging themes than text-based packages such as MAXQDA.

An institutional licence and institution-wide access was another practical advantage of NVivo. On functionality, notes and memos made during and after the interview

and during and after the transcribing and coding processes could be included. NVivo permits inclusion of appended data as coded material. This feature invokes the phenomenological and interpretivist epistemologies that are operative in the research design, since it attempts via humanistic methods (i.e. coding of in-depth interviews) to get as close as possible to the phenomenon of interest (Remenyi *et al*, 1998).

### **3.3.1 Within-Case and Cross-Case Analysis**

*Within-case analysis* (Farquhar, 2012) occurred in the *Findings* section: case and key informant studies were reported individually – their intrinsic meaningfulness re. the research questions extracted and reported. *Cross-case analysis* (Yin, 2014) occurred in *Discussion II*: the most salient aspects of each case and key informant study were matched against comparable aspects in associable case and key informant studies, i.e. MNE cases and key informant studies were cross-compared, and UK SME key informant studies were cross-compared. Similarities and differences were thus revealed.

### **3.3.2 Quantified Results of Thematic Analysis by Coding**

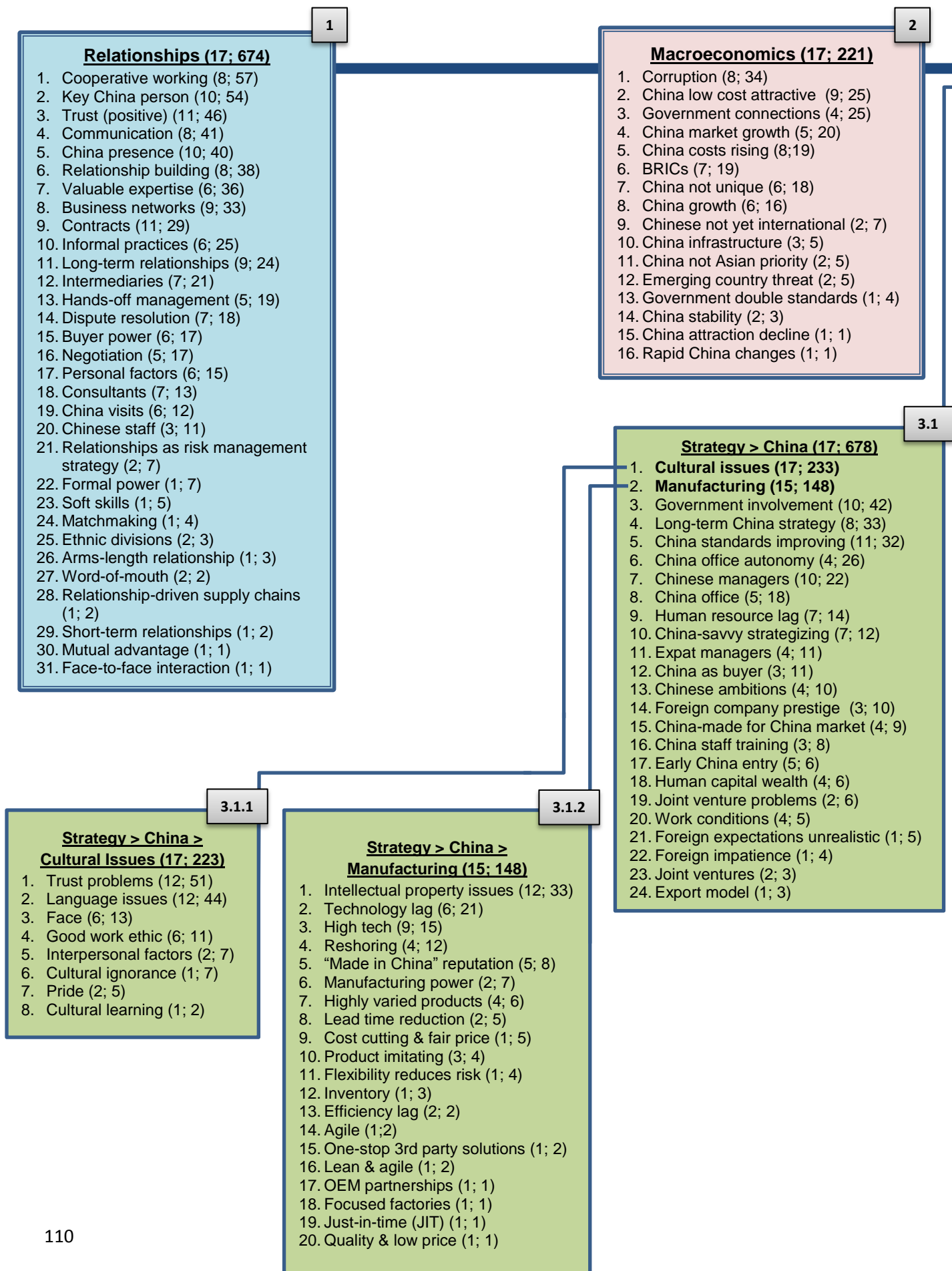
Coding revealed themes that could be divided into three main groups: 1. *Relationships*; 2. *Macroeconomics*; and 3. *Strategy*. In Figure 10 (following), the first figure inside parentheses indicates the number of sources in which a code was reported. The second figure indicates the frequency of the code across all sources, i.e. the total number of instances to which the code was applied.

Inductive analysis requires that categories, themes, and patterns emerge from data itself, and are not imposed prior to data collection (Janesick, 1994). The preliminary literature search did however pre-inform the researcher regarding issues of relevance to risk management in Chinese supply. Hence, reviewing of the literature elicited research questions and the design of the semi-structured case study interview template. However, in the coding of the research, themes and patterns were allowed to emerge without deliberate imposition; that is, no fixed or formal categories, patterns, or themes were created prior to analysis.





Figure 10 Themes and Code Counts as Schematic



3

### Strategy (17; 1477)

1. China (17; 678)
2. Risk (17; 385)
3. Supplier Management (17; 309)
4. MNEs (14; 105)

3.2

#### Strategy > Risk (17; 385)

1. **Quality (17; 222)**
2. Supply chain (11; 56)
3. China-specific risks (3; 10)
4. China easy for business (4; 9)
5. Risk planning (1; 7)
6. Disintermediation (3; 5)
7. Extended supply chain risk (1; 5)
8. Risk spreading (2; 4)
9. Resilience (1; 3)
10. Other China risks (2; 2)
11. Risk limitation by design (1; 2)
12. Buying on price (1; 2)
13. Customs problems (1; 2)
14. Environmental issues (1; 1)
15. Expat flight (1; 1)
16. Risk management team (1; 1)

3.3

#### Strategy > Supplier Management (17; 309)

1. **Suppliers (17; 214)**
2. **Ownership (10; 38)**
3. Supplier control (5; 14)
4. KPIs (2; 7)
5. "Integrator" (2; 7)
6. Adversarial supplier management (1; 5)
7. Supplier push (2; 4)
8. Iceberg costs (1; 4)
9. Customer pull (2; 3)
10. Supplier opportunism (1; 3)
11. Overseas supplier visits (1; 3)
12. Demand risk (1; 2)
13. Decoupling (1; 2)
14. Supply chain resilience (1; 1)

3.4

#### Strategy > MNEs (14; 105)

1. Global practices & standards (10; 32)
2. Corporate culture (2; 21)
3. HQ authority (3; 8)
4. Global markets (5; 7)
5. Local compliance (4; 7)
6. Local procurement (3; 5)
7. Design services (3; 4)
8. Ethical business policy (1; 4)
9. Highly global presence (2; 3)
10. Global procurement model (1; 3)
11. Importers (1; 3)

3.2.1

##### Strategy > Risk > Quality (17; 222)

1. Quality failure (10; 41)
2. Unsophisticated work (7; 30)
3. QC visits (9; 23)
4. Quality (positive) (10; 22)
5. In-house quality standards (7; 22)
6. Quality standards (11; 21)
7. On-site QC people (8; 21)
8. China quality ahead of ROTW (6; 11)
9. QC by specs (5; 10)
10. Quality (general) (5; 8)
11. Global QC practice (4; 4)
12. Reworking outside China (4; 4)
13. China quality is mixed (2; 2)
14. QA companies (3rd parties) (1; 1)

3.3.1

##### Strategy > Supplier Management > Suppliers (17; 214)

1. **Supplier selection (10; 44)**
2. Transparency (12; 40)
3. Unethical practice (10; 32)
4. Strategic management (7; 13)
5. Monopoly supplier (3; 13)
6. Supplier power (5; 12)
7. Strategic acquisition (3; 10)
8. Supplier monitoring (4; 9)
9. Supplier investment (6; 8)
10. Collective bargaining (3; 7)
11. Regional variance (4; 6)
12. Tier 2 involvement (2; 6)
13. Reverse marketing (3; 5)
14. Specialist suppliers (3; 4)
15. Selective suppliers (3; 4)
16. Mutual visibility (1; 1)

3.3.2

##### Strategy > Supplier Management > Ownership (10; 38)

1. Wholly owned (5; 20)
2. Joint venture (2; 2)
3. Shared factory (2; 2)

3.3.1.1

##### Strategy > Supplier Management > Suppliers > Supplier selection (10; 44)

1. Supplier background checking (1; 4)
2. Supplier auditing (2; 2)
3. "Due diligence" (1; 2)

In Figure 10, each theme (NVivo: “node”) is ranked according to frequency. In many cases, the frequency reported for the parent node was greater than the sum of the child nodes (full tables providing rankings by frequencies according to every theme and source are provided in the Appendix). This is because some areas of transcripts were coded with the parent node alone – when the parent node was more descriptive than the child nodes or the text too general to merit the specificity of an available child node. Table 10 reports the ranking of the parent themes.

*Table 10 Parent Themes: Ranking by Frequency*

Themes (NVivo: “Nodes”)		Sources	Frequency of Codes	Ranking
Parent	Strategy	<i>all</i>	1477	1
	Relationships	<i>all</i>	674	2
	Macroeconomics	<i>all</i>	221	3

In cases where multiple codes were reported with the same frequency, the first number in parentheses (the number of sources) determined the ranking. The code reported by more sources is ranked higher.

In cases where multiple codes were reported in the same number of sources and with the same frequency, a qualitative approach was applied to determine ranking. The transcript was reassessed for broader thematic messages, and the code that corresponded most closely with the dominant or most emphatically expressed messages elsewhere in the same source was ranked higher. When there was insufficient thematic correlation or support, similarity to or deviation from other codes was considered. Codes that corresponded to similar themes or discussions outside the source were ranked higher. Only six codes had to be ranked this way. The purpose of code ranking is to raise to prominence, and thereby focus the subsequent theoretical discussion on the themes that dominated the information obtained from all seventeen sources.

## 3.4 Presentation of Findings

### 3.4.1 Verbal Logic Models

For the purposes of illustrating its case study and key informant findings, this research makes extensive use of verbal logic models. These models are diagrams: purposefully simplified, graphic descriptions of the phenomena of interest. The findings of each case study are illustrated with a diagrammatic, verbal logic model showing the main elements of the supply system. Industry key informant findings are illustrated with a system diagram too, but also with a sociograph showing the relationships that enable that system (MNEs are too complex to depict sociographically). The potential advantages and drawbacks of use of models in social sciences do however merit comment.

Deutsch (1966) notes the following advantages of models in the social sciences: Firstly, by ordering and relating systems to each other and thereby providing images of gaps and crossovers otherwise imperceptible, models have an organising, expository quality; models create a general picture of a range of different circumstances. Secondly, models, by simplifying information that is complicated or ambiguous, assist explanation. This gives models a useful heuristic function: models guide the practitioner or researcher around the focal elements of a system.

Models can describe the *structure* of phenomena. In this sense, a diagram of the components of a device could be described as “structural”. Other models, which McQuail and Windahl (1994) term “functional”, describe systems in terms of energy, forces and their direction, the relations between the various parts, and the influence of one part on another.

The models presented in this research fall into both the “structural” and “functional” category. “Structural” because supply is a highly organized activity conducted to yield definite outputs; “functional” because supply management is a business activity and business entails social-economic interaction that must, to some degree, be dynamic.

Although models can be purely verbal/diagrammatic or mathematical, only verbal/diagrammatic models were – the mathematical model is logically more suited to positivist research.

Critics allege that models are excessively confining and abbreviated, resulting in advocates of theoretical models becoming side-tracked by defence of their models (McQuail and Windahl, 1994). A similar risk is that a model, or even a succession of models, can perpetuate questionable fundamental assumptions about the model's components or processes. An example in the field of supply is the tendency to represent activities as unidirectional processes, in which conveyance occurs between nodes in a discreet, linear manner. Such representations overlook the circularity, negotiability, flexibility, and openness of supply arrangements, which in the digital age are characterised by information loops and communication between nodes.

This research regards models primarily as explanatory devices useful in the comprehension of the social and organisational processes and linkages that characterise supplier management activity. Conceptually, their usefulness could derive from the notion that business – particularly supply – is a force that is bound within, facilitated by, and manifested in relationships that are interpersonal, social, and economic in nature, and thus have consequences for the aggregate and all organisations and individuals therein.

The simplification required by diagrammatic modelling imposes limitations; however, the complexity of possibility necessitates that simplification. For illustrating case study findings, the model is a logical choice: its reductionist language is its flexibility; its non-prescriptiveness permits adaptability. Philosophically, the use of models is coherent with the overarching ontological perspective and methodological choices upon which this research is based.

### **3.4.2 Business Process Models**

Verbal models are heavily used in operations management andragogy (e.g. Slack *et al*, 2004). Influential supply management theories are succinctly represented by models too, such as the “Integrated Business Processes within a Supply Chain”

model (Lambert and Cooper, 2000). There are simpler, but influential, concept block models also, such as that used in Christopher's "Agile Supply Chain" theory (2000).

### 3.4.3 Sociographic Models

Each SME supply system model is complemented by a sociographic model. Based on Moreno's human network-describing diagrams and their visual language (1953), these models show the interconnectedness between *persons* (when explicitly named by interviewees) or organisations/roles (when specific persons were not named or unknown). Network structures, and what Crandall *et al* (2010) term "relational flow", are thus revealed. Ties are represented by lines between actors/individuals. In the models, line *thickness* indicates tie strength; line *length* indicates frequency of interaction between ties. Ties, tie strength, and interaction frequency are concepts derived from Putnam (1993), and Granovetter (1973).

The strength and weakness of ties were qualitatively inferred from interviewees' comments and their subsequent analysis – not quantitatively derived from Likert scales or other methods common in sociometric research. Similarly, in the supply system models, the volume/scale of the information and product flows was also qualitatively inferred from interviewees' comments and their subsequent analysis, not quantitatively derived from numerical data. Thus both models reflect two-modes of interpretive analysis, for the purpose of illustrating two interrelated dimensions of the supply network – business processes and the corresponding relationships between individuals and organisations. The juxtaposition of the two models is intended to reveal comparative and contrastive features of each, and, ideally, expose any reflection.

According to Conway and Steward (2009, p.75), networks can be regarded as a form of "analytical lens" through which theoretical analyses can be elucidated and phenomena *in situ* explicated. Also according to these authors, network analysis since the mid-1990s has helped business researchers reveal and theoretically situate the role of organisational networks in business. Scott (2000) claims that the network perspective can be traced to three important strains of origin: the sociometric analytical work done by Moreno (1934, 1953) that resulted in the development of graph theory, a method of representing network structures

graphically using basic elements such as circles to represent individuals and lines to represent connections between individuals; Harvard researchers of the 1930s who investigated the networks of relationships and cliques; and the Manchester social anthropologists of the 1950s and 1960s (Barnes and Mitchell, for example).

For Easterby-Smith *et al* (2012), social network analysis (SNA) allows social relationships and the importance of relations to be explicitly delineated. Granovetter's theoretically pivotal concept of "strong" and "weak ties" was derived from the mapping of social connections.

Themes analogous with the mainstay concepts of social network theory – ties, trust, structural holes, and boundary spanning (Granovetter, 1973; Coleman, 1988; Burt, 1992) – have rich presence in the literature on Chinese business "guanxi" networks (Wilkinson, 2011). Based on their recurrence in the literature, these themes appear to characterize Chinese business interaction, with implications for transaction cost economics, cross-cultural business, and integration based business concepts such as SCM.

#### **3.4.4 Report/Narrative Structure**

The case study/key informant findings that constitute the core primary data of this research are conveyed in a structure that is in general alignment with the combined recommendations of Janesick (1994), Stake (1995), and Yin (2014), and exemplified by Motwani *et al* (2005).

As with qualitative coding, there exists no single, universal, or proven best system of case study or key informant report/narrative structuring (Janesick, 1994). "Staying close to the data" (p.215) is generally considered the most effective method. Hence, both case study and key informant reports are divided by headings that reveal the main topics discussed in the interviews.

As would be expected, the headings of the reports broadly reflect the themes revealed by node/theme counts during the coding process. Because the semi-structured interview template was designed to elicit detail on the themes and theories that emerged during the literature review, the themes of the interview – and the resultant report structure – reflect that design.



In all case and key informant studies, interviewee data is the primary source around which each report is structured. Data from textual sources is referred to where it supports or contrasts with interviewee input. Each case study and key informant report contains company details and other helpful information not predicted by the literature. It is for this reason, among others, that the interview was semi-structured; and it is for this reason that a rigid structuring according to themes alone was not applied – such an imposition would have excluded valuable details.

Most report content focusses on aspects of company *strategy*: supplier management strategy, China strategy, and quality and logistics risk management strategy among others. Relationships and macroeconomic concerns arise through these lenses of strategy. Consequently, the case study reports' major foci are strategic primarily, and concern macroeconomic and relationship factors incidentally. This is borne out by the coding frequencies (Table 11). Three overarching themes were identified during the coding process and the subsequent summing of frequency counts:

*Macroeconomics, Relationships, and Strategy*. So dominant among these was *Strategy*, it was disaggregated into sub-themes. All parent, child, and sub-themes are shown in Figure 10 (the schematic).

*Table 11 Coding: Parent Themes, Frequencies, and Ranking*

Parent Themes	Frequency of Codes (all sources)	Ranking
Strategy	1477	1
Relationships	674	2
Macroeconomics	221	3

It also emerged during coding that *Relationships* as a theme was *indivisible* from strategy. For this reason, the reports are separated into sections dominated by Strategy and China-specific methods of risk management, in which the embeddedness and centrality of relationships to strategy can be perceived. Table 12 shows the overlapping in the parent themes within the various headed sections of the reports.

Other sources (press releases, books, internal documents, and other textual content) that support interviewee input are referenced using numbers inside square brackets [ ]. Where no numbers inside square brackets appear, the reader can assume that

the information comes only from the interviewee. Such cross-referencing is intended to boost validity, which in the case of qualitative research is (according to Wolcott, 1990), solid explanation and description.

*Table 12 Correspondence of Report Headings and Parent Themes*

Report Heading	Parent Themes Present and Overlaps		
	Strategy	Relationships	Macroeconomics
x.x.1. Company Overview	n/a	n/a	n/a
x.x.2. Internationalisation	✓		✓
x.x.3. Supplier Management Strategy	✓	✓	✓
x.x.4. China Strategy	✓	✓	✓
x.x.5. China Risk Management I. Logistics	✓	✓	
x.x.6. China Risk Management II. Quality	✓	✓	

It is hoped that this form of composition will be, in Yin's terms (2014), "engaging" (p.205), i.e. clear in style and sufficiently interesting to stimulate continued reading. Yin's "linear analytic" structure (p.188) is the most fitting of his six structure types, since these case studies present findings in an ordered, linear fashion. Yin states that the narrative element must be preceded by a methods and literature section and followed by a discussion and conclusion. The format of this thesis renders this format inapplicable: the reports/narratives of all the case studies are collated. Together they constitute the Findings chapters of this research. Methods, literature, and discussion surround these chapters. The inclusion of a separate methods, literature, and discussion section for each case and key informant report would entail repetition and redundancy. Hence, the fit of Yin's "linear analytical" is partial: in principle, applied; in practice, adapted. According to Stake (1995, p.33), a case study report is well structured if it focuses clearly on the areas of most relevance to the research questions, where necessary repeat areas that deserve emphasis, and is supported by tables that present isolated items of importance (p.79). This author's attempt to apply the foregoing is reflected in the use of headings in reports and tables in the chapters that present aggregated findings.

(In some key informant reports, informant brevity was such that the need for separation by headings was obviated. Key informant data was however aggregated, and tables were created to report their main findings.)

Miles and Huberman (1994) describe two main categories of data display: matrices and networks (discussed in the previous section). Matrices consist of tabular arrangements of data in cells. Miles and Huberman (1994) recommend *both* forms of data display as economic modes of representing complex textual data (they refer to transcriptions, narratives, and other textual data as “extended text”). Matrices and networks allow selected items and key findings to be extracted, emphasised, and visually presented for comprehensibility. Graphical methods benefit the researcher by forcing, where possible, the data into a logical and theoretically meaningful arrangement. Moreover, synthesising of individual models into composite meta-models becomes possible, provided sufficient commonality between the cases is revealed – such a revelation being itself facilitated by the use of sociographs and business process models. These recommendations were applied. The case studies and key informant reports feature various models that reveal patterns and structures. Meta-models are also proposed in the *Discussion* section.

### **3.5 Contributions of This Research**

This research has theoretical and practical implications: it could *sensitise* managers and inquisitive theorists to the theoretical and practical ramifications of its observations, and thereby fortify or disrupt dominant or nascent theories and practices of supply risk management in the context of China.

The ultimate theoretical contributions of this research are condensed into five theoretical outputs and two practitioner outputs. (*Theoretical Output #1* has three collateral outputs (explained in the *Discussions* chapters). For this reason, although the total number of theoretical outputs is five, the *Table of Contents* indicates the main two.)

The subsequent chapter presents the findings of the two MNE case studies.



## **4. Case Study Findings**

This chapter presents the findings of the two case studies – French Electrical Manufacturer (FEM) and Canadian Transportation (CT). For each case, supply strategy, China strategy, and risk management are described.

### **4.1 Case Study 1 (CS1): French Electrical Manufacturer (Global MNE)**

#### **4.1.1 Company Overview**

FEM is a Paris-based European multinational specialising in electrical distribution and energy related hardware for residential and non-residential facilities. Figures from 2014 [S15] indicate that the Asia-Pacific region and Western Europe each represent 28% of FEM's business, North America 25%, and the rest of the world 19%. In terms of product sales, electrical distribution systems for residential and non-residential buildings are FEM's core lines (33%), industrial and mechanical products are second (27%), utilities and infrastructure follow closely (26%), and data centres and networks represent the remainder (14%) [S6, S7, S13]. FEM operates in 148 countries and employs around 170,000 people. By some measures (i.e. annual revenue made by a publicly traded company specialising in energy-saving electrical equipment), FEM ranks world no.7.

FEM is an industry-oriented business supplying to governments and other businesses. FEM is not a well-known consumer brand. Its competitors are companies such as Siemens and General Electric, but these are far more diversified in their product offerings. FEM's preferred customers are large scale construction and infrastructure companies. Currently, FEM is investing most heavily in developing its Asia-Pacific and North America markets [S4, S10, S16].

#### **4.1.2 Internationalisation**

Since 1980, FEM has been acquiring companies, with the number of companies acquired increasing on a year-on-year basis [S3]. From 2011 onwards, the majority of FEM's acquisitions have been data handling and software companies, possibly signifying the direction in which the company is turning. Pre-2011 acquisitions were,

in the majority, electromechanical companies. However, in 2015, FEM's speciality is still electrical distribution hardware (switchgears, power supplies, circuit breakers, programmable logic boards, sensors, and motor controllers). FEM owns 23 mostly European subsidiaries, all of which manufacture hardware or software for the electrical distribution industry. The Asia-Pacific markets that is most keen to service are those of Japan, South Korea, and China [S10, S12].

#### **4.1.3 Global Supply Strategy**

FEM operates a network of international supply storage and order consolidation "hubs". These operate as regional warehouses/distribution centres. The North American markets, for example, are served by one hub in Mexico City and one in a suburb of Montreal. High volume and/or complex orders can bypass the hubs and go directly to the site of installation (in the case of infrastructure). FEM also runs assembly facilities ("FEM Factories"), where goods from separate suppliers converge and multiple-component items are assembled. Fully composed orders are then forwarded directly to the buyer, to the buyer's specified location, or to a regional hub.

Suppliers provide FEM and its subsidiaries with a range of products, primarily electromechanical (e.g., standard devices) in nature. Where possible, suppliers source from within-nation tier 2 suppliers, since this practice reduces complexity (linguistic, transactional, logistical, tax and customs-related). FEM favours purchasing the majority of its products from third-parties, and leveraging its scale and credentials in purchasing negotiations. This strategy reduces overheads and the complexity of managing, staffing, and supplying hundreds of component makers around the world. In a small number of exceptional cases, FEM contributes to supplier upskilling and investing according to commercial, logistical, and strategic rationality. Despite FEM's preference for arm's-length, transactional supplier relationships, the firm will acquire some suppliers, especially suppliers of *critical* components or bottleneck products. This occurs most often when maintaining externality would incur penalizing costs.

Product complexity and supplier competency generally correlate. Less sophisticated products are manufactured by suppliers who specialise in limited material products such as cable and fastenings. When possible, FEM prefers to use multi-capability

suppliers, who can manufacture a variety of products and, ideally, assemble, kit, and package. Since many of FEM's products are low-tech, the supply base is, overall, competitive. As products increase in complexity, the number of suppliers capable of producing those products diminishes. This fully rational situation is exploitable. A large proportion of FEM's products are near commodity status (fuses, switches, resistors, cables, and circuit breakers), which gives FEM the advantage of a buyer's market for these categories of product. Since FEM incorporates high quantities of such products in its solutions, the orders it places with lower-tech suppliers are high-volume. More sophisticated products come from fewer suppliers, and higher-tech suppliers enjoy the advantage of a supplier's market. FEM operates a network of international suppliers (in the case of FEM, over 200 factories worldwide [S6]).

FEM places responsibility for tier 2 supplier selection and performance with its tier 1 suppliers. The global nature of FEM's operations and overall corporate strategy is reflected in the organisation's preference for establishing national and regional headquarters, which FEM calls "Centres of Excellence".

#### **4.1.4 China Strategy**

FEM's Chinese supply base is growing, and so too is FEM's Chinese market [S2, S9, S11, S13]. Tremendous investment on the part of the Chinese government in buildings and other infrastructure has created numerous high returning contract opportunities for FEM [S15]. Currently, the growth of the Asia-Pacific markets and the promise of the rents obtainable therein, actual and potential, are factors influencing FEM's supplier selection strategy [S5, S13, S16].

Possibly illustrating FEM's keen ambitions in the region, China alone has three "Centres of Excellence" – in Guangzhou, Shanghai, and Wuhan [S12]. Despite steadily increasing labour costs, Chinese suppliers remain very price-competitive. Possibly more importantly, deep engagement with an established Chinese supply base gives FEM presence, visibility, opportunity, and industrial connectedness in a rapidly growing market. The firm's policy of within-nation China sourcing also reduces the logistical costs and complexities of servicing that market.

In contrast to its general stance on suppliers relations, FEM's interest in *Chinese* supplier acquisition is growing, but no acquisitions have to date been

completed. The interviewee stated that 80% of FEM's offerings consist of products made by third-party Chinese suppliers. The remaining 20% are the outputs of speciality non-Chinese suppliers that FEM has acquired in order to secure the availability of more complex, higher value products (and, presumably, to sell similar products to competitors at a suitable mark-up).

Currently, there are few Chinese suppliers in FEM's network that are making a *component* that is sufficiently critical to merit acquisition. The Chinese suppliers being most closely scoped for acquisition are those who have particularly good access to *rare earth metals*, which are critical to many of FEM's core products. Generally, the Chinese supply base is less capable and less technologically sophisticated than that of Japan, for example, so represents limited value in terms of technological learning. Nevertheless, FEM has acquired a small number of joint-ventures with Chinese state-owned makers of electrical equipment ([S9, S11, S12].

Since FEM provides residential and non-residential power distribution hardware, their typical Chinese customer is a state-owned construction company under contract to a local or central government. In China, where government involvement in construction is extensive, forging contacts with the Chinese government through subcontracting has proven prudent practice.

FEM regards China and Asia Pacific generally as markets of growing opportunity and therefore of strategic significance, and increasingly important as a region of supply base location [S2, S7, S8, S10]. For these reasons, FEM is gradually increasing its investment in some of its key Chinese suppliers and, whenever possible, servicing its Chinese customers with China-sourced supply. General policy at FEM is to supply worldwide customers with product sourced worldwide according to profitability and risk minimization, creating crossflow. China is no exception: Chinese suppliers provide products for worldwide markets; Chinese customers can receive products sourced both within-nation and overseas.

For FEM's Chinese suppliers, contracting with FEM brings various advantages, not the least of which are high quantity orders and stability of partnership, coupled with the possibility of interacting and thereby furthering their relationships with other local



suppliers, and, possibly, independent entry into foreign markets on the back of association with FEM. In China, central and local government encourages FEM to engage Chinese suppliers.

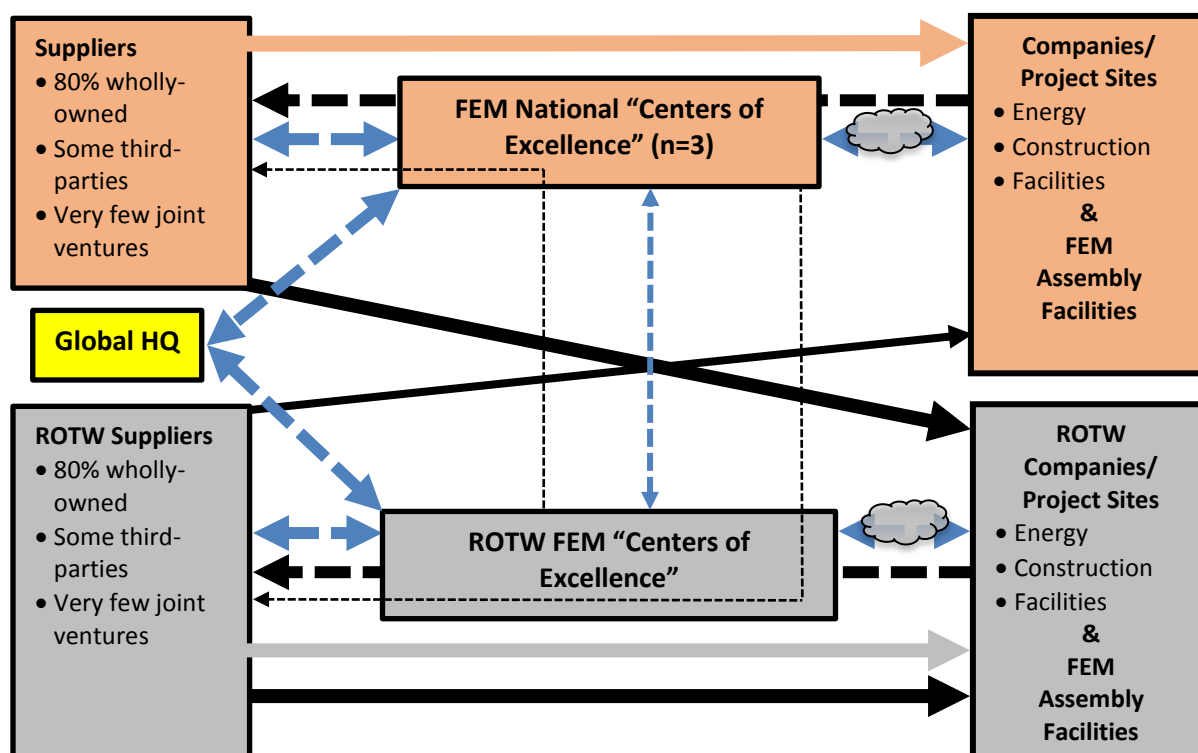
To date, FEM has practised within-nation China sourcing whenever possible, but this has created something of a dilemma. So far, it has been FEM strategy to use the low cost advantages of Chinese suppliers to produce high quantities of substitutable, low-tech components and parts, and to concentrate on *Japan as a source of high-tech supply*. To Chinese officialdom, such a position is construable as cynical: FEM is failing to invest in Chinese companies and thereby depriving Chinese industry of valuable capability. Moreover, FEM appears *not* to be embedding Chinese high-tech supply in its long-term global strategy, despite that strategy having Chinese *demand* at its core.

The dilemma is thus: FEM must maintain its so far positive relationship with the Chinese government and continue to serve its expanding but mainly low- to medium-tech China markets effectively and profitably while continuing to source high-tech products in Japan. Will pressure to switch to Chinese suppliers of high-tech create risk?

FEM has regional and national administrative “Centers of Excellence”, which defer to global headquarters in matters of strategy [S12]. The FEM interviewee assumed that accepted suppliers begin contributing to the supply base *immediately*. FEM suppliers petition their nearest Centers of Excellence for contracts, reply to requests for proposals, or await discovery by FEM personnel seeking specific suppliers.

The FEM SC model contains three basic elements linked by lines of communication and product flow. The left side of the following diagram shows the FEM supply base, from where products flow to FEM’s customers (on the right side of the diagram). Between the two ends is situated the FEM Centre of Excellence, which functions as a national or regional headquarters representing the global FEM entity locally. Communication between suppliers and customers, if necessary, is through the Centre of Excellence. Customers, including FEM-owned factories or assembly facilities, seldom have direct contact with suppliers. The Center of Excellence can thus be considered an interface.

Figure 11 FEM Supplier-Buyer Flows



Legend		
		Flow of orders (unidirectional)
		International flow of goods (unidirectional)
		China domestic flow of goods (unidirectional)
		ROTW to ROTW domestic flow of goods (unidirectional)
		Flow of product design and other information (bidirectional)
		Line thickness indicates approximate volume (thicker line=higher volume)
		Total design/manufacturing/logistics solution (if required)
		Location: China
		Location: ROTW (rest of the world)

#### 4.1.5 China Risk Management I. Logistics

FEM's global capability and long-term China strategy is intensely *supply chain dependent*. FEM is operating a *global* supply chain that is highly *China-dependent*. FEM prefers to contract with Chinese suppliers who are close to FEM's major China markets, and, ideally, located in or around coastal industrial clusters, since these are typically well served by logistics companies and close to ports. Such locations reduce risk related to domestic and international lead time, and suppliers' visibility to FEM staff. For China-side risk reduction, FEM favours within-nation supply to Chinese customers, but the feasibility of domestic supply is contingent upon the

nature of the customer's solution. For several categories of product, international crossflow is typical, and this is perceived as potentially higher risk than within-nation supply.

The practice of within-nation supply also amplifies the advantages of the Centers of Excellence system: FEM global headquarters deputises its Centers of Excellence to manage the suppliers within its borders largely autonomously, but according to group-wide directives. This diffusion of control enables local issues to be resolved by local people, who manage their section of the global supply base in a locally appropriate, adaptive, and intelligent manner. Moreover, regional and national deputisation makes management of FEM's corporate visage the duty of local actors who are, generally speaking, better positioned than expatriate managers to represent the company to its various stakeholders, and to navigate the native business and regulatory terrain. Additionally, maintaining a permanent local presence enables direct interaction with managers at suppliers and frequent interaction with local officials. Deputisation relieves the global headquarters of the responsibility of coordinating hundreds of suppliers worldwide, allowing it to focus on corporate strategy.

For FEM's customers and partners, the FEM supply base is a risk reducer. In the event of SC interruption, continuity can be provided by other nodes (suppliers) in the network. The global crossflow that characterises FEM supply becomes a tool of resilience. Since all FEM suppliers are rated for universal product quality compliance, any FEM supplier can supply any FEM customer. The manufacture of standardised products by a global mesh of rated suppliers provides FEM system-wide resilience to quality risk.

Bidirectional communication occurs between the Center of Excellence and the within-nation supply base. Addressing supply coordination and continuity risk is the responsibility of the Center of Excellence in the region or nation in which an affected supplier is located.

#### 4.1.6 China Risk Management II. Quality

FEM enforces process and product quality across its supply base, principally through a combination of contractually stipulated terms and conditions. Auditing at FEM begins at the selection stage and continues throughout the partnership.

The safety critical nature of many of FEM's core products requires that suppliers build to exact specification. Quality testing is routine and performed on an in-house and external basis. For FEM, quality control constitutes the main source of complexity and cost in the management of its globally dispersed network of third-party suppliers. This is especially acute in the production of safety or performance critical equipment. Failure in fuses and circuit breakers, for example, could result in loss of life, fire damage to property, and long-term reputation penalties.

For this reason, FEM circulates quality control staff among its suppliers of the more critical components. In some factories, one or two expatriate quality control/production experts are present on a near permanent basis.

Until recently, FEM has preferred outright acquisitions over investment in suppliers (both Chinese and non-Chinese). Historically however, *both* activities have been rare. Because quality failure in Chinese supply was, until a few years ago, most effectively resolved by acquisition of the problematic supplier, investment in Chinese suppliers has been extremely modest and acquisition more common. This however is currently under review. FEM is considering trialling more investment in third-party Chinese suppliers as a method of reducing quality risk. This might be due to the rising cost of acquiring Chinese companies, or to FEM's having knowledge or experience of the disadvantages of acquiring Chinese suppliers outweighing the advantages. (The interviewee was reluctant to state which of these two suppositions was the case, but gave indications that the latter explanation was the closer of the two.)

Ensuring third-party, independent Chinese suppliers have complied with quality standards has, in the past, been problematic. The situation has improved, and the interviewee could recall no instances of Chinese quality failure occurring in the last few years. The interviewee described FEM's China supply base as "generally world-class". (This too is possibly explanatory of FEM's waning interest in acquiring suppliers as a quality risk-reducing strategy.)

In addition to insisting on ISO standards, FEM has proprietary in-house quality specifications. For each product design, quality is formally articulated in the engineering specification. Onsite quality checking by a resident FEM representative on the suppliers' premises is *not* unique to Chinese factories. The interviewee stressed that this method has been generally successful in maintaining quality in FEM products regardless of where in the world production occurs.

FEM, because of its global reach, involvement with many of the world's largest construction and infrastructure companies, and the high-volume of the orders it places, wields significant buyer power over its supply base. FEM benefits from its dominance. To meet the standards of a global powerhouse such as FEM, suppliers must demonstrate the capability to manufacture at specified quality levels, consistently and reliably, and in high quantities [S3, S7, S12, S13].

When selecting a third-party supplier, FEM prefer a partner that has an in situ relationship with a local, reliable logistics carrier, has experience in manufacturing comparable products, is receptive to audits and evaluations, and can present verifiable documentation.

FEM's more complicated product offerings comprise standardised components in non-standard forms, i.e. they are often bespoke arrangements of standard parts. The FEM interviewee described his company as an "integrator", that is, an aggregator or designer/assembler of variously sourced components. FEM's designing and testing of customer-specified components constitute FEM's "solutions". Electrical regulations in the country in which the solution is installed constrain FEM's design options, and limit the range of components FEM can use inside its customers' systems. FEM's designs must therefore take into account national electrical standards; the build of individual components must meet or exceed the minimum quality specifications laid down by the authorities in the location in which the product will be used.

FEM's international ubiquity gives the firm a unique selling point in this regard: FEM is expertly familiar with the relevant specifications, constraints, and conventions (formal and traditional) of most countries, and ensures that its suppliers manufacture components that are compatible with region- or nation-specific standards, or internationally compliant. Furthermore, FEM's integrated systems are built for load

and resistance compatibility with FEM components, limiting the possibility of malfunction due to within-system failure. This has advantages for FEM sales and customer retention via service contracts. FEM systems normally remain guaranteed provided any failed components are replaced by FEM components (and by FEM approved, qualified personnel). For this condition to be honourable however, FEM has to ensure that a continuous supply of quality-assured components is maintained.

FEM's system of supply is a pattern of multinational sourcing, integration by FEM at a third-party or FEM factory, or direct shipping of product by the supplier to the client's site. FEM provides very few, if any, collection and delivery services (hence the preference for suppliers who have their own logistics capability), preferring to outsource these on an as-and-when basis in most countries.

*Internal* supply logistics are usually the responsibility of the supplier. In some cases, suppliers can consolidate loads so that logistical economies can be obtained and costs thereby lowered. In various Asian regions, suppliers located in clusters are preferred for this reason. Most industrial clusters in China, for example, are coastal and strongly supported by local and international carriers.

FEM's supply network is characterised by international cross-border crossflow [S4, S13]. For some categories of product, the *extreme* cost competitiveness of suppliers in low-cost regions such as South and Southeast Asia offsets the cost, time, and administrative complexities and risks that result from the geographical remoteness of those regions relative to the end customer.

FEM's international crossflow is made possible by enforcement of contractually obliging quality standards and internal supply chain coordination via regional "Centers of Excellence".

When depicted as a model (see Figure 11), the FEM supply network is straightforward. FEM operates a network of worldwide, rated suppliers that manufacture according to various standards (internal and external) and ship, usually directly, to FEM's customers around the world. FEM engineers design a "solution" based on customer requirements and the electrical regulations in the nation of usage, orders are placed with FEM's suppliers, the orders are fulfilled and components are

sent. FEM technicians perform the installation on site, sometimes in conjunction with electricians working for the construction contractor. Apart from drop shipping, FEM's clients have no interaction with FEM's suppliers. FEM's clients interact only with the FEM Centre of Excellence in their country. Likewise, FEM suppliers interact only with their nearest FEM Centre of Excellence. FEM suppliers have no direct interaction with FEM global headquarters in Paris.

The Centers of Excellence bear responsibility for identifying, evaluating, background checking, selecting, quality control monitoring, compliance auditing, and the general managing of all within-nation suppliers. Similarly, the Centers of Excellence have responsibility for the management of their relationships with their within-nation customers, including identifying business, bidding, problem-solving, contract handling, and solutions design. This deputised/in-country mediated model gives the Centers of Excellence a high degree of business autonomy within the areas under their respective control. The Chinese Centers of Excellence enable FEM to provide localized solutions to Chinese customers via Chinese staff conversant with Chinese business practices and national economic and legal conditions.

## **4.2 Case Study 2 (CS2): Canadian Transportation (Global MNE)**

### **4.2.1 Company Overview**

After Siemens Mobility and General Electric Transportation, Canadian Transportation (hereafter “CT”), the Montréal-based railway subdivision of a Canadian transport engineering conglomerate, is the world’s third largest locomotive and railway carriage builder [B7, B11, B47]. In terms of rail related product diversity, CT is possibly global number one [B7, B17]. Worldwide, CT has 80 production and engineering facilities in 28 countries and a supply network spanning 22 countries [B17, B47]. The company’s core lines are rail vehicles (locomotives and carriages), rail network control technologies, infrastructure electrification, and propulsion components.

CT is a highly technical company that provides a highly bespoke product, usually to governments, secondarily to Train Operating Companies (TOCs). Although lacking public visibility (at least outside Canada), CT is a major entity in the realm of transport engineering. Coincidentally, CT’s largest competitors are the transport divisions of Siemens and General Electric. The manager at CT described his organisation as an “integrator”, and as a provider of railway and transport “solutions”.

### **4.2.2 Internationalisation**

Prior to interview, the interviewee stated that approximately 30 to 40% of CT’s revenue comes from the North American markets. The Asia-Pacific region is somewhere between 25 and 30%, but expected to grow year-on-year [B10, B28]. Western Europe is the company’s third key market, but also where the company faces its strongest competition and restricted growth opportunities due to recent economic conditions in the European Union. The company is looking eastward for its principal growth drivers [B47]. It has entered into cooperative ventures with three major state-owned Chinese railway companies, which are, in terms of sheer numbers of rail vehicles built and mileage of track laid per annum, the world’s largest rail infrastructure and rail vehicle purchasing commercial entities [B7, B28, B39]. The rail industry is unusual in that national authorities generally demand that rail vehicles are built inside the countries in which they are used, but are seldom concerned with *where* the components of rail vehicles are manufactured. This



preference requires CT to locate assembly facilities in the nations where its main products are used, and is often a tiebreaking capability when bidding to national governments for large-scale rail infrastructure and rail vehicle contracts. Provided CT can assemble rail vehicles within the borders of the nation in which those vehicles will be used, quality and the sources of CT's supply remain a matter of CT's internal supply chain arrangement.

#### **4.2.3 Global Supply Strategy**

CT operates a global network of Regional Offices that represent its main markets and sources of supply. CT's supply base comprises wholly-owned, joint-ventures, and third-party entities in 22 nations [B8, B10, B47]. The majority of CT's wholly-owned factories (both in China and other countries) are assembly facilities [B7, B11]. The majority of CT's suppliers (around 80%) however are third-party entities. CT also has a steadily expanding portfolio of globally diffuse strategic acquisitions [B17, B21].

Prospective CT suppliers, in China and other countries, petition their nearest CT Regional Office for contracts [B44]. Alternatively, if a supplier is active in the rail industry, it is likely that CT will be aware of their activity, their customers, and the products it is capable of manufacturing. In such cases, CT may approach an already active supplier and request samples. In most cases however, samples are not required, since the supplier must already be meeting the quality standards stipulated by the national rail authorities if it is manufacturing rail products that are being sold for incorporation in domestically operating vehicles or infrastructure.

Through its network of third-party suppliers, its various joint-ventures, and its portfolio of wholly-owned factories, CT manufactures and commissions a wide variety of components in China for both the Chinese rail industry and overseas rail markets [B15, B23, B43].

#### **4.2.4 China Strategy**

CT has an extensive footprint in China: joint-ventures with three state-owned Chinese rail equipment manufacturers, three wholly CT-owned enterprises, and four Regional Offices (Beijing, Shanghai, Guangzhou, and Hong Kong) [B15]. In total, CT employs around 3000 people in its owned facilities and offices in China [B9, B15].

The interviewee was unsure how many Chinese suppliers CT is using currently, but gave an estimate of 100. For a company that in 2014 posted annual revenues of U\$ 20 billion [B11], CT's investment in its Chinese joint-ventures has been modest: U\$ 38 million for a 50% stake in Changchun Railway Vehicles; U\$ 38 million into CT CPC Propulsion Systems (percentage of stake not given); U\$ 72 million for a 50% stake in CT Sifang Power Transportation [B4, B39].

In autumn of 2015, CT was engaged in 14 projects in Mainland China: seven were rail vehicle manufacturing projects (subways and coach building), five were signalling projects, and the remaining two were automated people moving systems (airport monorails) [B11]. This breakdown indicates the company's continued focus on its traditional core activities, which are locomotive and coach building primarily, and railway infrastructure equipment (manufacturing, installing, and maintaining) secondarily.

CT has a modest interest in supplier acquisition, preferring to bring to bear scale-related enticements such as high-volume orders, association prestige, and long-term arrangements when selecting suppliers and negotiating price. In the case of China, CT is able to leverage two key strengths: its connections with China's government via its joint-ventures [B9, B23, B33], and its technological superiority over competing native Chinese rail industry manufacturers. These strengths provide CT with a strong bargaining position when contracting with Chinese suppliers. The interviewee stated that as long as China's rail companies remain relative technological laggards, this advantageous situation will continue.

Also according to my interviewee, CT in China possesses the enviable position of non-substitutability. CT is deeply, irremovably embedded in the Chinese government's ambitious nationwide rail infrastructure projects [also supported by B24, B30, B36, B39]. CT is also highly attractive to Chinese engineering graduates: CT currently offers better pay and conditions than Chinese companies. CT's competitors in the field of high-speed rail vehicles, particularly Kawasaki of Japan, are less willing than CT to engage with China since allegations of injurious industrial espionage on the part of Chinese partners surfaced in the mid-2000s. CT's long presence in China [B16] and enthusiasm for investment and participation in major

joint-ventures with state owned companies [B10, B24, B35, B39] has gained the company significant credibility in the eyes of the central government. Effective interaction with governments is a crucial part of the rail industry, since the majority of projects are issued and paid for by governments, central and regional.

CT has an enduring relationship with the Chinese government. It has a heavy, deliberate reliance on Chinese supply [B7, B9, B15]: the Chinese government seems to favour companies who source intensively in China.

Sourcing predominantly from third-party Chinese suppliers provides CT with several *long-term* advantages: geographical proximity to a major market, industry prominence and visibility, presence in the world's fastest-growing economy, and general approval (thus far) by the Chinese government, who read CT's endorsement of Chinese supply as a gesture of loyalty, as recognition of Chinese industrial competence, and as demonstrative of a desire to continue helping Chinese industry reach and eventually surpass global standards.

However, CT management believes that the Chinese rail industry will evolve from ally into competitor within 10 to 15 years. By that time, the groundwork for most of China's major rail infrastructure projects will be laid, and China's native rail vehicle building proficiency will be comparable with that of CT and every other major international rail technology company. For this reason, CT is hurriedly and concerted attempting to wring out the returns from its China investments.

In 2015, CT was relishing the following *short-term* benefits of operating a predominantly third-party Chinese supply base:

- ❖ relatively low labour costs;
- ❖ a highly competitive domestic buyer's market that drives down prices of commodities and substitutable product;
- ❖ low overheads as a result of non-ownership of plant and facility; avoidance of tier 2 supplier management costs and complexities (which in China can be formidable);
- ❖ obviation of labour and property related issues;

- ❖ and a favourable power discrepancy that permits selectivity and disposability (assuming continuity of the buyer's market).

CT regard the Asia-Pacific region generally and China particularly as key growth markets and therefore of high strategic significance [B9, B11, B15, B47]. CT uses its supply base and joint-ventures as a beachhead for exploration and involvement in the Chinese market, particularly the growing aerospace opportunities [B25, B27, B28]. Currently, in terms of pure product sourcing, the Chinese supply base functions mainly as a source of acceptable-quality, relatively low cost components, which are bought and installed both locally and overseas at CT's assembly facilities, where they are aggregated with other components and built into infrastructure or local-use rail vehicles.

*Crossflow* characterises the CT international supply network. Products manufactured at a Chinese supplier can be sold or deployed in any country – provided their specifications comply with the requirements of the rail authorities in the country of use. Likewise, products manufactured by third-party CT suppliers outside China can be aggregated into Chinese vehicles and infrastructure at CT factories, joint-ventures, or third-party assemblers in China.

Most of CT's suppliers and joint-venture partners use world-class production technology improved or directly provided by CT. However, the production of *extremely high technologies* is limited to suppliers in a handful of countries, namely Japan, various Western European countries, the United States, and Canada. However, because the technological capability of Chinese suppliers is rising steadily, this situation is likely to change in the near future.

CT offers Chinese suppliers technological and managerial improvements, entry into a global supply pool for rail products, high-volume orders, government connections, a long-term relationship, and the many other sundry advantages of association with a world leading rail technology partner.

CT is building its long-term China strategy around the continuation and deepening of its Chinese supply base, despite management acknowledging that CT's position in the Chinese market will decline as the capabilities of Chinese suppliers and vehicle

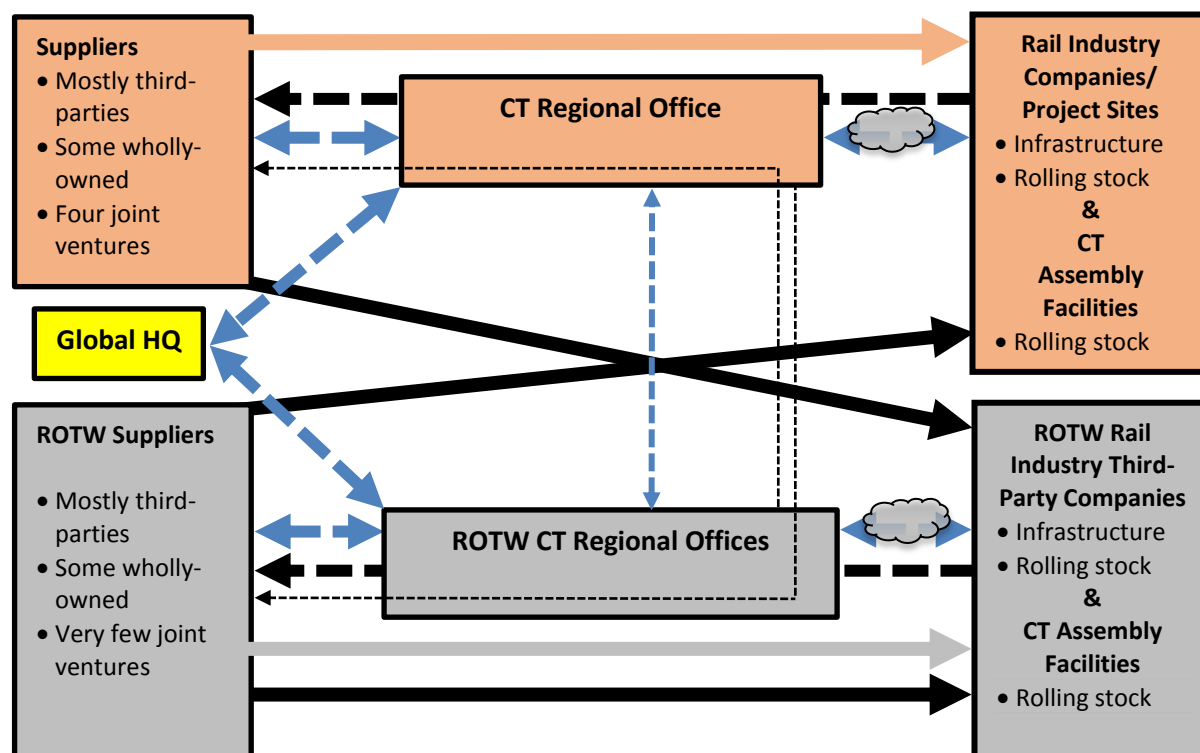
builders improve. Markets in neighbouring countries are expected to grow, and CT envisages their Chinese supply base – due to its high scale production capability and geographical proximity – to become increasingly elemental in SCs serving the rail needs of various emerging Asian markets [B7, B28, B47]. Chinese supply – provided the relatively low costs of labour continue – will contribute to CT's competitiveness in the steadier markets of developed countries too. Also, the potentially vast growth that the Chinese market represents is such that CT envisions high returns from the capture of even a modest share of the Chinese rail technology market, and is for this reason continuing to invest and source in China. CT is addressing *Chinese demand with Chinese supply*, and performing China market-specific research and development *in China* [B, B15].

In sum, Chinese supply is crucial to CT's formula for meeting both local and global demand, in both the present and the future.

It is unofficial CT policy that projects are supplied within-nation whenever possible and profitable. In the case of rail vehicle building, within-nation provision is usual according to industry convention and public expectation; in some cases, it is a formal contractual condition. However, because not all rail industry products can be sourced inside China (or any other country), a degree of transnational crossflow of products is unavoidable, commercially and practically rational, and an inevitable outcome of global supplier dispersion. In the case of substitutable products in high volumes, lower cost may trump proximity to market or within-nation status. If, for example, a Chinese supplier can provide a basic, non-critical item for use in a North American project at significantly lower per-unit cost than the North American supplier, the Chinese supplier will normally receive the order, provided the transaction costs do not erode the price economy and that the extended lead time does not impact the schedule unduly. When depicted as a diagram (following), CT's global SC operations comprise three straightforward elements: a global supply base, Regional Offices handling regional sales and suppliers, and an end customer (typically a government

or a rail vehicle-building rival). Figure 12 (following) shows CT's supplier-buyer crossflows.

*Figure 12 CT Supplier-Buyer Flows*



Legend		
		Flow of orders (unidirectional)
		International flow of goods (unidirectional)
		China domestic flow of goods (unidirectional)
		ROTW to ROTW domestic flow of goods (unidirectional)
		Flow of product design and other information (bidirectional)
		Line thickness indicates approximate volume (thicker line=higher volume)
		Total design/manufacturing/logistics solution (if required)
		Location: China
		Location: ROTW (rest of the world)

For CT's customers and suppliers, the CT Regional Office is the one point of contact [B9, B14]. The most intensive bidirectional communication occurs between Regional Offices and their within-nation supply base. In common with the other MNEs presented in this research, CT places responsibility for supplier risk on its Regional Offices. Each Regional Office monitors its within-nation suppliers for quality and compliance [B18, B16]. CT's global office assigns responsibility for customer relationship management, supplier management, public relations, and all other

region- or nation-specific functions to its Regional Offices. Communication between Regional Offices occurs when customer interests are transnational, SC failure has occurred, and when information about suppliers is required. CT's Regional Offices defer to global headquarters in matters of strategy and policy. CT's suppliers are international from outset, serving markets both domestically and overseas. Many locomotives and carriages, for example, comprise standard components that meet or surpass the quality standards of most national rail authorities. Control systems and high-speed rail technologies can be highly specific to project [B30], so not exported from China, where most suppliers are manufacturing low to medium tech products.

Although *some* high-tech is manufactured by Chinese suppliers, the majority of cutting edge, highly innovative technologies remain manufactured by suppliers elsewhere. (The interviewee was evasive on the issue of why very few of CT's higher-tech products are manufactured in China, despite the Chinese government's simultaneous commissioning of several of the world's largest high-speed rail projects [B22].)

For CT, contracting with the larger Chinese suppliers and participating in joint-venture partnerships decreases very specific forms of risk related to government and market. CT's proximity to the Chinese government and allows the firm to harness native know-how regarding logistics, business network management, tier 2 supply management, and the various channels of resource acquisition.

#### **4.2.5 China Risk Management I. Logistics**

For CT's customers, within-nation supply represents risk reduction in the form of lead time punctuality. Importantly, various legal, regulatory, communicatory, and logistical reassurances also result from dealing with local companies.

Furthermore, CT's *global* supply network functions as a powerful *complement* to local sourcing: in the event of local supplier failure or disruption to local SCs, CT's network of suppliers overseas offer continuity through redundancy. This is likely facilitated by CT's enforcement of minimum quality standards on all its suppliers of basic, interchangeable products. This global crossflow capability thus functions as a business-attracting tool of SC resilience/risk reduction.

Within-nation supply is made possible through and harnesses the advantages of the autonomous Regional Office [B4, B7, B9, B12]. The in-country mediation/deputisation of control allows local people to manage local companies according to local ways. When dealing in China with officials from both central and local governments, this practice assumes great importance. Regional and national deputisation makes management of CT's corporate countenance the responsibility of local Chinese people who are more likely suited to managing the company's relations with its Chinese stakeholders than, say, expatriate managers in China or non-Chinese managers in a distant overseas central headquarters. The advantages of delegating the management of the Chinese supply base to the China offices can be summed up in two words: proximity and sensitivity.

CT operates SCs based on multinational sourcing and integration by CT factories and facilities local to project sites [B8, B45, B46]. Via suppliers, CT usually ship very large orders directly to project sites, since this saves both time and logistical cost. Logistical operations are outsourced to internationally active and industry-experienced third-party transport companies (or carriers appointed by the Chinese government). Whenever possible, CT customers are provisioned by *local* SCs. Decisions to initiate and/or continue international crossflows (and bear the costs and complexities of managing those flows) are based on the profitability of the trade, the nature of the demand (volume and duration), and the availability of within-nation suppliers.

#### **4.2.6 China Risk Management II. Quality**

The interviewee had little to say about quality risk: CT's universal enforcement of quality standards [B18, B44] means that in the cases of most products, most suppliers are able to supply most markets.

Supplier identification, contracting, quality management, auditing, and conditional admission to the global CT supply pool are the primary tools of risk management used by the Regional Office. The Regional Office also bears responsibility for managing its within-nation customer base, so influences both supply- and demand-side risk. All four multinationals presented in this research operate a regionally



deputised, in-country mediated system of both customer and supplier risk management.

The CT SC model comprises three basic sections linked by lines of communication and product flow. Between supplier and customer sits the CT national or Regional Office, which represents CT to customers and manages CT's suppliers within that nation or region. Communication between suppliers and customers, if necessary, is through the relevant Regional Office. Customers, including CT's wholly-owned factories and assembly facilities, rarely have reason for communication with suppliers directly. CT's Regional Offices can thus be considered double-sided interfaces, looking back to supply and forward to demand.

CT's customers can request design assistance from CT's engineering experts. CT describes this service flexibility as a "design provision solution". Once defined and approved, designs are transferred to suppliers for manufacturing. Initially, small production runs are commissioned so that the output can be tested for appropriate quality. Production is either continued or discontinued pending quality testing. This way, the customer receives product whose quality is assured.

At key suppliers and wholly-owned plants, an ex-patriot expert will typically be working alongside a native Chinese manager. CT considers its native Chinese managers a vital asset, since most are bilingual and foreign educated, and all are qualified, rail-specialising engineers. Worldwide, if the number of suppliers producing a critical component exceeds the number of experts, CT rotates its experts so that each supplier of safety critical components is routinely visited. Routine quality checking is also performed at CT assembly facilities, where SCs converge. CT will also dispatch engineers and production managers on an *ad hoc*, firefighting basis in response to quality failures or production efficiency issues at suppliers.

CT entrusts responsibility for tier 2 quality management to its tier 1 suppliers. In the case of China, this appears to be a sensible strategy, because CT management believe that few foreign organisations can navigate with comparable proficiency the conditions, regulations, and networks that characterise the Chinese business

environment generally and the highly government-influenced steel and rail industries especially.

CT enforces strict process and product controls on its suppliers [B18, B44]. In addition to in-house standards and quality control, CT suppliers must also ensure their products meet the material and performance requirements of the particular rail authority in which the products will be used. Usually however, CT's internal specifications satisfy or exceed these requirements.

CT will actively seek suppliers capable of manufacturing specific products. However, the supply base for rail products is far smaller. CT typically knows which suppliers are supplying its rivals, and in the case of suppliers of highly sophisticated products, will attempt acquisitions and enter joint-ventures [B11, B36] to secure own supply and wrest away a competitor's source. The industry of rail supply, because its products are strongly regulated, specialist, and subject to stringent quality controls, is smaller and more visible than less technical supply industries. This gives rail industry suppliers a degree of bargaining power with buyers that is not enjoyed by suppliers of less regulated or commodity status products.

CT places China at the centre of many of its globe-spanning SCs. The interviewee acknowledged that CT's long-term fortunes in China, i.e. CT's China strategy, is intensely dependent on maintaining and, ideally, expanding the Chinese supply base in response to the Chinese and global market appetite for rail products. CT operates a global supply network that is heavily China-reliant. In China, probably due to the Chinese government's enthusiasm for state-owned enterprises and the possibility of economically advantageous spillovers, supplying Chinese customers with China-made products garners approval from the authorities.

CT's Regional Offices handle supply and logistical issues related to the within-nation suppliers for whom they have responsibility. The CT system of international supplier management is thus deputised and largely autonomous.

Despite (or perhaps because of) the highly regulated nature of railway products, railway technology is, for the most part, low risk. It is generally understood, seldom

subject to revolutionary innovation surges, and, due to the general inertia of rail regulation, not vulnerable to rapid or disruptive revisions. Most innovation is related to drive/propulsion systems, electrical distribution, vehicular stability, energy-saving, and network management. Rail, ties, ballast, rail-laying machinery, cables, signalling, vehicle interiors and exteriors, bogeys, axles, and non-high-speed power systems are fairly stable technologies that rarely undergo major change (Bonnet, 2005). Thus, the majority of rail products are to some degree substitutable. In terms of product, differentiating capability typically comes in the form of software and high-speed rail vehicles. Fortunately for CT, China's interest in the latter is great and CT's capability in both is also strong [B22, B36, B42, B43].

All CT's suppliers are ISO certified. CT's supply base for substitutable items is far larger than its supply base for cutting edge, high-tech products. Competition between suppliers inside the CT supply base is therefore restricted to low to medium technology products. Compared to the other three large multinationals, CT's supply requirements are more specialist in nature. This specificity gives a subset of CT suppliers distinct bargaining power. In its favour however, CT has its global presence, prestige, research and development capability, and, due to its strong business legacy, close relationships with the rail authorities of many of the world's richest countries – advantages that for suppliers represent potentially high volume orders, technology transfers, investment, and mergers and acquisitions with stronger, globally active entities.

In the following chapter, the findings of six industry key informant interviews (two MNE managers and four UK SME managers) will be shown.



## 5. Industry Key Informant Findings

Findings from the six industry key informant interviews are presented in this chapter. Two key informants were MNE managers; four were UK SME managers. All six provided details on their companies' supply strategy, China strategy, and risk management.

### 5.1 Industry Key Informant 1 (IK1): Swedish Furniture Manufacturer (Global MNE)

#### 5.1.1 Company Overview

Swedish Furniture Manufacturer (hereafter "SFM") retails furniture and other domestic-use goods through 350 stores in 47 countries, stocking around 10,000 standard products at each facility. Regional distribution centres serve the country of location and surrounding markets. Control decisions and strategy occur at the global headquarters in Stockholm and are relayed downward through the company's various regional and national headquarters.

National headquarters are tasked with the implementation of policies, practices, and directives issued from the global headquarters, specifically from "the family", whose members constitute the majority of the board. The SFM corporate structure can therefore be described as *centralised*. Regional and national headquarters have autonomy *only* in supplier selection. Suggestions for strategic, market-specific manoeuvres, and proposals for suppliers of major categories of product are issued by a national or regional headquarters, but approval is the decision of the global headquarters.

#### 5.1.2 Internationalisation

SFM's management regard China as a major growth market, and have plans for at least 20 more stores in mainland China. Chinese suppliers have so far proven capable of servicing both domestic and foreign markets. Hence, the case for continuing Chinese supply is strong, and made stronger by the cost and complexity savings intrinsic to Chinese supply and SC within national borders. Corporate strategy is currently (2015-2022) focusing on increasing the number of retail facilities in China and India.

### **5.1.3 Global Supply Strategy**

SFM's manufacturing is done by a network of approximately 1100 suppliers located in 52 countries. Quality in both product and processes across the supply base is regulated by a set of in-house standards, procedures, quality controls, and second tier supplier engagement conditions and protocols. This collection of regulations is formally articulated in a body of contractual standards known as the "S-Way". Only suppliers that contractually commit to cohere with S-Way standards can become first-tier SFM suppliers. Most suppliers are third-party; about 20% are under the management or direct ownership of "S-KANO", an SFM subsidiary that specialises in insurance, property, and financial products. All suppliers are regulated by "S-Way".

Since the majority of SFM products are modular (typical furniture products are constructed from materials that differ in configuration and dimensions, and in grade not substance), the level of necessary machining sophistication is modest, making the number of potential suppliers great. SFM, according to this interviewee, finds the supply base a "buyer's market", so is able to select from pools of candidate suppliers and secure low prices.

Furniture, the core product line, is highly modular, to allow assembly by unskilled customers. For the manufacturer, modularity simplifies production. In terms of setup, the commonality of product components (screws, plugs, chipboard) means that manufacturing of different models requires only the reconfiguration of machinery.

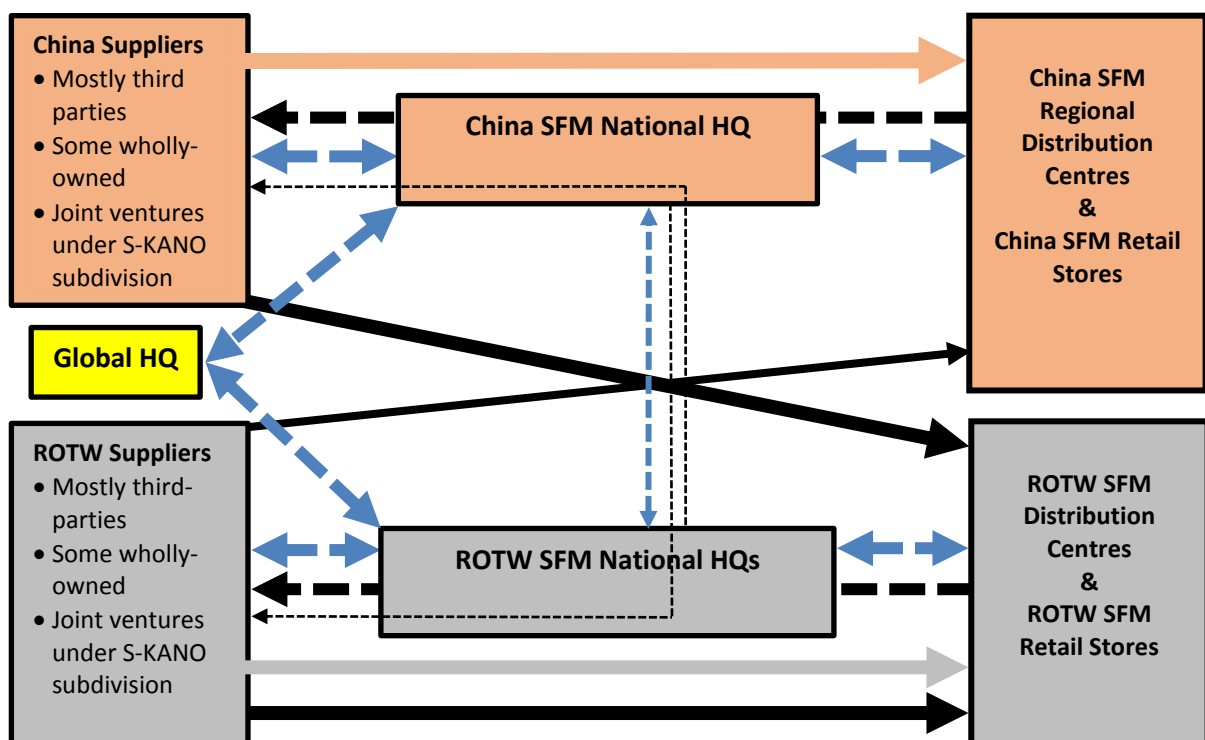
The company's key products are rearrangements of common materials. This absence of uniqueness simplifies both procurement and production.

### **5.1.4 China Strategy**

The interviewee claimed that although most products sold by SFM in China are China-made, a minority come from overseas. This crossflow is necessitated by the relative costs and differentiating capabilities of suppliers. All things being equal, SFM favours suppliers who are closest to the most active markets. The dispersed nature of the supply base applies competitive pressure on all suppliers, and elevates the importance of compliance (this might explain SFM's enthusiasm for "S-Way").

SFM's China strategy is critically dependent on SC configuration decisions. Currently, close-to-market suppliers operating in locations that are logistically favourable are preferred. Suppliers operating close to regional distribution centres present lower logistical costs and lower complexity than distant suppliers. When capabilities are equal, the nearer supplier is favoured. SFM's business model is highly supplier intensive; thus, locating the supply network as close as possible to the market is rational and logical. Figure 13 (following) shows SFM's buyer-supplier crossflows.

Figure 13 SFM Buyer-Supplier Flows



Legend	
	Flow of orders (unidirectional)
	International flow of goods (unidirectional)
	China domestic flow of goods (unidirectional)
	ROTW to ROTW domestic flow of goods (unidirectional)
	Flow of product design and other information (bidirectional)
	Line thickness indicates approximate volume (thicker line=higher volume)
	Location: China
	Location: ROTW (rest of the world)

### 5.1.5 China Risk Management I. Logistics

Top management regard risk in China logistics (domestic and foreign-bound) systems as no more significant than in any other market. The concept of China risk management is in adapted little from the standard model, which is one of national

and regional distribution centres intelligently forwarding inventory to retail branches or overseas distribution centres in response to sales. Like elsewhere, Chinese suppliers will, in some cases, ship certain categories of product directly to the retail-warehouse branch, bypassing the distribution centres. Established product lines, and furniture in particular, are predominantly replenished from a distribution centre. In the event of a customer order not being fulfilled from branch inventory directly due to stock out at the nearest local branch, supplier drop shipping can occur, or delivery may be from a third-party logistics provider contracted by the local branch.

Because China is the single largest country of supply within SFM's global supply network, logistics management is a major activity at the China headquarters. Main activities include logistics company vetting, communications, and flow monitoring. Outside China, selection of third-party logistics providers is typically the responsibility of local branch management, but in China (and other major emerging markets where demand is high but supply can be erratic and not of uniform standards), a particular set of preapproved logistics companies is recommended by the national head office. The level of central involvement in the case of SFM's logistics in China is thus far greater than in other countries or regions. Due to the level of logistics-related work being higher than in other national headquarters, and to the strategic importance of China in the SFM supply network, the China national office has far higher levels of resources and expertise dedicated to logistics activities.

he method appears to have been successful: since commencement in 2010, purely logistical failures, such as unpunctuality and incomplete orders have been rare occurrences. The preferred Chinese logistics partners are technologically modern, so provide SFM's China headquarters with visibility of transit progress and vehicle dispatch.

#### **5.1.6 China Risk Management II. Quality**

The enforcement of S-Way raises supplier capabilities and competencies, and qualifies a supplier's products as appropriate for retail across the entire international SFM consumer base. Within-China supplier selection is the responsibility of the China national headquarters, and performed in accordance with SFM's globally standardised protocols of vetting and due diligence. Once a supplier is rated worthy,



is formally contracted to supply according to S-Way conditions, and has demonstrated competence as a within-nation supplier for the duration of a specified evaluation period, that supplier receives an international rating and begins fulfilling international orders. Each national headquarters takes responsibility for the quality of the suppliers inside its respective national borders.

The approach to quality risk management in Chinese supply is functionally identical to the global supply management approach.

However, as with logistics quality, central involvement in the China supply quality is higher than in other countries. Main activities include supplier background vetting, certification vetting and enforcement, communications, auditing, kaizen, and quality and compliance monitoring. At the China headquarters, more resources and personnel are dedicated to management of supplier quality than at any other national or regional SFM headquarters. This is because Chinese supply is critical to the *global* SFM competitiveness formula, and because the *Chinese domestic market* is envisaged as a major growth driver that will increase in importance in the coming decades.

## **5.2 Industry Key Informant 2 (IK2): American Food Conglomerate (Global MNE)**

### **5.2.1 Company Overview**

American Food Conglomerate (hereafter “AFC”) is the world’s thirteenth largest food processing company. Its core products are food and beverage ingredients.

Specialities include pharmaceuticals, livestock management, food related industrial products, financial services, logistics and transport, energy technologies, agricultural technologies, animal feed, bio-industrial chemicals, farming services, and human personal care products. AFC operates in 68 countries and employs around 155,000 people. AFC’s ownership remains firmly in the hands of family members.

### **5.2.2 Internationalisation**

AFC began concerted internationalisation in the early 1980s, with the commencement of large-scale operations in Western Europe. Currently, its main markets are North America, Western Europe, and East Asia, with the last receiving

the greatest strategic attention. The global dispersion of its suppliers has been expanding in rough proportion to the global ubiquity of its markets and customers. East Asia is a location of strategically vital, growth-driving concentrated markets, and the location of key supplies and suppliers. The company's internationalisation – of both markets and supplies – reflects global changes in macroeconomic wealth and the expanding range of goods and services demanded by diverse markets.

The AFC supply network is characterised by international cross-border crossflows. Although within-nation suppliers are generally preferred, not all commodities and products can be sourced in-country. AFC enforces universal quality standards to ensure that any supplier's produce or product is acceptable to any of AFC's customers – whether they be internal supply chain participants or external customers. These factors create a network of intersecting flows and high redundancy.

### **5.2.3 Global Supply Strategy**

AFC's supply base is spread across 68 countries. AFC suppliers are typically independently-owned farms, livestock processors, slaughterers, crop growers, and other food processors and packagers. AFC owns very few resource providers outright, but has instead an extensive portfolio of internationally dispersed food and beverage ingredient processing plants.

Throughout the supply base, both product and process quality is ensured by the contractual stipulation of terms and conditions. AFC grants its suppliers autonomy in tier 2 decisions. However, because AFC's core products are food- and beverage-related, hygiene and sterility are essential to quality so are heavily regulated to satisfy minimum national and international legal and industrial standards. AFC places responsibility for supplier selection with the relevant national headquarters. The vastness of AFC's operations necessitates this deputisation.

AFC has very limited interest in supplier acquisition, preferring to leverage its high-volume purchase requirements in the market in order to secure the cost reductions that typically accompany extreme high-volume orders. AFC policy favours *group-wide bulk purchases* for maximisation of scale economies. This limits the autonomy of regional AFC offices to exploit economies offered by local suppliers. Group-wide,

*en bloc* buying followed by bulk breaking and distribution is the superior economic strategy. According to the interviewee, this approach gives AFC a dominant position in several vital markets and favoured status with multiple major suppliers.

Purchasers in regional headquarters or offices must apply to global headquarters for permission to procure with local purchasers.

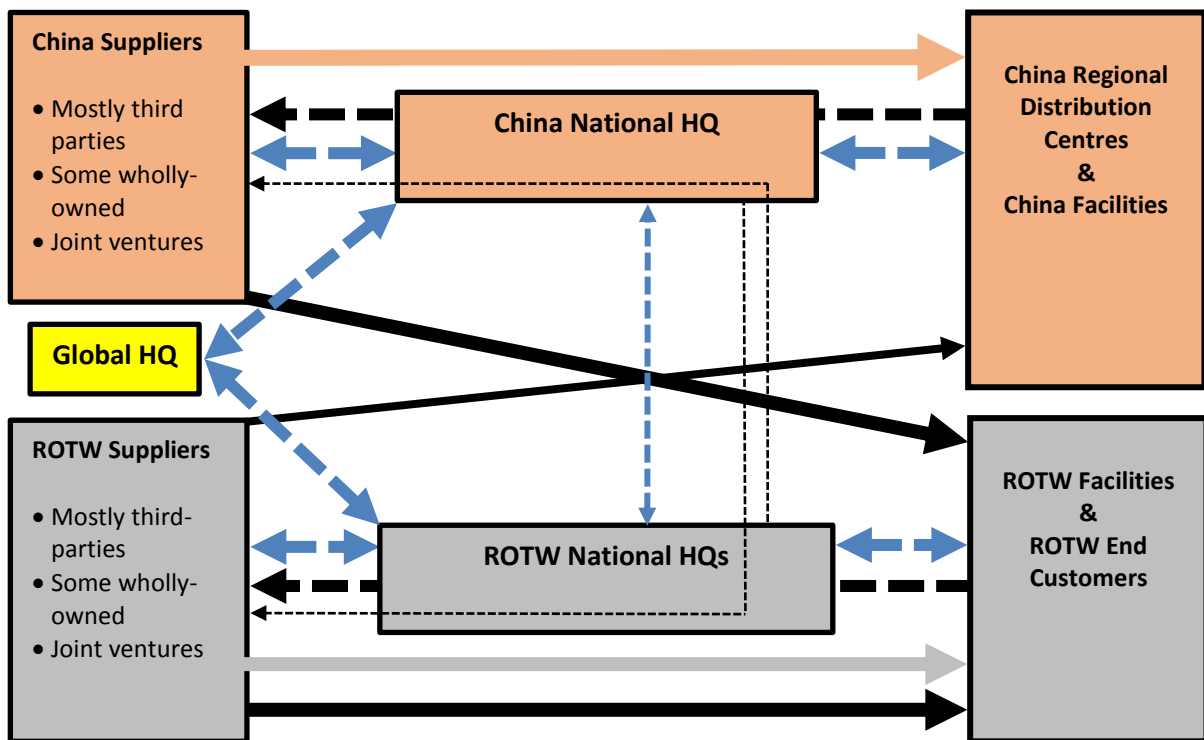
#### **5.2.4 China Strategy**

AFC regards China as a market of growing importance and as a supply base of extreme potential, so is steadily enlarging its presence in the country. The AFC ambition is to select Chinese suppliers in order to reduce the logistical and regulatory complexities of moving high bulk food and beverage ingredients across borders. Currently, AFC's Chinese customers receive AFC product from both within and outside China. This is the general global case. Only North American customers have the majority of their ingredients sourced relatively locally.

For Chinese suppliers, contracting with AFC has advantages: order stability and quantity, technological upgrading, and the possibility of entering lucrative networks of local suppliers. In China, government (central and local) encourages multinationals to trade with Chinese suppliers as much as possible.

In its lines of machinery and other industrial-use equipment, AFC can provide customisable solutions from its network of factories, many of which are located in China (the interviewee was uncertain of the percentage of production that Chinese manufacturing represents, but indicated that China is the source of several important industrial use machines).

Figure 14 AFC Supplier-Buyer Flows



### 5.2.5 China Risk Management I. Logistics

AFC's China strategy is highly *SC-dependent*, and AFC's *global SC* capability is highly *China-dependent*.

AFC's procurement decisions favours within-China supply whenever possible. Close proximity between supplier and customer reduces lead times and logistical risks. Suppliers located in or near clusters, particularly Chinese coastal clusters, are more attractive to AFC than cheaper inland suppliers. Moreover, the local presence of AFC staff enables direct interaction with managers at suppliers.

AFC have little to no involvement in the logistical operations of their China suppliers. As a precondition of contracting, suppliers are required to demonstrate autonomous

capability in logistics. AFC China prefers suppliers who have contracts with known-good logistics providers.

#### **5.2.6 China Risk Management II. Quality**

So far, AFC has practised local sourcing within China, but has made significant technological contributions to several Chinese suppliers, especially suppliers of machinery. Ensuring that Chinese suppliers routinely adhere to AFC's own and international quality standards has, in earlier years, been a costly and challenging undertaking. AFC's purchasers today report few incidents of quality failure that are directly attributable to technology or proficiency lag in Chinese suppliers.

New suppliers petition their nearest AFC headquarters for contracts, respond to requests for proposals through formal bidding processes, or be discovered by procurement personnel from their national AFC headquarters. New Chinese suppliers are accepted into the international supply pool once the China national headquarters has completed a formal evaluation and proofing process and found the supplier capable and competent.

AFC dispatches production engineers and quality control staff to inspect premises, licences, certification, and samples of product. Dun and Bradstreet may also be subcontracted by AFC to perform background checks and other forms of due diligence on prospective suppliers. New suppliers begin by supplying within-China buyers or AFC-owned facilities. After a specified period elapses without significant quality decline or negative incidents, the supplier earns entrance into the international pool and can commence contributing to AFC's global supply network.

AFC deputises its China headquarters to manage Chinese supplier risk – logistics- and quality-related – within national borders autonomously, *but in accordance with group-wide directives*. This spreading of control allows local people to resolve local issues, and to manage the supply base in a locally responsive, sensitive, and intelligent manner. Moreover, it places responsibility for AFC's local presence in the hands of local actors who are better equipped to navigate the local business and regulatory environment than psychically and geographically distant actors.

Communication in the AFC model is most intensive between national headquarters and national supply base (see Figure 14). Complaints about quality or logistical failures are managed by the AFC headquarters in the country where the produce or product originated. This way, the advantages of proximity and local knowledge can be brought to bear on the issue and the risk of repetition or ripple effects thereby better contained.

### **5.3 Industry Key Informant 3 (IK3): Direct2Customer (UK SME)**

#### **5.3.1 Company Overview**

Direct2Customer (hereafter “D2C”) supplies clothing to British retailers, brands and football clubs. D2C specialises in knitwear but can supply most forms of garment.

The essential business model (in marketing terms, the unique selling point) of D2C can be deconstructed thus:

- ❖ secure relationship with a network of proven capable manufacturers;
- ❖ long-term, stable relationship with one of the world’s largest clothing manufacturers;
- ❖ service and price competitiveness;
- ❖ simplified/assisted design submission process;
- ❖ simplified/assisted logistical processes;
- ❖ expertise in fashion design and retail;
- ❖ engagement with both Chinese clothing manufacturer networks and British fashion retail networks;
- ❖ bilingual/bicultural capability and near-permanent presence in China (reassures customers that troubleshooting will be capably performed); and
- ❖ head office in Cheadle, Greater Manchester, so accessible and verifiable to UK firms.

#### **5.3.2 China Strategy**

D2C do not manufacture. Most of the designs required by their bigger customers are manufactured by Jinping Zhejiang Garments Company Limited (Pinghu, Zhejiang, China) – a single, very large factory supplying big retailers and brands worldwide (such as Japan’s Uniqlo label/retailer).

For its smaller customers (lower English league football clubs), D2C provides whole package solutions. Such solutions include design proposals. Customers accept or reject the proposed designs, or suggest modifications. Customers then specify the quantity they require and a calendrical window for receipt of the order.

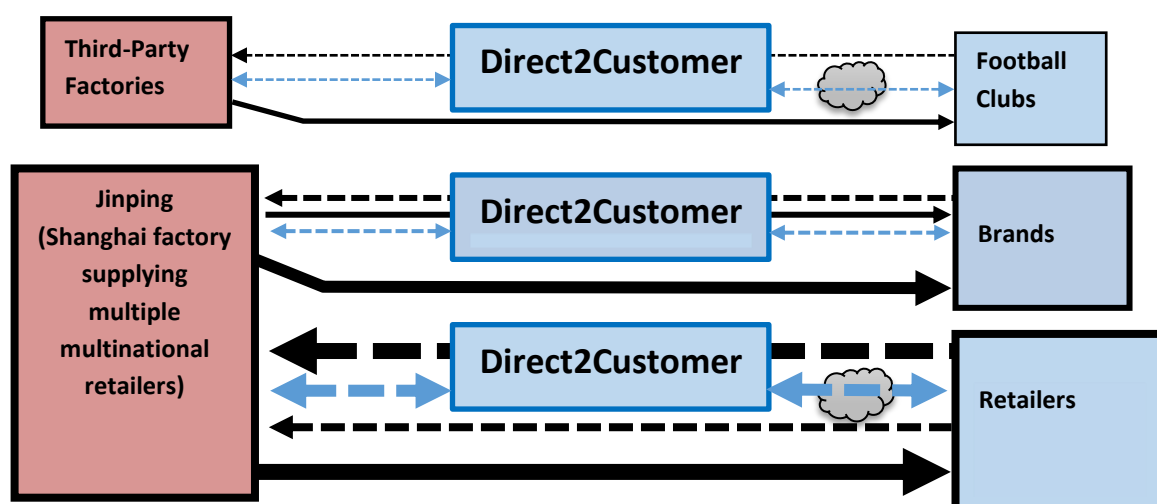
D2C has distinct scale preferences. Retailers place large orders that maximise scale economies by utilising the strength of Jinping, which is D2C's main and preferred supplier. Jinping is a *very* high volume-oriented manufacturer. Low volume orders thus reduce the possibility of Jinping maximising its economies of scale and therefore lowers D2C's profits on the transaction. Table 13 summarises the relative requirements of D2C's main customers.


*Table 13 D2C Typical Customer Requirements by Category*

Customer Category	Typical Requirements		
	Order size (volumes)	Design assistance	Logistics assistance
Football clubs	Very low	Very high	Very high
Brands	Low to medium	Low	Low to medium
Retailers	Very high	Very low	Low to very low

Figure 15 describes D2C's essential business processes in terms of the flows between customers, D2C, and suppliers.

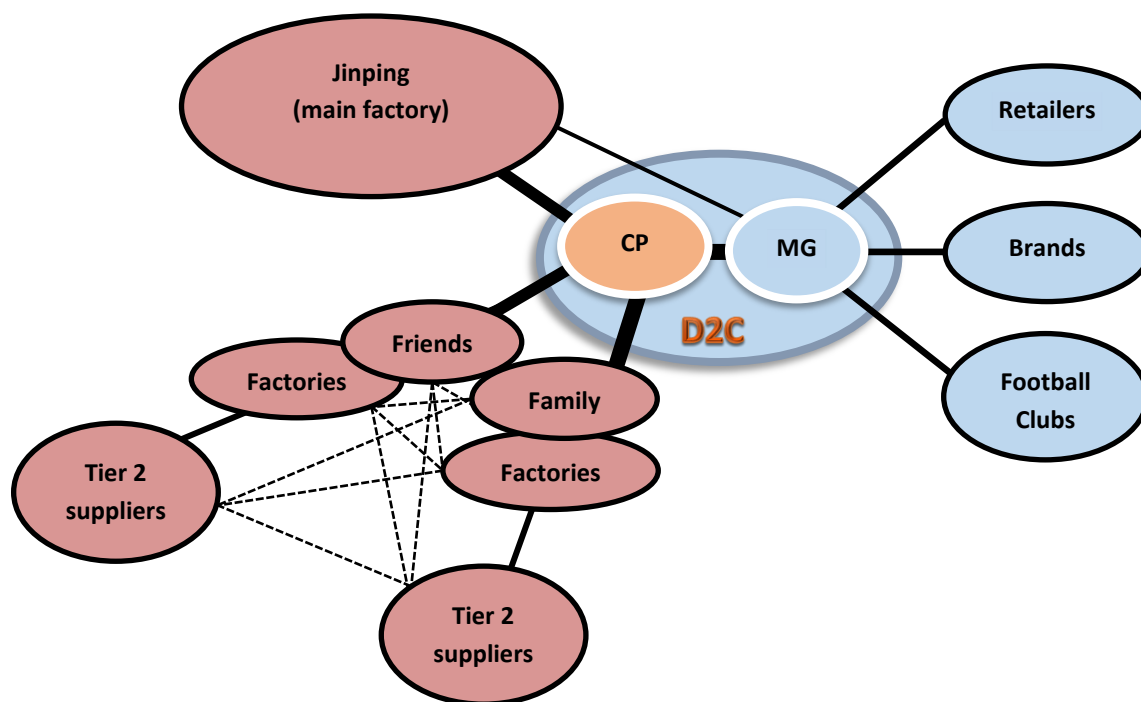
*Figure 15 Direct2Customer Supplier-Buyer Flows*










Legend	
	Flow of orders (unidirectional)
	Flow of goods (unidirectional)
	Flow of product design and other information (bidirectional)
	Line thickness indicates approximate volume (thicker line=higher volume)
	Total design/manufacturing/logistics solution (if required)
	Location: UK
	Location: China

When mapped in rudimentary *sociographic* terms (Figure 16), D2C appears to be a meeting point of its two managers' networks: MG's network of UK buyers and CP's network of Chinese suppliers. Through D2C, MG has access to CP's network, and vice versa.

Figure 16 Direct2Customer Sociograph



Legend	
	Tie thickness (thicker line=stronger tie)
	Tie length (Shorter line=higher frequency of direct communication)
	Possible ties (inferable)
	Location: UK
	Location: China
	Key China Person: CP (manager, Chinese, UK-/China-based)
	Key UK Person: MG (manager, British, UK-Based)



D2C exhibits a degree of functional symmetry: both networks represent reflective suites of expertise and resources that either manager can access via his counterpart. MG and CP operate as front- and back-end managers, respectively. MG interfaces with UK; CP, who is ethnically Chinese, Mainland China-born, and who graduated from a British university in a design-related discipline, manages the China-side, back-end supply network.

Both MG and CP communicate with Jinping, but since CP is the more regular visitor and the more linguistically capable, CP's ties with Jinping are stronger than MG's. CP's family and friend networks provide D2C with supply options outside Jinping. These third-party factories are nimble. They can supply MG's smaller customers and produce low quantity runs more cost effectively than Jinping. They also reduce risk by providing extra capacity and redundancy.

CP is D2C's *key China person*. His connectedness and capabilities constitute D2C's core China risk-reducing assets.

### **5.3.3 China Risk Management I. Logistics**

When the client signs an order, D2C forward the order to one of their suppliers in China. D2C also organises delivery, which is typically from supplier directly to the customer's premises via an international third-party logistics provider. On occasion, D2C have contacted logistics companies to ascertain progress of shipped items. In the event of Chinese language necessity, CP (the ethnically Chinese and Chinese-speaking partner) has contacted the China offices of the third-party logistics provider.

Brands and larger retailers usually operate their own accounts with major international logistics firms. In such cases, D2C only place orders with their Chinese suppliers and provide the customers with a date for collection at the factory gate in China. The customer's own logistics provider then performs the collection and delivery. D2C have experienced very few instances of unpunctuality and delivery failure so consider logistical risk a minor matter at most.

#### 5.3.4 China Risk Management II. Quality

The supplier-buyer flows reveal that D2C functions as a buyer-to-supplier-facilitating *intermediary* performing three roles: back-end supply management and support (quality control, cost monitoring, schedule control, etc.); intermediary facilitation (communication with buyers and suppliers); and front-end enablement (opportunity creation, customer relationship management, and total solutions provision).

The quality in large orders is assured by partner credentials. Jinping is a world-class supplier of many international brands and retailers. Jinping quality is as high as can be obtained anywhere for mass market garments. For smaller orders, D2C (via CP, the Chinese partner) achieves quality control by manufacturing at factories that are directly owned by CP's family, friends, and hometown peer network. Both CP and his manufacturers have a reputational and financial stake in quality achievement. CP is in constant communication with both manufacturing bases. Both CP and MG visit and communicate with Jinping several times annually; CP is in contact with his family and peer manufacturing network daily.

D2C have had very few cases of quality failure, and use their customers' testimonies on this matter when pitching to supply new customers. They argue that their prices are higher than China-sourcing suppliers of comparable product because they use known-good, proven capable and reliable partners and refuse to buy on price. According to D2C, China sourcing can be *extremely* low cost if buying is on price, but the quality of product thus sourced is likely to be inconsistent at best. D2C seek to differentiate on the basis of service, which would be compromised by price buying.

## **5.4 Industry Key Informant 4 (IK4): OEM (UK SME)**

### **5.4.1 Company Overview**

OEM Engineering Limited (also trading as “OEM Electrical Components Limited” and “OEM Appliances Limited”, but hereafter “OEM”) supplies high-end hobs and ovens to luxury UK brands and catalogue companies, medical refrigerators to the NHS, and unbranded white goods to UK retailers. OEM provides a one-stop, integrated design, manufacturing, and logistics solution. Manufacturers perform to international standards, as articulated in the relevant EU and ISO standards and/or manufacture to the customer’s bespoke specifications.

The OEM essential business model (in marketing terms, its unique selling points) can be deconstructed thus:

- ❖ direct ownership of a proven capable factory;
- ❖ strong portfolio of well-known household and luxury brands;
- ❖ strong quality control;
- ❖ turnkey product development solutions: product is designed to order, manufactured, and delivered;
- ❖ simplified logistics;
- ❖ product design expertise;
- ❖ production and shipping monitoring;
- ❖ direct business connections inside China;
- ❖ deep experience with Chinese business, European retail, appliance engineering, design, and marketing;
- ❖ bilingual/bicultural staff with frequent presence in China (reassures customers that troubleshooting will be capably performed);
- ❖ proven consistency with delivering quality prestige goods to well-known high street retailers;
- ❖ based in Old Trafford greater Manchester, so accessible and verifiable to UK firms.

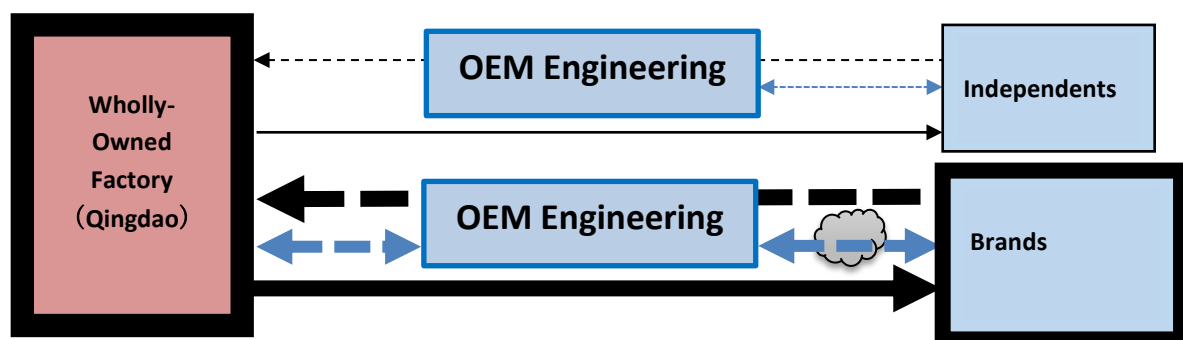
The exclusive nature of OEM’s main product (prestige, high-price hobs and ovens) means scale is neither a priority nor a determiner of profits – low quantity is profitably offset by high per-unit pricing.

### 5.4.2 China Strategy

OEM's goods are designed in-house at OEM's UK office in Trafford Park, Manchester. Manufacturing occurs at OEM's Qingdao factory, where 35 people work full-time. OEM receives designs and requests for manufacturing from UK-based brands. Designs for brands and NHS clients are created in Manchester and sent by e-mail to OEM's Qingdao factory. If necessary, Chinese instructions are appended by Manchester-based Chinese staff. All staff are engineers with relevant product experience, are direct employees of OEM, and often participate in the design process. Tier 2 supply is handled locally in China by the factory's operations manager.

In block concept terms (Figure 17), the OEM model is an uncomplicated tripartite arrangement. Its central position is occupied by BJ, the manager, owner, and principal designer at OEM.

Figure 17 OEM Supplier-Buyer Flows

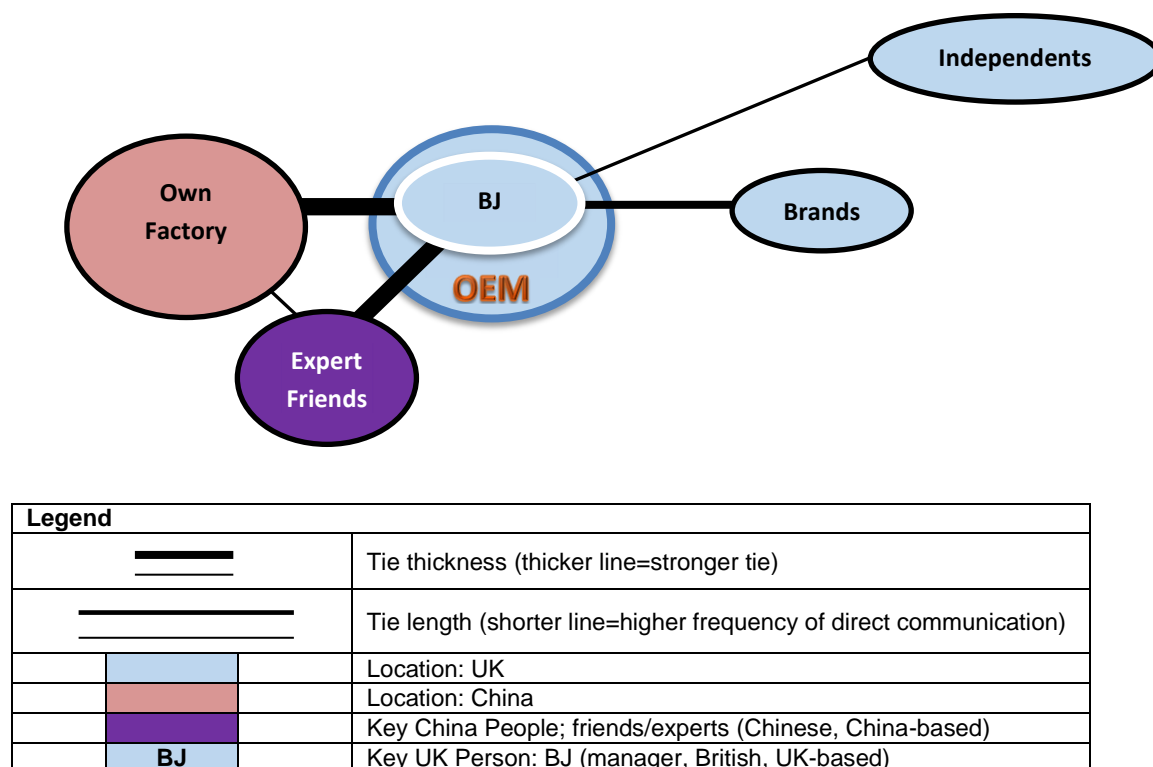


Legend	
	Flow of orders (unidirectional)
	Flow of goods (unidirectional)
	Flow of product design and other information (bidirectional)
	Line thickness indicates approximate volume (thicker line=higher volume)
	Total design/manufacturing/logistics solution (if required)
	Location: UK
	Location: China

BJ functions as both the front- and back-end manager, although at the back-end, he is assisted by numerous China-based individuals that he describes as “friends who are also manufacturing and product design experts”. At the front end, he interfaces

with his major customers, who are UK brands that he has known since his days with Haier in the 1990s. For the bulk of his business, BJ seems confidently reliant upon his network of contacts with people in the UK's domestic appliance and retail industry. A minority of BJ's orders come from independent British entrepreneurs. Few independents place repeat orders or high-value orders. Figure 18 (following) shows the relatedness of OEM's network actors.

Figure 18 OEM Engineering Sociograph



At the back-end, BJ manages the Chinese factory that he owns outright. The factory is a unit in a large industrial manufacturing facility that is shared by several companies, foreign and Chinese. Direct ownership of the factory necessitates constant contact and the development and maintenance of strong ties with the managers there. BJ states that the relationships he has with his managers have grown steadily to the point of strong trust. Nevertheless, BJ's presence in China is frequent and productive. BJ's supply activities are facilitated by a group of ethnically Chinese, predominantly China-based contacts. This group of valuable individuals are BJ's *key China people* (his "trusted friends, Chinese colleagues and business contacts from his days at Haier, a major Chinese manufacturer of white goods").

They are his quality control and general management deputies, attending critical stages of product development, and performing major transactions. These friends provide linguistic and cultural assistance, and act as liaisons with tier 2 suppliers and local officialdom. They also monitor local business developments, economic conditions, material prices, and any other events or trends likely to impact on the continuity of OEM's supply, transportation, or labour.

In terms of essential business processes/supplier-buyer flows, OEM is a buyer-to-supplier-facilitating *intermediary* performing three roles: back-end supply support (quality control, and cost monitoring); intermediary-facilitation (communicating with buyers and suppliers); and front-end sales enabling (opportunity identification, customer relationship management, and total solutions provision if necessary). Chinese suppliers communicate directly with OEM through BJ's representatives in China or Manchester.

#### **5.4.3 China Risk Management I. Logistics**

OEM has no storage or distribution facilities. Orders are shipped directly from factory to customers' premises. Factory floor-to-customer door direct delivery is usually provided by OEM via a third-party logistics provider, but occasionally by the customer's own logistics partner. OEM uses internationally capable shippers and has of Autumn 2015 suffered only one late delivery.

Logistics companies communicate with OEM representatives either in China or with the Manchester office, through which all payments for logistics operations are made. Manchester-based ethnically Chinese staff handle communications with the China offices of third-party logistics providers, although the necessity for such communications is infrequent. Unpunctuality and delivery failure are extremely rare occurrences. OEM management consider logistical risk to be trivial to the point of insignificance.

#### **5.4.4 China Risk Management II. Quality**

OEM's China representatives assist the factory with issues related to quality and/or tier 2 supply, and forward any relevant information on such matters to the OEM office in Manchester. All China-side issues likely to impact negatively on orders are

handled by OEM first in Manchester and then in China. OEM endeavours to mitigate risk through constant communication with both customers and the factory. OEM's presence in China consists of BJ (who is present for several months each year), and (when BJ is not present) a mixture of representatives with whom BJ has both formal and informal working relationships.

OEM management considers risk of quality failure in their China manufacturing to be these days extremely low, but in the past frequent and severe. The principle reasons given for the most extreme instances of failure were lack of comprehension of instructions by Chinese staff, and, in the worst cases, innovative but counterproductive misguided resourcefulness on the part of Chinese staff: well-intentioned attempts to simplify processes and reduce material usage by deviating from the engineering specification resulted in quality failures. BJ personally oversees production of goods that he regards as potentially problematic, or deputizes a China-side colleague to perform quality control. BJ correlates the degree of his China presence with the incidence of quality failure strongly. Higher levels of personal presence reduce quality-related risk.

## **5.5 Industry Key Informant 5 (IK5): R-UK (UK SME)**

### **5.5.1 Company Overview**

Forfar-based R-UK is a supplier of engineered components to agribusiness and gas industry clients worldwide. The R-UK essential business model (in marketing terms, its unique selling points) can be described thus:

- ❖ a portfolio of proven good, reliable suppliers;
- ❖ strong historical legacy;
- ❖ dominant position in the supply market of both the gas and agriculture businesses;
- ❖ in-house expertise (a flexibility that is likely of higher value to smaller companies);
- ❖ long track record of high quality products at competitive prices;
- ❖ reliable EU-wide logistics via its UK facilities;
- ❖ strong business connections in China;
- ❖ extensive portfolio of international customers;

- ❖ solid comprehension of customers' technical needs and the cost pressures in their industries;
- ❖ bilingual/bicultural staff with frequent presence in China (reassures customers that queries with Chinese suppliers can be quickly and efficiently resolved, which is persuasive to customers considering ordering critical/unusual components or placing high-volume orders);
- ❖ possibility of additional quality control at a UK facility;
- ❖ based in the United Kingdom, close to the operational centres of many of its customers in the gas industry.

### 5.5.2 China Strategy

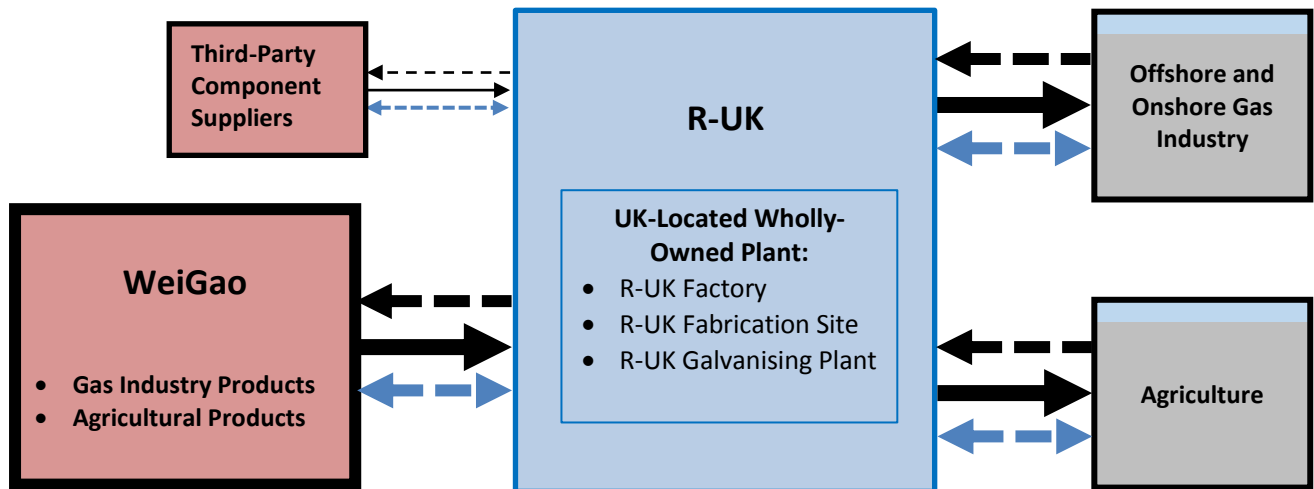
The R-UK system comprises three basic functions: back-end operations, i.e. supplier and supply management (quality control, logistics, and cost monitoring); intermediary operations (buyer and supplier communications and issue resolution); and front-end operations (sales, customer relationship management, and the provision of additional design services if necessary).

Communication with Chinese suppliers occurs predominantly via a small number of bilingual, ethnically Chinese staff based in both Forfar and, increasingly, in China (thanks to voice over Internet applications). Non-Chinese speaking staff at R-UK have the option of communicating *directly* with the handful of third-party Chinese suppliers that have their own bilingual staff, although the necessity for this mode of communication rises only infrequently. Chinese suppliers handle tier 2 supply independently of R-UK. The joint-venture factory also trades with its tier 2 suppliers autonomously.

As is evident from the following diagrams, the R-UK business model can be seen as comprised of three interlinking sections: a central point of conversion that contains the UK headquarters, a back-end supply base, and a collection of customers at the front end. Figure 19 (following) shows R-UK's pre-2009 supplier-buyer crossflows.

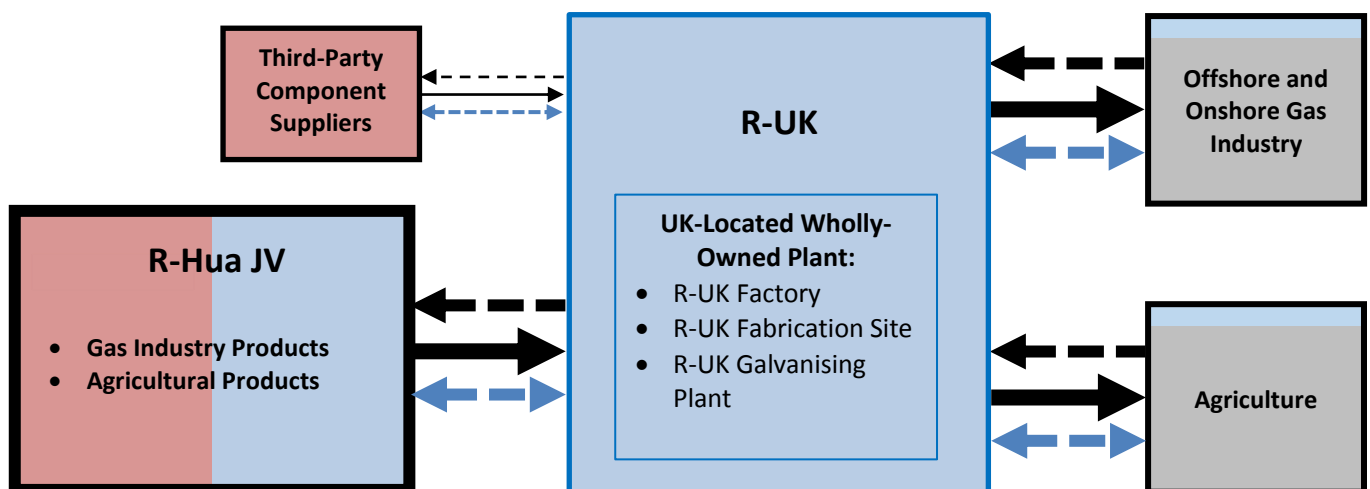





Figure 19 R-UK (Pre-2009) Supplier-Buyer Flows



In 2009, R-UK formed a joint-venture with its main Chinese supplier, WeiGao (name changed). The joint-venture effectively fused the operations, and, consequently, the fortunes of the partners. Neither organisation can withdraw easily, so mutualism is fundamental to the arrangement. We can assume that both parties derive an acceptable degree of advantage from the partnership. Figure 20 (following) shows R-UK's post-2009 supplier-buyer crossflows.

Figure 20 R-UK (Post-2009) Supplier-Buyer Flows



Legend		
		Flow of orders (unidirectional)
		Flow of goods (unidirectional)
		Flow of product design and other information (bidirectional)
		Line thickness indicates approximate volume (thicker line=higher volume)
		Location: UK
		Location: China
		Location: China; Ownership: UK/China

The joint-venture means that R-UK has *permanent* representation in China. This arrangement frees the UK office from responsibility for the management of a major supplier operating in a distant country. China-side problems are resolved quickly and economically by China-present R-UK employees.

If portrayed sociographically, the R-UK supply model reveals a pivotal, portal-like *key China person*. Ms Ria (name changed) is that person. The same individual was the owner of the formerly state-owned engineering component maker WeiGao, which since 2009 has been the Chinese partner in R-UK's joint-venture.

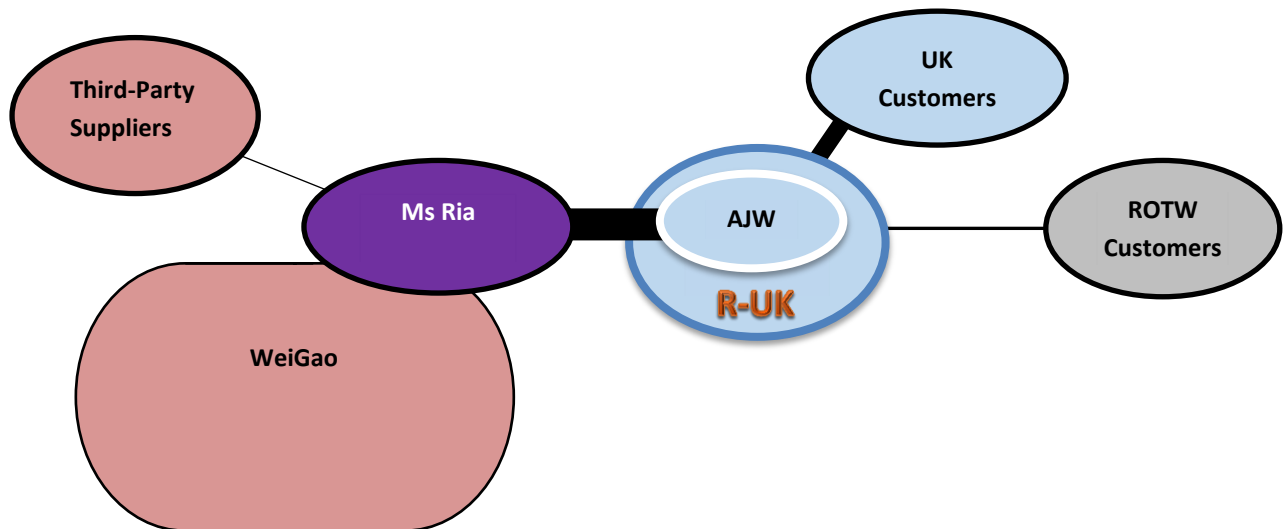
Interestingly, R-UK's interaction with its third-party suppliers has also been steadily increasing since 2009. To better manage its third-party Chinese suppliers, R-UK has employed a permanently China-based, ethnically Chinese, bilingual production operations manager/engineer and accountant (more *key China people*). This pair operates independently of Ms Ria, whose role is now focused on management of the joint-venture.

Liaising with the China presence is the duty of Forfar-based AJW, who communicates on behalf of both the board and R-UK's customers. AJW relies on his third-party supplier management duo and Ms Ria for control and coordination of China-side supply activity. Since AJW is UK-based, China-side supply activity is effectively deputised to this trio.

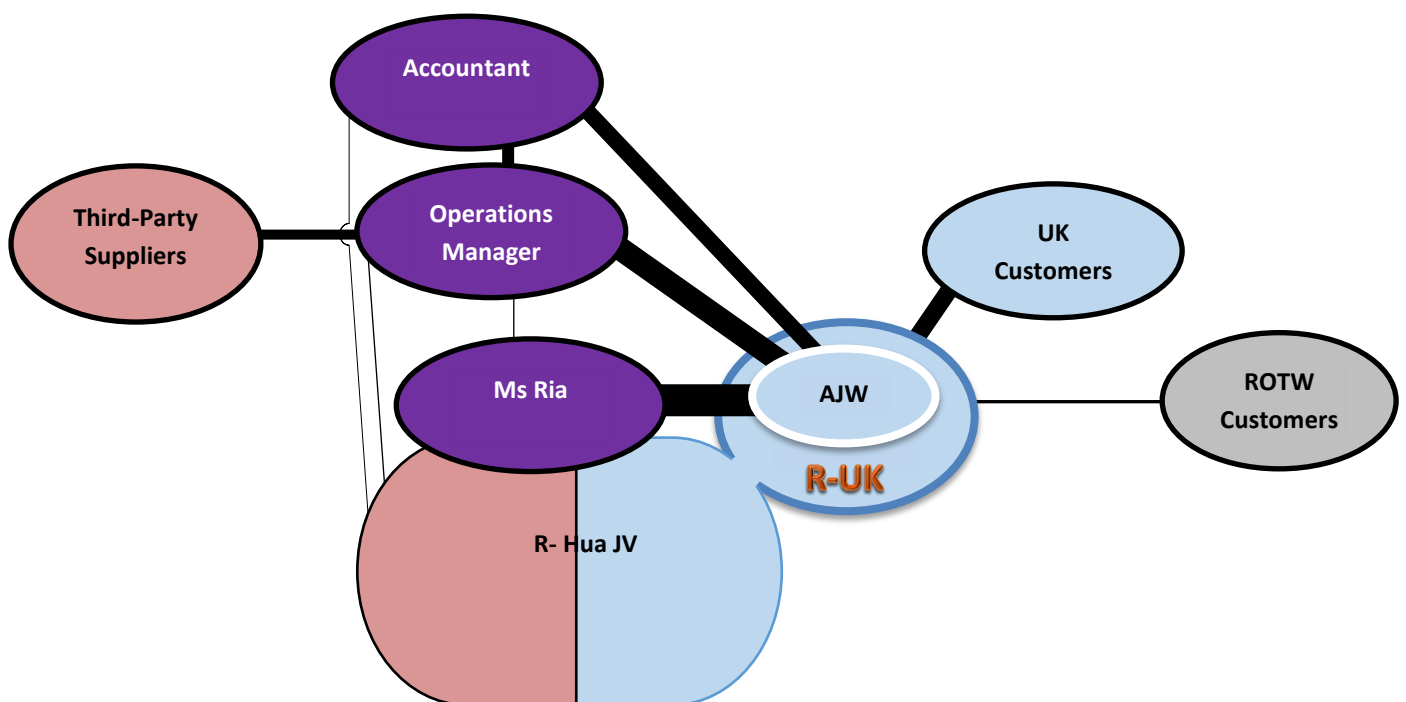
The involvement of these three individuals in China *sales* was not clearly articulated. However, the interviewee reported that prior to 2009, Ms Ria actively identified Chinese buyers for R-UK products and initiated sales. This observation suggests that Ms Ria is a deeply embedded, possibly irreducible element of R-UK's China strategy, *both in terms of supply and sales*. Figure 21 (following) shows the


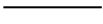




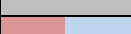




relatedness of R-UK's pre-2009 network actors. Figure 22 (also following) shows the relatedness of R-UK post-2009 network actors.

*Figure 21 R-UK (Pre-2009) Sociograph*



*Figure 22 R-UK (Post-2009) Sociograph*



Legend			
 			Tie thickness (thicker line=stronger tie)
 			Tie length (shorter line=higher frequency of direct communication)
			Location: UK
			Location: China
			Location: ROTW (customers across the rest of the world)
			Location: China; Ownership: UK/China
			Key China Person: Ms Ria (entrepreneur, Chinese, China-based)
			Post-2009 key China people (operations manager and accountant)
			Key UK Person: AJW (Director, British, UK-Based)

### 5.5.3 China Risk Management I. Logistics

The interviewee initially recalled no instances of unpunctuality or delivery failure. When pressed, he said an incident of late delivery occurred many years ago, but logistical risk is very rarely a UK-side concern. The joint-venture company uses a local third-party logistics company. The partnership has existed since the early days of WeiGao, so predates the joint-venture by about a decade. The enduring nature of this relationship suggests both parties find the arrangement advantageous. It is rational to speculate (since no precise information regarding this matter was offered) that the infrequency of China-side logistics-related problems is at least in part due to effective selection, loyalty pressures, and the management of that aspect of the business by Ms Ria, R-UK's long-term, China-based representative and joint-venture manager. Ms Ria is a person of considerable influence in the local economy (evidenced by her acquisition of a large-scale, formerly state-owned plant).

### 5.5.4 China Risk Management II. Quality

Ms Ria and (post-2009) the operations manager and accountant pairing act as R-UK's presence in China, reducing risk by monitoring quality, answering queries from both sides, and smoothening communications.

Operating a network of third-party Chinese suppliers provides R-UK with risk-reducing redundancy. In the event of quality failure at the joint-venture or a third-party supplier, an alternative supplier can be activated on a temporary basis – provided it can meet the technical and capacity requirements of the order. Supplier identification, vetting, activation, and all necessary communications and transaction activities would be the responsibility of the China-side staff.

R-UK also operates several wholly-owned manufacturing facilities inside the United Kingdom: a factory, a fabrication site, and a galvanising plant. These UK facilities are the typical destination of the vast majority of R-UK's globally sourced products. Finalizing modifications of products and the incorporation of subcomponents into larger components occur at these facilities. When products are fully assembled, they are moved forward to R-UK's customers in the UK and overseas. In the case of Chinese customers, products comprising subcomponents made in China are shipped back to China after being assembled in the United Kingdom. Products requiring no modification or assembly into other products whatsoever are few in number. Such products are shipped directly from Chinese supplier customer, wherever that customer may be. However, this is the minority case so is not representative of the overall R-UK's general flow. The UK facilities appear to act as something of a risk-reducing postponement/decoupling point; goods are received in volume, incorporation and/or modification according to customer requirement is performed (variety), quality control follows, and despatch of finished product to the customer is the final activity. The inclusion of the UK stage reduces the probability of faulty product reaching the customer, and provides the advantage of agility via stock. This decoupled system also reduces R-UK's exposure to China-side logistical risk, since only a small proportion of products are sent directly from China suppliers to customers.

R-UK's suppliers are all ISO-certified. When ordering irregular products from a supplier, R-UK stipulate quality in their design specifications, as is standard practice in most engineering instances. Manufacturers produce to international standards, as articulated in the relevant EU and ISO documentation. Production can also be, albeit infrequently, to the bespoke specifications of the customer, with quality tested by R-UK at one of their UK facilities before the order reaches the location of installation or usage.

## 5.6 Industry Key Informant 6 (IK6): P-S (UK SME)

### 5.6.1 Company Overview

P-S Refractories Limited (hereafter “P-S”) is a Halifax-based manufacturer of refractories and other engineered products for glass manufacturing and bottle making clients worldwide.

P-S has been active for 214 years, has a strong reputation for quality products at reasonable prices, provides design services for companies requiring custom-made products, P-S sells furnace and refractory solutions to global glassmakers (the UK represents 10% of its sales). Design is the responsibility of the Technical Services Division of P-S. Design services are usually of more value to smaller glassmakers who lack in-house design expertise.

In marketing terms, P-S’s unique selling points are two-fold:

- ❖ strong legacy and single industry specialism, and
- ❖ UK headquarters and facilities (P-S is accessible to UK and European glassmakers. The UK factory assembles subcomponents, performs finalising modifications, and aggregates minerals into materials. Near-to-market location of final stage product preparation and customisation gives the company immediacy and proximity to many of its major customers.

### 5.6.2 China Strategy

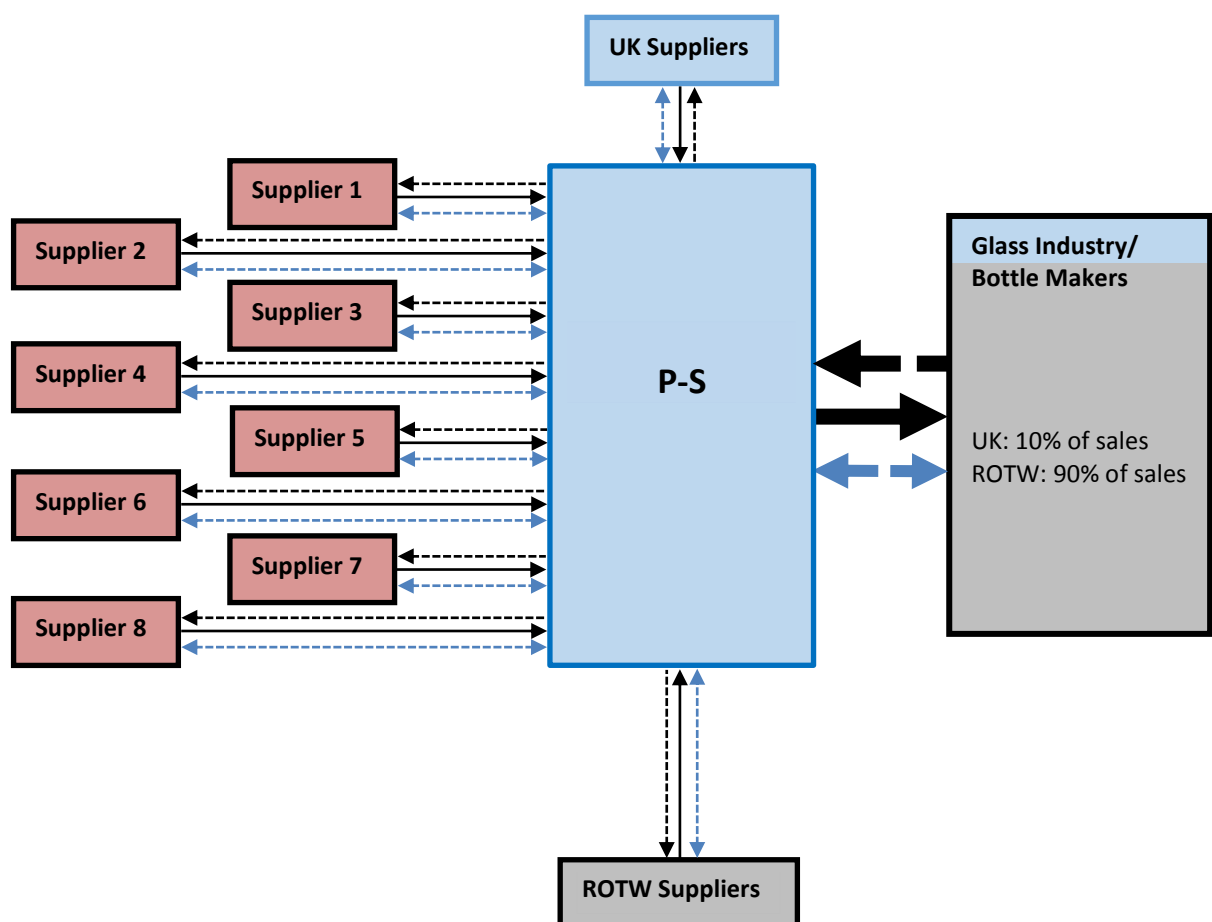
P-S source both standard and bespoke products from a predominantly Chinese supply base. P-S source *entirely* from third-party suppliers. In 2015, P-S was using eight Chinese suppliers.

P-S began using Chinese suppliers in 2010. Management were initially motivated by cost savings of around 70%. Previously, P-S used mostly British suppliers, but the price competitiveness and equivalent quality of Chinese suppliers drove P-S to switch, and to soon after begin building long-term strategy around Chinese supply. Most of the products and materials received at the UK factory are the outputs of Chinese suppliers. P-S performs finalising modifications and aggregation of subcomponents at their UK facility. Completed products are shipped onward to the buyer or location of installation. P-S’s Chinese suppliers are ISO

compliant and certified. P-S entrusts tier 2 supply management entirely to its Chinese suppliers.

The P-S supplier-to-buyer flow (shown in the following diagram) resembles the models that describe the preceding three UK SME cases. The central position is occupied by P-S and its UK headquarters, where the key China person, Ms J, the interviewee, and the board members interact. Figure 23 (following) shows the supplier-buyer crossflows of P-S.

*Figure 23 P-S Supplier-Buyer Flows*



Legend	
	Flow of orders (unidirectional)
	Flow of goods (unidirectional)
	Flow of product design and other information (bidirectional)
	Line thickness indicates approximate volume (thicker line=higher volume)
	Location: UK
	Location: China
	Location: rest of the world (ROTW)

P-S has *several key China people* who are bilingual and literate in the relevant technologies and requirements of their customers. P-S's use of Chinese suppliers represents low prices; efficient management of a Chinese supply base reduces the commonly perceived risk of low quality accompanying low prices. The presence of China-proficient personnel reassures P-S's customers that in the event of quality or logistical failures, a solution can be quickly and efficiently obtained. Thus, P-S markets its Chinese supply base as a low-risk and cost-reducing capability to its customers.

Although P-S still sources from suppliers outside China, many of its core product lines contain minerals and materials sourced from Chinese suppliers. Increasingly, engineered components are also being sourced from Chinese suppliers. Thus, the proportion of the P-S China supply base is steadily growing. This trend is the result of the company's successes with its existing suppliers, the infrequency of logistical problems, and the general satisfaction of P-S's customers with the price and quality offered by P-S's China-sourced products and materials.

The P-S China presence is modest and transient, consisting of one individual, Ms J, who communicates mostly by voice over Internet, and visits China only when accompanying the interviewee or another high-level manager. Fortunately for P-S however, most of their Chinese suppliers employ at least one bilingual person. (Interestingly, the P-S interviewee stated that he is endeavouring to develop *direct relations* with a handful of his Chinese suppliers. To this end, he is currently learning to speak Chinese to better communicate with Chinese suppliers, to become less dependent on Ms J for communication with them. In Figure 24, this is indicated by the finer lines that extend from "GN and Board" to four suppliers directly, circumventing Ms J.) As the sociography shows, Ms J is the principal point of contact for P-S's eight suppliers. Ms J is also the channel through which P-S communicates with those suppliers. Thus, Ms J's role is that of a bidirectional bilingual intermediary. Ms J is directly employed and usually physically present at P-S in the UK. The interviewee implied that Ms J's services make her an indispensable element of the P-S supply strategy. The importance of the relationship between Ms J and the board appears exemplified in the high-level trust that the board has in Ms J and the prominence of Ms J's activities in the company's China-side sourcing operations. Ms

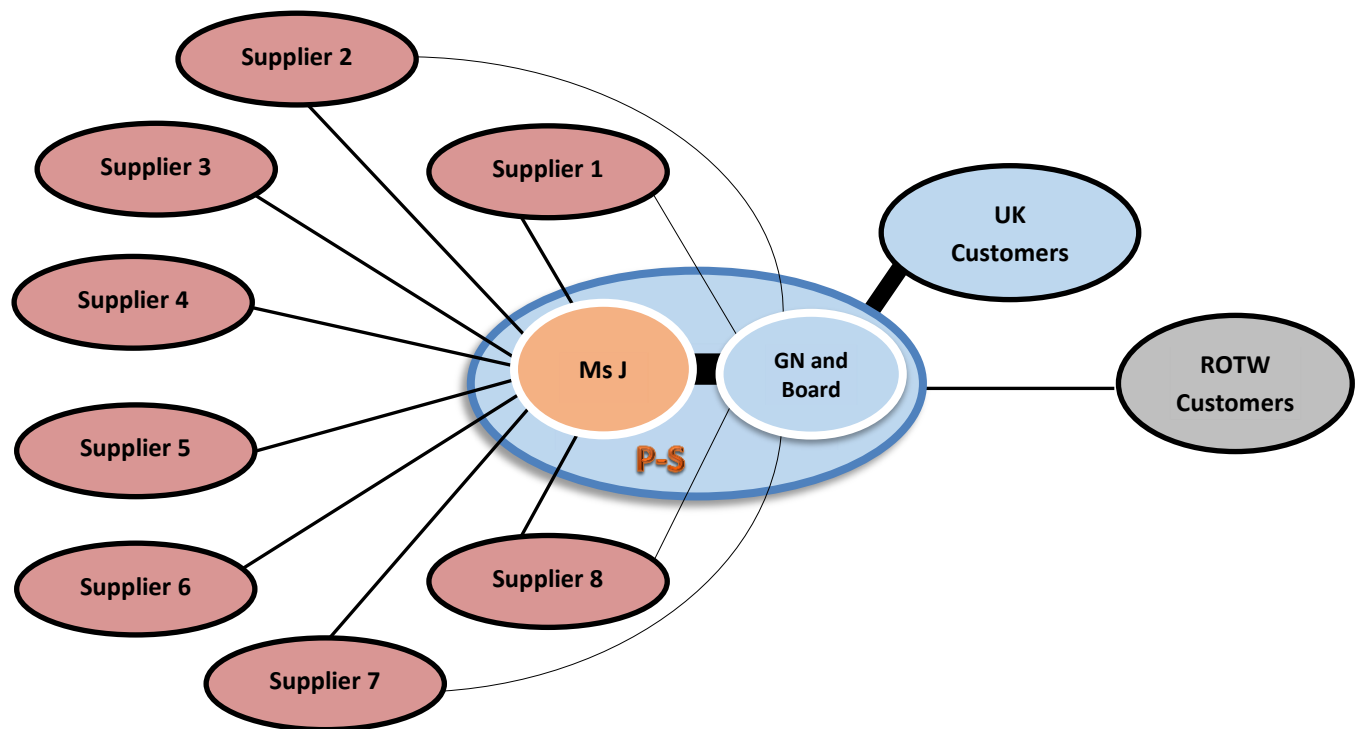




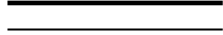
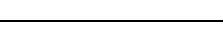





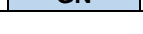
J is directly employed by P-S so likely has a higher personal stake in P-S than in any Chinese supplier.

P-S's *key China person* is thus an *internal asset* under the control of the board.

Figure 24 (following) shows the interrelatedness of the P-S network actors.

Figure 24 P-S Sociograph



Legend		
		Tie thickness (thicker line=stronger tie)
		Tie length (shorter line=higher frequency of direct communication)
		Possible ties (inferable)
		Location: UK
		Location: China
		Location: ROTW (customers across the rest of the world)
		Key China Person: Ms J (P-S employee, Chinese, UK-/China-based)
		Key UK Person: GN (Commercial Director, British, UK-Based)

### 5.6.3 China Risk Management I. Logistics

P-S's system contains three elements: back-end operations (supplier management and logistics); intermediary activities (customer and supplier query management); and front-end operations (sales, design consultation, and customer relationship

management). Simplicity in logistical operations reduces P-S's distribution risks. All their Chinese suppliers ship directly and only to P-S facilities in the UK. Only very rarely do Chinese suppliers ship to P-S's customers. Shipping is typically high in quantity and rarely urgent. Following inspection and, if necessary, final stage customisation at the UK facility, products are despatched to customers worldwide from the UK. Thus, Chinese suppliers ship inventory that is typically unmodified. Accumulating inventory near to the point of modification and central despatch keeps inventory buffer in the system, which translates to competitive lead times for the customer. The withholding of finalization (postponement) reduces waste and decreases the vulnerability of the system to China-side logistics failures. Thus, the P-S system features a risk-reducing decoupling point.

#### **5.6.4 China Risk Management II. Quality**

The generic nature of supplier product reduces risk related to technical, manufacturing quality. Product consolidation, aggregation, and quality control at P-S occur at their UK facility. P-S reduces the risk of quality failures and simplifies logistics processes by having all its SCs converge at a single point.

In the next chapter, the findings from the two case studies and all six industry key informant interviews will be aggregated and analysed.



## 6. Summary of Case Study and Industry Key Informant Findings


In this chapter, the findings of the two MNE case studies and six industry key informant interviews are aggregated for comparison. Main risks and their modes of mitigation are identified.

### 6.1 Risks Reported

The following risks were presented in both case studies and all six industry key informant reports (order approximately reflecting recurrence): specific quality failures, general quality management, bureaucratic obstructions, intellectual property related issues, corruption, and logistical problems. Table 14 reports the risks identified and their locations of mitigation.

*Table 14 Supply Risks Identified and Location of Mitigation*

Supply Risk	Global MNEs (CS1, CS2, IK1, IK2)				UK SMEs (IK3, IK4, IK5, IK6)			
	FEM	CT	SFM	AFC	D2C	OEM	R-UK	P-S
Quality failure	中	中	中	中	中	UK/中	中	中
General quality management	中	中	中	中	中	UK/中	中	中
Corruption			中	中				
Intellectual Property loss							Δ	
Logistical failure						UK/中		
Bureaucracy							中	

Legend		
	Location of Mitigation	
	Global MNEs (Cases KM1-4)	UK SMEs (Cases KU1-4)
中	China HQ or regional office	China – through China-based staff or frequently China-visiting UK-based Chinese staff
UK/中		UK – through UK-side manager with China-side assistance
	Corporate global head office; strategic supplier strategy	
Δ		Not actively prevented or resolved (tolerated)

### 6.2 Risks and Modes of Mitigation Reported by Global MNEs

In the case of global MNEs, identifying specific individuals and dyadic relationships was impractical. For this reason, sociographs of the type created to represent the human network dimension of the UK SMEs could not be created. Tables 15 and 16

(following) present the China supply risks and mitigation methods used by global MNEs and UK SMEs respectively (case study MNEs are yellow).

*Table 15 China Supply Risks and Mitigations: Global MNEs (CS1, CS2, IK1, IK2)*

Company	Risk Reported	Frequency	Severity	Mode of Mitigation	Action by
FEM (CS1)	Quality failure	Very low	Potentially very high (electrical outage, fire, shock hazard)	FEM "Quality Policy", "FEM Supplier Quality Management" guide (SSQM), "Supplier Guidebook" (practices and standards document); legally binding, formal contracts, ISO compliance (process-specific and general, i.e. ISO 26000:2010), equipment manufacturer's licences (where applicable), in-house enforcement, resident quality inspectors, quality checks at point of assembly,	National Center of Excellence-despatched quality/production expert and supplier auditors
	General quality management			Switching of sources (redundancy), when possible	
	Intellectual property	High	Potentially very high (costly)	Supplier selection criteria, background checks and other due diligence, supplier inspections, in-house assembly of critical products, quality control by FEM-employed experts	Global HQ
CT (CS2)	Quality failure	Very low	Potentially very high (injury and death, electrical outage, fire, infrastructure damage, traffic disruption)	CT "Supplier Code of Conduct"; legally binding, formal contracts, rail manufacturer's licences (where applicable), in-house quality standard enforcement, resident quality inspectors, quality checks at point of assembly	Regional Office-despatched quality/production experts and supplier auditors
	General quality management			Switching of sources (redundancy), when possible	
	Intellectual property	High	Potentially very high (costly)	Supplier selection criteria, background checks and other due diligence, ISO 9001, ISO 14001, ISO 16001, supplier inspections, in-house assembly of critical products, quality control by CT experts ("Division and Site Teams"), "Preferred Supplier Panel", "Continuous Improvement", "Flawless Execution"	Global HQ
SFM (IK1)	Quality failure	Low to moderate	Low	"S-Way" (in-house quality standard: contractual quality and performance agreements)	National HQ
	General quality management				
	Corruption	High	Potentially high	Zero tolerance policy	Mandated by Global HQ; Applied by National HQ
AFC (IK2)	Quality failure (poisoning hazard)	Low	Potentially very high (human and animal sickness, death, contamination of food chain)	Internal KPIs, ISO compliance, industry and regulatory standard certification (where applicable), formal in-house quality and performance agreements	National HQ
				Switching of sources (redundancy), when possible	
	Corruption	High	Potentially high	Zero tolerance policy	Mandated by Global HQ; Applied by National HQ

## 6.3 Risks and Modes of Mitigation Reported by UK SMEs

Table 16 China Supply Risks and Modes of Mitigation: UK SMEs (IK3, IK4, IK5, IK6)

Company	Risk Reported	Frequency	Severity	Mode of Mitigation	Action by
<b>D2C (IK3)</b>	Quality failure	Low	Low	Direct communication with Jinping (main factory)/third-party supplier; direct, long-term contracting with single major manufacturer; personal visits to suppliers	CP (China-based)
<b>OEM (IK4)</b>	Quality failure (electrical hazard)	Low (previously more often)	Potentially very high (injury, death, fire)	Direct communication with factory, personal visit to customer's site (if UK-side), personal visit by Chinese expert friends (if China-side), personal "problem solving" by BJ when China-side expert friends face financial or technological difficulty, trust	Usually China-based Chinese expert friends under direction of BJ; occasionally BJ in person, if incident coincides with his regular China visits
	Logistical failure	One instance to date	Potentially high if delay is extreme	Direct communication with third-party logistics company and port	BJ with China-side assistance by expert friends
	General quality management		Potentially High	ISO 9001 & 14000, expert friends in China, trust, direct communication, frequent personal visits	
<b>R-UK (IK5)</b>	Quality failure	Low (one instance in 15 years)	Very low	Iterative dialogue with supplier, insistence that design specification is followed, systematic cause identification	China-side personnel: Ms Ria (when issue is JV-related), Operations Manager and accountant (when issue is third-party-related).
	General quality management		Potentially high	Direct communication with R-Hua (main factory and JV)/third-party supplier, insistence on ISO compliance (partial solution only), DNV certification (industry recognised quality standard), ISO 9000	
	Bureaucratic	Low (one instance: registering JV)	Potentially very high	Use of trusted, well-connected, business-savvy China contact, i.e. Ms Ria	
	Intellectual property	Common (but not unique to China)	Low to medium	Not resolvable. Managers accept that any product sold in China will be copied at lower quality and sold at lower price. Not a concern unless the copies are sold in the UK or under the R-UK Brand.	
<b>P-S (IK6)</b>	Quality failure	Very low ("one or two")	Low	Direct communication with supplier, insistence on ISO compliance, inspections; P-S requests mend or remake – so far, all suppliers have obliged and borne all costs	Ms J (visits China when P-S is considering partnering with a new supplier)
	General quality management		Potentially high	Inspections of supplier site and product, relationship-/trust-building (unprompted mention of "guanxi"), ISO (no. unspecified)	

Table 17 (following) presents the key *relationships* that reduce China supply risk, according to UK SME key informants.

Table 17 Key Relationships in China Supply Management by UK SMEs

Company	Key UK Person			Key China Person		
	Name	Functions	Skills/Assets	Name	Functions	Skills/Assets
<b>D2C (IK3)</b>	MG	UK sales, customer relationship management	Extensive contacts in UK fashion retail, experience in B2B sales, design expertise	CP (surname not given)	Chinese supplier relationship management, China-side problem resolution	Extensive family and peer contacts in Chinese fashion supply industry, fashion design graduate, bilingual, design expertise
<b>OEM (IK4)</b>	BJ	General manager, head product designer, UK sales and marketing	Engineering graduate, former employee with responsibility for European marketing at Chinese domestic appliance giant Haier.	Names not given; number not given ("several individuals")	Manage factory in China, China-side problem resolution	Manufacturing, domestic appliance design and retail, Chinese business practice
<b>R-UK (IK5)</b>	AJW	UK and ROTW sales and customer relationship management; official title: "Director: Industrial Sales"	In-depth understanding of customer's industry and needs, extensive portfolio of industry contacts	"Ms Ria" (not a Chinese name; real name not given)	Co-owner and co-manager at R-Hua (Chinese J-V), resolution of JV-related problems	Twenty years of relevant industry experience (sales and supply), bilingual, former owner of Weihai Gaosai (supplier of engineered components to R-UK)
				Operations Manager	Chinese supplier relationship management resolution of third-party supplier-problems	China-based, bilingual engineer with operations management expertise
				Accountant	Handles China-side accounts, assists operations manager with supplier relationship management	China-based, bilingual, qualified accountant with foreign company expertise
<b>P-S (IK6)</b>	GN	Official title: "Commercial and Purchasing Manager"; board member and representative of/to Ms J	International procurement, in-depth understanding of customer's industry and needs, extensive portfolio of industry contacts	"Ms J" (real name: Guo Jieqiong)	Chinese supplier and customer (glassmakers) relationship management	Foreign languages graduate, bilingual (Chinese-English), business experience (diamond grinding company) prior to joining P-S

In the next chapter, the findings of the eight non-industry key informant interviews and an online exchange between supply chain professionals on the subject of China risk management are discussed.





## 7. Other Key Informant Findings

This chapter reports the findings from interviews with non-industry key informants: two academics, three consultants, one Chinese MNE manager, and two managers of UK SMEs that both sell and source in China. The findings of an online discussion of Chinese supply risk by supply chain professionals are also presented.

### 7.1 Academic/Practitioner Key Informant (AK1): Stuart Emmett (Author and Trainer)

#### 7.1.1 Reducing Risk by Relationships

Stuart Emmett reported that practitioner correspondence concerning his book *The Relationship-Driven Supply Chain* (2006) has been greater than that for all his other books combined. The book's premise is that competitive advantage-generating efficiency in SCs is acquired by the achievement of two fundamental relationships:

1. A company's *internal relationships*: the alignment of objectives, activities, and priorities across a company's divisions and hierarchies;
2. A company's *external relationships* – *especially with suppliers*: a company that can operate effectively with its suppliers, through provision of market intelligence, technology, visibility, and rewards for strong performance, earns its suppliers' loyalty, which likely reduces instances of quality failure and other risks.

Relationships are *fundamental* to SC performance and supplier management generally, regardless of culture, or industry. Business is social activity; SCs necessitate relationships between businesses, and therefore necessitate relationships between people. In a well-managed SC, relationships exist between managers, workers, divisions, and upstream and downstream entities. Effective supply requires all actors to perform mutually for collective advantage.

#### 7.1.2 Arm's-Length Versus Mutualist Relationships

Traditionally, UK management has had a transactional, arm's-length approach to supplier and SC management. However, with the success and resultant influence of the supply strategies of Japanese companies such as Toyota, the mutualist, relationship-driven SC has become an ideal that British companies are striving to

realise. Traditionally entrenched, arm's-length supply base operating companies are aware of the advantages that integrated, common focus-oriented SCs can deliver. Adversarial relationships are thus increasingly rare. SC concepts emerged in the literature in the 1980s but began to manifest in practice in the 1990s. Nissan's presence in England's northeast has profoundly influenced the supply management practices of major British car parts suppliers. UK supermarkets nowadays prefer specialist suppliers, and favour suppliers who can honour long-term contracts, which typically benefit both parties. British companies had adversarial, opportunistic relationships with their suppliers, and saw effective supply management as the obtainment of the lowest prices.

Increasingly common these days is the premise that demand pulls supply intelligently. In order to reap the advantages of effective supply, buyers must provide demand-related information to suppliers, so that suppliers also benefit from the efficiencies of improved forecasting and other techniques.

Overwhelmingly, buyers are attempting to reduce the quantity of inventory in SCs, principally to achieve just-in-time efficiencies and thereby minimise expenditure on inventory and the collateral costs of handling. This efficiency-over-quantity model necessitates a higher level of SC management proficiency: more frequent communication, greater market intelligence, improved understanding of transport, and a generally higher degree of buyer-supplier interaction. In short, efficiency and mutualism necessitate closer relationships between SC parties.

In previous decades, infrequent high-volume purchases were the preference of buyers in various industries. In such scenarios, buyer-supplier interaction was transactional, arm's-length, and non-communicative. Today's SC managers are sensitive to both supply and demand factors, including the constraints and preferences of their suppliers, so no longer function in hermetic silos. The supply management strategies of the best SC managers incorporate disciplinary and industrial factors that their predecessors considered outside their core interests. In British industry, concepts such as "partnership sourcing" have emerged, reflecting the adoption of integrated buyer-supplier operations.

## 7.2 Academic Key Informant (AK2): Martin Christopher (Professor of Logistics and SCM, Cranfield School of Management)

Prof Christopher emphasises *decoupling* as the principal method of *internal* risk reduction in SCs. To Prof Christopher, most SC risk is reducible by adoption of some variant of this system, with little adaptation for cultural or relational values necessary. However, the better the relationship that exists between buyer and supplier, the greater the supplier's commitment to achieving quality and lowering the probability of negatively impactful occurrences.

### 7.2.1 Risk in China Supply

*Formality* in the Chinese macroeconomic and political environment (institutional and legal power) can be a source of risk. Highly formal environments (i.e. environments in which the minutiae of relationships are detailed in contracts and enforced/enforceable) can be a *disadvantage* for multinationals, since formality can reduce flexibility and restrict options.

Chinese companies are often criticised for non-adherence to contracts. The Chinese establishment is also alleged by many writers to be weak in supporting formal control mechanisms such as fines and legal penalties. However, such formal weaknesses can provide advantages. The weakness of contracts permits *ad hoc* temporary relationships that can be dissolved or continued based purely on market conditions. For foreign companies in China, hiring on an *ad hoc* basis to address sudden demand spikes, for example, might be arduous due to bureaucratic complexity. For Chinese third-party suppliers accustomed to the native business landscape and navigating its idiosyncrasies, such an obstacle will rarely impede order completion. This has implications for China-sourcing multinationals: outright ownership of Chinese factories entails complexity/risk and commitment of a severity that can be challenging to justify, whereas the ocean of available, disposable, and functionally flexible third-party suppliers provides a degree of cost-competitive production that is incomparable.

In developed countries, where formality is usually high, efficiency and quality tend to be stronger, so contractual methods of risk reduction, although standard practice, are less necessary. (In less developed countries generally, contracts are better

regarded as a legal/bureaucratic requirement more than as a tool of risk management.) In less developed countries, formality is usually lower and efficiency and quality tend to be weaker, so *informal* (non-contractual) methods of risk reduction are standard practice and often effective. In the case of China, informal methods of risk reduction are usually interpersonal in nature, i.e. *guanxi*-based. If the *guanxi* between the managers of a transport company and a manufacturer are good, punctuality and security in logistics are practically assured. Similarly, the longer a working relationship endures, the stronger the *guanxi*-tie grows, and the probability of serious failures diminishes proportionally.

In China and other less developed countries, formal agreements are rarely as effective at addressing SC risk as technology transfers, investment, and other relationship-building solutions. In less developed countries, institutional power is weak – formal agreements are less effective than trust-based agreements, and seldom legally potent. Contracts and other signed agreements typically fail to return the compensatory outcomes they produce in the developed world, so the need for proactive, informal supply risk management is greater when sourcing in less developed countries. In practice, this often means motivating and educating the people who operate at the critical interface points of the chain.

“Quality fade” – the gradual loss of a manufactured product’s quality over time – has been observed in many of the recent high-profile examples of substandard products from Chinese suppliers. Quality fade occurs when buyers impose undue cost pressures on suppliers. Buyers “cut corners” (i.e. compromise on the quality or quantity of materials) to satisfy the buyer’s cost requirements. Buying on price is, according to Prof Christopher, a bad practice that is increasingly rare among world-class companies.

In the context of China specifically, supply-related risk is best resolved by having as many in-China agents “on the ground” as possible. It is difficult, if not impossible, for a distant foreign company operating at arm’s-length with a Chinese supplier to receive the standard of service and risk reduction available to either a local Chinese supplier or a well-represented, highly China-present, foreign company.

### 7.2.2 Relationships: One of *The Four Rs*

In his book, *Logistics and Supply Chain Management* (first published in 1992 and now in its fifth edition), Prof Martin proposes the *Four Rs* as a set of principles governing SCM: responsiveness, reliability, resilience, and relationships.

*Responsiveness* refers to the SC's ability to respond to market requirements, so is similar to *agility* (in the book, the two terms are in places used seemingly interchangeably). The *demand-driven* (pull) SC is better suited to serving fast-moving, rapidly changing markets than is the forecast-driven (push) SC. However, demand-driven SCs incur higher supply side risk (due to higher production agility requirements); whereas forecast-driven SCs incur higher demand-side risks (due to far lower responsiveness).

*Reliability* is achieved through process variability reduction, and reduces the possibility of quality failure. *Resilience* in SCs refers to the ability to recover continuity when impacted upon by unexpected, disruptive shocks. Prof Christopher recommends against over-lean systems, and favours holding inventory to lessen the effects of productivity sags and other interruptions.

Perhaps of most interest to this research is the fourth R: *relationships*. Prof Martin mentioned *partnership sourcing*, and describes it as a widespread practice that incorporates combined quality improvement initiatives, innovation transfer, systematic cost reduction activities, and visibility systems that facilitate the scheduling and synchronisation of manufacturing and delivery. Relationships have been growing in significance as a result of the trend toward minimising the number of suppliers. If supply minimisation is taken to the extreme, i.e. single sourcing, the relationship between buyer and sole supplier becomes critically performance determinative. The minimalist dyad offers economies, but also represents risk: the buyer has no immediately available supply alternative and faces high switching costs if the relationship deteriorates.

On the other hand, a successful relationship with a single source or a very narrow supply base can be a strategic advantage, because competitors may find achievement of the same problematic. Seen in this light, strategic supply management can be used as an entry barrier. The greater the degree of dependency

between supplier and buyer, the less the supplier is capable of performing effectively with another buyer, particularly if that buyer demonstrates lower commitment or interest in transferring technology or making other gestures of mutualism.

The ideal SC scenario has both buyer and supplier receiving ideal outcomes. For this, mutuality and trust are paramount. The achievement of the preceding three *Rs* is facilitated by the foundational construction of relationships and mutualism between interacting parties. Similarly, all tools of SC management, including visibility technologies and efficiency techniques such as just-in-time, are exploited more effectively when the buyer-supplier relationship is underpinned by a long-term, mutualist ethos of partnership. The deliberate cultivation of interdependency has the secondary benefit of complicating the ambitions of competitors. Nowadays, the prevailing nature of the supplier-buyer relationship is more collaborative than competitive.

### **7.2.3 Reducing SC Risk by Decoupling**

Decoupling is achieved by holding inventory at some point in the SC, ideally as close to the end customer as possible. Decoupling requires a SC that is non-lean. In a decoupled SC, inventory exists in generic, non-customised form until the market's requirements are known, whereupon customisation commences. This is possible in SCs in which the inventory is not the final product. Two examples were offered by Prof Christopher:

1. The Zara mass customisation/postponement model: garments in undyed, unfinished (greige) form are stored close to market, and then, when market preferences have been identified, customised before dispatching to retail.
2. Delarue, the British ATM maker: Chinese factories assemble the material bulk, but sensitive, high-tech components and the crucial software are installed in the United Kingdom and other countries of end usage. This form of decoupling is done to reduce both manufacturing complexity and the threat of intellectual property loss. Managers at Delarue believe the threat of IP loss is a considerable disadvantage of China sourcing.

Large companies struggle to manage their hundreds of suppliers, so effective relationship-based supply management, although desirable, is, for many

multinationals, not attainable. Formally documented procedures can substitute, to a degree, for sub-optimal relationships. Thoroughly codified quality requirements and order specifications allow suppliers to operate effectively without frequent interaction with their buyers.

Rare is the company that knows how its suppliers are handling their tier 2 suppliers. Immediate relationships (i.e. buyer-to-tier 1 supplier) maybe manageable, provided the number of tier 1 suppliers is modest. Large multinationals may however have to commit an entire office to regional supply management. In such cases, this strategy, when applied on a basis of formal agreements and quality standards reduces most internal risks.

### **7.3 Consultant Key Informant (CK1): Anderson Consulting (“China Solution Provider”, Stoke-On-Trent)**

#### **7.3.1 Risk in China Supply**

For SMEs, most China supply risk is resource related. Small companies lack the financial power required to permanently station an employee in China to resolve problems and manage risk proactively. For SMEs, a trustworthy Chinese partner constitutes the best possible option. A small company is unlikely to place orders large enough to give them priority status in the supplier’s portfolio of clients. Buyers might also have to market themselves to suppliers to secure their loyalty by, for example, transferring know-how, promising access to diverse markets, or making direct investments. SMEs unable to make such gestures require a Chinese supplier who recognises – but does not exploit – the precariousness of the buyer’s situation. Ideally, the Chinese supplier will be mutualist in outlook, long-term oriented, quality- and delivery-focused, and conscious of their criticality to the buyer.

For larger companies, most China supply risk is related to *control*, which in this context refers to an advantageous power dynamic, i.e. a state in which the buyer exercises power over its suppliers. Larger companies, because they place high-volume orders, are typically more technologically advanced than their suppliers, and have multiple suppliers at their disposal, have greater control and influence over their supply base than smaller, less advanced companies who are precariously dependent on their Chinese suppliers.

Big companies are exposed to risks that smaller companies rarely encounter, namely corruption and the complexity of regulations and law. These problems are particularly acute for companies operating wholly-owned foreign enterprises. Outsourcing is generally lower risk than direct ownership. Property laws are difficult and costly to navigate.

For larger companies operating factories (wholly owned or third-party) in China, the ideal manager is a Western-educated or foreign-born Chinese who is trustworthy, bilingual, bicultural, prioritises his/her company's objectives over ethnic loyalties, and is willing to harness his/her company's favourably imbalanced power dynamic in his relationships with workers and third-party suppliers.

### **7.3.2 Managing China Risk**

Locally situated, locally connected, multiple industry-experienced China solutions companies/consultants have links with local officials, expatriate communities, and native business networks. They also have UK offices, which increases their accessibility for UK clients. The consultant's China office can physically dispatch people to a supplier's premises, a port, or a customs office, and/or probe the local business environment for information and assistance. In these ways, China solutions companies provide numerous risk mitigation services/problem resolution capabilities to their clients.

Import-specialising companies constitute a risk-reducing solution that for short-term, low price-focussed SMEs is often acceptable. For a fee, the importer arranges China sourcing and UK delivery. The margins are much lower than are possible through direct sourcing, but the *importer bears all risks* (quality-related and logistical), and bears the cost of delegating pre-delivery checking to a third-party quality assurance company. Ali Baba and other e-procurement platforms offer alternative arms-length supply possibilities, but the risk of quality and delivery failure is high. For companies seeking long-term, strategic solutions, the advantages of e-procurement are few.

Most *very* low cost Chinese suppliers operate opportunistically, rarely believing they will receive a second order. Such suppliers inflict reputational damage on the



broader community of Chinese suppliers. For foreign companies seeking Chinese suppliers, separating opportunists from legitimate, quality focused, long-term relationship-seeking Chinese suppliers is challenging. Lacking knowledge of local suppliers and access to the networks of local business people, foreign managers are poorly positioned to make effective selection decisions.

#### *7.3.2.1 Relationships*

UK companies using Chinese supply are often excessively focussed on immediate results. Long-term oriented partnerships with Chinese suppliers yield the best returns for both parties. The formation and maintenance of a good relationship between the UK buyer and Chinese supplier is key to sustained supplier performance.

A *good* relationship is one in which the buyer imposes no undue price reductions on the supplier, makes loyalty gestures (such as investments), and spends time socially with management in order to create interpersonal proximity and foster mutualism. When such a relationship is established (formation is rarely rapid), several specific risks are likely to recede: quality inconsistency, delivery failure, and price hikes. Three to four years' investment in a Chinese supplier is required for dependability and profitability to be achieved.

A *bad* supplier-buyer relationship is arm's-length, low price-oriented, underinvested, short-term, and impersonal. Bad supplier-buyer relationships typically yield low quality products, delays, non-deliveries, and unforeseen extra charges.

Gift-giving and socialising for the appeasement and ingratiation of local officials are also daily features of Chinese business practice with which foreigners must come to terms. Impromptu fines for breaches of unknowable regulations and requests for payments to cover previously undisclosed bureaucratic procedures are commonplace. Resistance can result in the forced discontinuation of operations. Good relationships with local officials seem to reduce the occurrence of such incidents.

#### 7.3.2.2 *The Advantages of The Consultant – The Professional Intermediary*

UK SMEs considering China sourcing typically neglect to conduct rigorous research into potential suppliers or buyers *before* investing or commencing trade. Whenever possible and affordable, the services of professional due diligence companies should be bought. Better yet, a China-specialising consultancy or China solutions company should be retained. Such companies match the needs of UK clients with the capabilities of Chinese suppliers. Companies acting independently face higher risks; insufficient research and capability expose them to opportunism and fraudulent business practices.

UK SMEs are myopically attentive to achieving low-cost, so omit the following crucial considerations from their decision process:

- ❖ the services of third-party intermediaries and matchmaking/China solutions companies are costly;
- ❖ language issues are not easily or cheaply resolved;
- ❖ employing skilled workers and managers is costly and complicated;
- ❖ identifying suitable facilities and completing the procedures necessary for renting property is costly and complicated;
- ❖ maintaining offices and representatives in China is costly and complicated;
- ❖ travel and accommodation in China is expensive and consumes management time, which could impact on UK operations (the severity of quality and delivery risk appears to correlate keenly with the buyer's degree of physical presence in China and in-person interaction with managers at Chinese suppliers, so frequent travel is necessary);
- ❖ dealings with local governments can involve official and unofficial payments;
- ❖ the cooperation of local transport companies (particularly in provincial regions) can be difficult and costly to obtain;
- ❖ loss of intellectual property is a near-certainty, the strategic impact of which must be carefully weighed against cost savings;
- ❖ the unspecifiable financial and psychological costs of the trial-and-error nature of doing business in China;
- ❖ transport lead times tend to be longer than envisaged;

- ❖ import duties are profit-erosive (upfront payments of VAT on goods sourced in China are unavoidable); and
- ❖ the cost of pre-delivery checking services is sometimes unacceptably high.

## **7.4 Consultant Key Informant (CK2): Cargo East Asia (“China Trade and Cargo Specialists”, London/Hong Kong/Worldwide)**

### **7.4.1 Risk in China Supply**

For foreign companies embarking on China sourcing, the Chinese business environment is replete with formidable challenges. Very few books that describe business in China give a sufficiently frank picture of the hazards. China sourcing decisions are often based on exaggerated estimates of material and labour cost savings. Until recently, the motivation of many UK managers attempting to source in China has been simply make-cheap-to-sell-high.

Risks and problems in China supply are more efficiently resolved when there are fewer layers of control. Foreign companies attempting to operate in China via an agent or a third-party China-specialising, one-stop solution company will benefit from choosing a partner whose management structure has few layers. This way, communications travel upward and downward through as few filters as possible, enabling risks and issues to be speedily addressed.

Most books that discuss “quality fade” fail to identify cost pressure by buyers as its cause. This has popularized the belief that “Made in China” means low quality. Chinese manufacturers, suppliers, and brands are acutely aware of their poor quality reputation. In many cases, the result of this awareness has been positive: Chinese manufacturers are making conscientious efforts to increase the quality of their goods so that the reputational slur becomes retrograde.

The greatest risk to foreign companies considering China sourcing is unrealistic expectation. China costs are far higher than they were 20 years ago. Chinese managers expect approximately the same pay as managers in Europe and North America. China’s popularity as a location of sourcing continues despite the rising costs. This is probably attributable to the *allure of the vast Chinese market*. For many

companies, it seems logistically and economically rational to locate manufacturing as close as possible to the envisaged market. However, such temptation is well understood by many an opportunist Chinese supplier. Thus, the nature of risk has evolved from technical, logistical, and product quality issues (which seem largely resolved as a result of technology transfer, national pride, and buyers insisting on ISO and other quality standards) to corruption, intellectual property theft, *inter alia*.

For foreign companies sourcing in China, customs and local transport companies represent two potentially serious dimensions of complexity and risk. *All* the consultants who contributed to this research stressed the peculiarly fickle, changeable, and officious nature of Chinese customs procedures and officers, citing Chinese customs as *probably the most significant risk factor affecting foreign companies both sourcing in China and shipping overseas and shipping into China*. Matchmaking companies retain staff who specialise in customs regulations and documentation. Perhaps most importantly, the matchmaker's customs staff are often coastally located so able to visit ports and customs offices, and physically collect goods or arrange onward transportation inside China.

Another risk faced by foreign companies is excessive control by Chinese partners, which is a particular risk for companies involved in joint ventures. A case in point is Carrefour, who, to maintain their modest presence in China, have accepted a weakened position and a loss of autonomy that outside of China would be untenable.

For foreign companies sourcing non IP-sensitive products in China, consistency in quality is achievable through use of China-based third-party quality assurance companies. In 2015, quality-related risk does *not* characterise China-originating SCs or manufacturing. Non-ISO certified products from Chinese suppliers can be vetted by third-party quality assurance companies.

#### **7.4.2 Managing China Risk**

Foreign companies, including many UK SMEs, that lack in-house connectedness with China or relevantly experienced managers, can be introduced to a Chinese supplier via a matchmaking third-party/consultant. Such companies include Li and Fung and Cargo East Asia (the interviewee who supplied this information worked for

Cargo East Asia). These are large, highly capable, highly connected, multiple industry-experienced brokers, matchmakers, and China solution providers, operating out of offices in most of the world's major cities. In their matchmaking capacity, such companies connect foreign buyers to Chinese third-party quality assurance companies. When requested, the quality assurance company dispatches personnel from its office inside China to check either a supplier's premises or its products – both if necessary. Product checks occur at the supplier's premises, in warehouses or distribution centres, or dockside. Alternatively, suppliers can be required to dispatch a sample batch to the quality assurance company's offices (typically in southern China or Hong Kong) before shipping the entire order.

This method, although costly, provides foreign companies with in-China representation and a strong, responsive quality assurance capability. The quality assurance company also handles language and technical issues.

#### *7.4.2.1 Relationships*

Nowadays, for companies interested in low-price, short-term sourcing, *guanxi* is a redundant concern. Long-term supplier-buyer relationships are also unnecessary – *unless the foreign partner is planning to enter the Chinese market and/or is placing China at the centre of their supply strategy*. Arm's length, *ad hoc* China sourcing by appropriately assisted, i.e. consultant-facilitated, foreign companies is a low risk, low complexity, usually profitable practice.

Chinese suppliers are now familiar with short-term arrangements and usually accommodating (although this varies by industry and product). The Chinese supply market for low-tech products especially favours the buyer. According to some of our interviewee's clients (and two UK SME interviewees), China sourcing is as safe as sourcing in most developed countries: interpersonal relationships have no bearing on quality or logistical risk; selling in China is however far more risky. Goods manufactured in China, for example, are usually subject to various taxes and tariffs before they can be legally sold inside China. Even to very large multinationals, this realisation is often a very unwelcome surprise – a surprise that spoils many an envisaged strategy of increasing margins by selling China-made products at international prices inside China. Extremely China savvy operators (of which there are very few), such as Japan's Uniqlo (who have a "Made-in-China-Stays-in-China policy), overcome this profit-sapping constraint by partnering only with Chinese

vendors who possess licences for domestic retail. Such vendors will typically leverage their status by charging higher rates than non-licensed vendors.

#### *7.4.2.2 The Advantages of The Consultant – The Professional Intermediary*

For foreign companies sourcing in China, strategic involvement of third parties reduces the majority of risks associated with China supply: the matchmaker/consultant/intermediary pre-screens suppliers for reliability and, if necessary, compliance with international quality standards; the quality assurance company checks samples prior to shipping.

### **7.5 Consultant Key Informant (CK3): Cargo East Asia, China-Britain Business Council, and Hong Kong Chamber of Commerce (Joint Seminar)**

#### **7.5.1 Risk in China Supply**

Before entering the Chinese market, foreign companies require a clear understanding of their objectives. If they lack in-house expertise, they should engage a China-specialising logistics provider. The ideal solution would be to hire a company who could handle all of the entrant's China affairs, including both supply and demand side, i.e. both marketing and SC. In China, SCM and marketing are best performed by local Chinese people familiar with the complexities and conventions of the entrant's industry or market. Order fulfilment in China is often unexpectedly complicated, and involves a range of risks rarely considered before entry into China.

The cost of warehousing, the bureaucratic ramifications of hiring and firing, the selection of personnel, the appointment of managers, the location of warehouses, the choice of logistics provider, and the necessary level of logistics investment are all considerations that if not given due contemplation become sources of risk.

China features regional variations that are seldom thoroughly considered. Generally speaking, the costliest (but lowest risk) locations are the largest coastal conurbations.

In terms of pure logistics, Chinese companies lag behind foreign companies in warehouse technology, perishable goods transportation, warehouse operatives' basic skills, and, perhaps most significantly, customs knowhow. Consequently, documentation and permits can be arduous to manage. Refused goods are a costly

loss. The solution to customs issues is representation by a customs-specialising third party. Customs specialists can liaise on behalf of the exporter with Chinese customs officials, pay the relevant charges, arrange onward transport, and ensure goods are received at the intended destination.

### **7.5.2 Managing China Risk**

Fortunately, most problems facing foreign companies in China are *non-cultural* in nature, so are faced, albeit to a lesser degree, by domestic Chinese companies also. China solution companies attempt to craft the foreign entrant's China strategy to fit with a China supply strategy.

#### *7.5.2.1 The Importance of 3PLs*

Large foreign companies operating in China usually contract with Chinese third-party logistics providers. However, Chinese 3PLs rarely have the same technological tools that are standard to 3PLs based in Europe or the USA. Consequently, time-sensitive logistics is failure prone. Cold chain logistics is especially haphazard. By the standards of most multinationals, the visibility capabilities of Chinese 3PLs – and the level of visibility inside domestic Chinese SCs generally – are deficient. Locating lost loads and recovering the costs of spoilt goods from Chinese 3PLs can be difficult.

Multinational 3PL companies offer a simple, if costly, solution. Companies such as DHL can – although for prices *significantly* higher than those of Chinese carriers – provide internal China logistics with the same level of service and visibility that is standard in most developed countries.

#### *7.5.2.2 The Advantages of The One-Stop China Solutions Company*

The competition that foreign companies face from *in situ* Chinese companies is often far greater than estimated. To compete in China against Chinese companies that are intrinsically better equipped to navigate the domestic business landscape, foreign companies have to delegate the major portion of their Chinese strategy to China-specialising third parties.

Larger China-specialising fulfilment companies provide a one-stop solution. Facilities, managers, personnel, ordering systems, and even a corporate website in Chinese can be provided. Such services enable foreign companies to operate in Chinese markets with risk levels similar to those faced by domestic competitors.

## 7.6 Firm Comparator Key Informant (FK1): SCMG (Xuzhou, China)

### 7.6.1 Risk for the Chinese Multinational

Unprompted, the interviewee identified three areas of risk: internal (organisational), external (macroeconomic), and imitator-related.

#### 7.6.1.1 Internal Risk

Because SCMG is 100% Chinese state-owned, its main *internal* risk is party interference in corporate strategy, the complexity of business-government interaction, and inertial management. SCMG managers perceive the influence of the government negatively. Rules and regulations are abundant and difficult to navigate. The government can overrule management on any issue, is resistant to foreign inward investment, and is cautious about foreign outward investment, controlling how much SCMG can invest in foreign companies or offer for an acquisition. Overseas investment is politically sensitive and decisions depend heavily on the current foreign policy of China's *central* government. This influences when and where SCMG can invest. State involvement reduces the autonomy of SCMG to pursue profit opportunities according to profit factors.

State involvement deters global candidates from joining the management. Hence, the risk to human capital stock (acquisition and retention of world-class personnel) is severe. Foreign companies pay more and are perceived as better rewarders of innovation than Chinese companies. Layers of bureaucratic approval limit the company's ability to respond quickly to external conditions, incurring agility and responsiveness-to-market risk. The "committee" that runs SCMG includes at least one permanent member representing the Chinese Communist Party. This member has no official power, but wields significant, undefined influence over strategic decisions. All other members (which the interviewee referred to as "secretaries") come from engineering backgrounds. The Party member is a source of risk. Corporate management must consider the interests of this individual and the organisation s/he represents. The risk of strategic opportunity loss is ever present, since the party invariably moves slower than the market, understands less than management about the industry, and is distinctly risk-averse.



#### 7.6.1.2 *External Risk*

International exchange rates pose the biggest single *external* risk for SCMG. The cost of parts and shipping from overseas suppliers can fluctuate unfavourably; a strengthening yuan would diminish the price competitiveness of SCMG's exports. The cost effectiveness thus far delivered by concentrating production inside China is likely to be radically undermined if the value of the yuan is released from government control.

#### 7.6.1.3 *Imitator Risk*

There is some risk, albeit of low impact, of Chinese competitors copying SCMG's machines. Imitation of very basic equipment already occurs, but is at low scale. Chinese imitators cannot provide SCMG's levels of service quality, cannot export profitably, cannot support their machines internationally or even in remote areas inside China, and lack the capability to innovate.

### 7.6.2 Risk Management by the Chinese Multinational

Logistics and quality were not mentioned as risks. Implied by this omission is the assumption that efficiency in these two aspects of business performance is adequate by the standards of SCMG's Chinese and main foreign customers, or rarely sufficiently problematic to be a recognisable concern. From details that emerged concerning the firm's favoured markets and production strategy, it appears that risk – including quality and logistical risk – is mitigated *structurally*. (Only after prompting did the interviewee address the issue of risk related to quality and logistics specifically.)

The SCMG business model appears to be structured around risk aversion. SCMG concentrates its strategy on developing and less developed countries in which there are extensive infrastructure development projects. Thus, most business is between SCMG and governments (making it effectively a B2G-oriented business system). In China, SCMG's sales are predominantly to regional level governments. Similarly, governments seeking low price construction machinery and/or courting China state-backed investment constitute SCMG's focal foreign markets. Moreover, SCMG enters its key LDC markets as part of a greater political whole, i.e. as a representative industrial arm of the Chinese state.

This B2G preference reduces the need for head-to-head, contract-for-contract competition against rival manufacturers, and minimizes the risks present in the cut-and-thrust of competitive free markets and private party contracting.

All assembly of machines and production of most components is done at SCMG's plant at Xuzhou, Jiangsu. Most sales are to Chinese regional governments. Thus, SCMG's main facilities are well located to serve its main markets, which are *domestic*. In addition to reducing logistical risk and costs, local concentration of production inside China increases the *international* competitiveness of SCMG products: government subsidies lessen cash flow-related constraints and improve access to low-cost investment capital. State-owned Chinese companies overseas could also, it is rational to assume, be recipients of this advantage. However, government involvement in SCMG is highly territorial. SCMG's operations are likely significant to the economy of Jiangsu province, hence the provincial government will be deeply invested in SCMG and keen to keep the company local. Labour and property costs are far lower than in North America and Europe, where SCMG's competitors perform much of their production. This also amplifies SCMG's competitiveness. However, some countries apply heavy import taxes and other domestic industry-protective tariffs on China-made machines.

This is the case in Brazil, which is a major growth market for SCMG. The situation has prompted SCMG to invest in the production of a major assembly plant in Brazil. When fully operational, the Brazilian plant will be SCMG's only assembly facility outside China. Its output will serve customers based on or requiring machinery in South and Central America. The principle reason for the Brazilian plant is circumvention of margin-lowering import taxes and protectionist tariffs that would limit SCMG's performance in a key growth region. Secondly, manufacturing in Brazil reduces the logistical challenges of serving Latin America from China.

The centralization of production in China simplifies most logistical and manufacturing operations. SC issues are similarly addressed: SCMG acquires suppliers of non-substitutable products. Following acquisition, previously distant Chinese suppliers are, whenever possible, relocated to SCMG's plant. It is practice (but not policy) to geographically centralize as much of the supply base as possible. This reduces lead times and other logistical risks. Centralization reduces the complexity and cost of

dealing with external companies. When selecting external suppliers – both in China and overseas – SCMG uses a competitive bidding process.

Developing countries offer many attractions for SCMG: urgent, large orders for major infrastructure projects (many of which involve Chinese state-owned construction companies); familiar modes of state-business interaction; a preference for relational rather than transactional interaction; and the support of the Chinese government when trading with countries where there is extensive Chinese business and/or governmental involvement.

Governments in developing countries expect high levels of involvement in major business deals. Hence, the relationship between SCMG and the Brazilian government has so far been positive. The situation in India is similar.

SCMG's sales in Africa are also growing, but SCMG has no plans to begin production in Africa. The interviewee cited political instability as the main risk limiting African trade and deterring direct investment. Instead of direct investment, SCMG intends to concentrate its efforts on sales and developing relationships with the local governments of African countries, especially those countries with whom the Chinese government already has favourable relations.

#### *7.6.2.1 Risk Management I. Logistics*

Logistics and SC related risks are considered *insignificant*. SCMG's acquisition practices extend to Chinese domestic companies. International shipping is outsourced to state-owned Chinese shipping companies, who collect product from SCMG's yards and place on ships at port. Customer-side delivery operations are handled either by the customer or (more usually) by a foreign company that has contracted with the Chinese shipper. Efficiency in logistics is provided essentially through SCMG's interaction with China Ocean Shipping Company, the Chinese state-owned shipping company (COSCO, established 1961). The majority of Chinese state-owned manufacturers are strongly encouraged to contract with COSCO, with few exceptions granted.

#### *7.6.2.2 Risk Management II. Quality*

For SCMG, the low quality reputation of "Made in China" is not a source of risk. SCMG's main target markets are developing world countries, where buying

decisions tend to be heavily price-influenced. SCMG claim the quality of their machinery is as high as JCB or Liebherr, but their prices are much lower. The package of world-class-quality-at-low-price makes SCMG attractive to customers in developing countries.

#### *7.6.2.3 Risk Management III. Foreign Partners*

The interviewee reported the influence of its foreign partners to be a source of risk. The company operates two full-scale joint-ventures with foreign partners. By Chinese law, foreign partners can hold a maximum share of 40% in joint-ventures with Chinese state-owned enterprises. This means that SCMG exercises more power in these arrangements than their foreign partners. This asymmetry is the mechanism through which SCMG reduces its foreign partner risk.

SCMG headquarters has a foreign support section dedicated to lessening foreign customer-/fulfilment-related risk and resolving delays and incidents. Within this department are three sections, each handling customers in the Middle East and Africa, Europe, and North America. Language experts work alongside technical and sales people: all are located in the main office in Xuzhou, China. SCMG runs sales offices in Dubai, Brazil, the USA, Canada, and Germany, where there is also a small plant. In all locations, the majority of staff are ethnically Chinese.

#### *7.6.2.4 Risk Management IV. Technology Lag*

For SCMG, *acquisition of suppliers of vital components*, particularly European suppliers of non-replicable components, *reduces most forms of technological risk*. Whenever possible and rational, SCMG acquires overseas and domestic suppliers of bottleneck and/or inimitable components or software.

## **7.7 Firm Comparator Key Informant (FK2): 360C (UK SME, Crewe)**

### **7.7.1 Risk in China Supply**

Sourcing cash processing equipment from Chinese suppliers has been a generally negative experience for this UK SME. Typical incidents are non-delivery, late delivery, substandard product, incorrect quantities, poor packaging, customs issues, missing and incorrect invoices, duplicate payment requests, and insistence on upfront payments before shipping. Industry associates confirm that these are routine hazards of China sourcing. Chinese companies frequently request advance payment in full prior to shipping.

### **7.7.2 Managing China Risk**

The managers of 360C routinely negotiate with their Chinese suppliers for a lower risk payment schedule: 40% payment when the order is placed; 40% payment when the order is delivered; and a final 20% payment when the product meets quality requirements and is deemed suitable for resale.

The imposition of these conditions has so far produced a dramatic improvement in both quality and punctuality of supply. Through industry contacts, 360C has learnt that similar agreements constitute conventional practice *between Chinese companies*.

The interviewee reported that the industry's larger buyers are highly quality focussed and reputation-oriented ("quality" in the cash processing equipment industry refers to mechanical reliability, counting accuracy, usability, and the capability to accept mix bundles of notes). Because he has experienced substandard manufacturing in many China-made devices and has heard negative reports from influential industry associates, he *never* arranges drop shipping directly to his customers from Chinese suppliers/manufacturers.

### **7.7.3 Relationship Skepticism**

In 2015, 360C was trialling products for three Chinese manufacturers. The interviewee stated that all three manufacturers wish to partner with 360C because all three are reluctant or limited in their capability to attempt production beyond imitation.

In the partnership envisaged by all three companies, 360C provides high level technical expertise concerning currency adaptation, EU- and UK-specific product designs, and EU/UK market entry intelligence. In return, the Chinese partner provides 360C with a dependable supply of low price, appropriate quality, central bank-certified cash processing devices that 360C can sell as they see fit.

The interviewee's main reason for resisting these offers is the partners' apparent absence of demonstrated operational capabilities beyond exhibiting, modest marketing, and imitation-based, high-volume, low cost manufacturing. None of the three appear capable of problem solving or developing designs that reflect customers' evolving needs. Nor are they willing to assist 360C in exploring the Chinese market. These deficiencies create an asymmetry that the interviewee believes would become a source of *risk*. The immediate resolution of any quality or delivery failure would be the responsibility of 360C, who would bear all the seller's risks. The Chinese partner, on the other hand, would acquire strategically valuable technical and market knowledge without having to make major investments in 360C, without major disruption to their existing strategy and operations, and without bearing significant risk.

### **7.8 Firm Comparator Key Informant (FK3): UKCeram Products (UK SME, Stoke-on-Trent)**

UKCeram Products, a Stoke-on-Trent-based SME makes, designs, sells, and resells manufacturing-use products for the ceramic industry to customers in the UK and around the world.

UKCeram both sources and sells in China. UKCeram's managers regard their current China-sourcing process as risk-free in terms of both quality and delivery. This contrasts harshly with China-sourced product in the 1990s and 2000s, which often failed to appear, and whose quality the interviewee, JH, described as "rubbish". Generally, the quality of product from Chinese suppliers who sell to multiple western buyers is superior to product from Chinese suppliers who sell mostly to domestic companies. This is due to Chinese suppliers' quality capability being closely geared to the expectations of its main customers.

To UKCeram, the advantages of engaging Chinese suppliers were seductive. Besides low price, Chinese suppliers are close to major sources of minerals and raw materials, the Chinese political environment is stable; the government maintains tight control over the value of the yuan, which contributes significantly to the price competitiveness of China-sourced product; there are vast pools of available human resources; for many commodities, supply often exceeds demand, which creates buyer-advantaging imbalances; the culture is disciplined and supportive of work; workplace conflict is unusual; Chinese workers are industrious.

### **7.8.1 Risk in China Supply**

In previous years, UKCeram outsourced the manufacturing of key products to Chinese suppliers. On the whole, the experiment was unsuccessful. European suppliers, although more expensive, were less problematic: product from European suppliers has higher consistency of quality and less distance to travel; European suppliers are less likely to attempt to manufacture and sell unauthorised products under the buyer's brand name; and the geographical proximity of European suppliers to UKCeram's UK base allows frequent in-person visits by UKCeram buyers.

UKCeram's enthusiasm for expanding its China supply operations declined not only as a result of the factors mentioned above, but also due to (1.) recurrent problems encountered in its China market venturing, and (2.) negative incidents with Chinese companies. The interviewee provided an example of two significant incidents:

1. UKCeram's China distributor sent a China-made copy of a UKCeram product to the UK office. The copy appeared to derive from a sample that UKCeram had exhibited on its stand at a recent trade fair. UKCeram management believes Chinese companies are conscientiously endeavouring to undermine UKCeram in the Chinese market by making low quality replicas of UKCeram's best-selling products. Fortunately for UKCeram, their best-selling China market product is a glaze finishing-sponge that is applied to ware post-firing. To produce the sponge, the copier requires both the exact chemical formula and in-depth knowledge of the process. Obtaining either by trial and error is – UKCeram hopes – impossible.
2. The interviewee reported an attempt to acquire details of a highly valuable production process by visitors from a Chinese ceramics supplier (ostensibly

interested in finding a UK buyer). Managers of several other ceramics-related companies in the locale received the same group of Chinese visitors and observed similar behaviour. From this interviewee, the researcher learned that many managers at UK companies apply a standard practice of physically locking off all sensitive areas of plant when Chinese visitors are present.

### **7.8.2 Managing China Risk**

In UKCeram's experience, ISO certification and other forms of credentials are *unreliable* as measures of a supplier's product or service quality. Uncertified, unaccredited *European* suppliers are often better performers than credentialed European suppliers. In the case of *Chinese* suppliers, selection of high performing suppliers is more risk-fraught. Very broadly speaking, credentialed Chinese suppliers are usually better performers than non-credentialed Chinese suppliers. For fulfilment of infrequent, low volume, or technically uncomplicated orders, selection on credentials often suffices. However, for effective selection of long-term, high volume/high capability, strategically important Chinese suppliers, deep due diligence in the form of background checks, independent verification of quality and reputation, and, ideally, introduction from a mutually trusted party, provide greater reassurance than credentials.

#### **7.8.2.1 Relationships**

UKCeram's managers believe that patience, presence, and relationships of trust underpin their success in China sales and sourcing. The interviewee makes three or four visits per year to China, primarily for the purpose of visiting his distributor and customers, and to exhibit at the trade show. He claims that the first three years of exhibiting gained the company very little in terms of immediate revenue, but have positioned them very well for the long-term.

Like the Chinese, European suppliers appear to perform better if communication and visits are frequent. However, the performance of European suppliers is much less sensitive to relational or interpersonal conditions, making European suppliers simpler and generally less costly to manage. Developing relationships with Chinese suppliers entailed higher levels of cultural and transactional complexity, and was more resource-intensive. When the cost of intellectual property loss and the many sundry costs of China sourcing and



relationship maintenance were factored, the economic argument for China sourcing weakened.

The foregoing notwithstanding, echoing the literature, JH claims that investing time and energy in building trust creates relationships that reduce China-side risk for the foreign buyer and act as conduits of opportunity and resources.

#### *7.8.2.2 The Advantages of the China Distributor*

UKCeram recognise their China distributor as crucial to their China-side trade. Connecting with customers, showcasing products, closing sale, and managing Chinese customers from their office in Crewe (in which there is not a single Chinese speaker) would be impossible tasks. A physically present, China-based, Chinese-speaking, ethnically Chinese representative is an indispensable element of UKCeram's China strategy. UKCeram knows from experience that business by e-mail or any other medium returns very little revenue, but does consume time and patience. Their initial China venturing began with online efforts to both buy and sell in the late 1990s. The sales results were paltry; the standard of the products bought (the few that arrived) was unusably low.

### **7.9 Various Practitioner Key Informants (LKs): (LinkedIn Discussion Forum, Worldwide)**

This section summarises a LinkedIn forum discussion topic. All 26 respondents were China-experienced supply chain and sourcing professionals.

The researcher began the discussion thread (2015) with the following questions:

*So much is written about the difficulties of doing business in China, but what, if anything, are the risks and difficulties today?*

- *What challenges and risks does China present for logistics and procurement professionals?*
- *How unique are these challenges and how are they overcome?*

### 7.9.1 Risk in China Supply

Approximately one third of the responses contributed to the discussion thread expressed the opinion that China sourcing is *in no way significantly more risky than sourcing in any other country*.

A particularly enthusiastic contributor (who, unprompted, identified herself as an Arab) claimed the following:

- ❖ The documentation requirements of Chinese customs are the most common cause of problems.
- ❖ The third-party inspection services provided by Chinese companies are unreliable.
- ❖ Too many Chinese suppliers agree to anything before funds are transferred; when payment is made, very little of the original agreement is present in the final product.
- ❖ The costs of China sourcing are now high, but many of the people working in SCM and logistics are unqualified or poorly skilled compared to SC workers in developed countries.

The preceding list typifies the comments made by most of the respondents who did not have Chinese names. According to the respondents with Chinese names, the typical supply risks faced by foreign companies sourcing in China are as follows:

- ❖ communication problems (which cause delays and poor quality),
- ❖ unexpected charges in addition to payments to suppliers,
- ❖ import/export documentation,
- ❖ transfer of payments to suppliers,
- ❖ product quality assurance,
- ❖ packaging,
- ❖ transport,
- ❖ identification of reliable suppliers, and
- ❖ differing conditions *within* China.

Every respondent made the following two claims, albeit in differing ways:

1. For most foreign companies, *selection* of a suitable (i.e. honest, capable, and punctual) supplier is the most difficult aspect of Chinese sourcing and probably the most important.
2. *All* China sourcing risks can be reduced with the assistance of a reliable Chinese partner. Most risks and problems are best addressed by a Chinese representative in China who is connected to all the relevant parties. However, current preference among foreign companies is for direct dealing with Chinese suppliers, which increases all forms of risk. For most companies, the optimum solution (short of having a permanent office in a major Chinese city) is to contract with a professional China solutions provider such as Li and Fung.

### **7.9.2 Managing China Risk**

The respondents were unanimous in their recommendation of China-side representation as the ideal solution to China supply risk and of 3PLs as a close-running second:

- ❖ Local staff monitor suppliers and pursue claims against inefficient suppliers in China. Foreign companies who cannot afford to base staff permanently in China must communicate regularly with their Chinese partners. Communication by e-mail is preferred by foreign companies, but is far less effective than phone calls.
- ❖ Use of global 3PL companies removes most of the risk from export-oriented Chinese SCs. The need for 3PLs decreases if the foreign company has a permanent China or Hong Kong office.

### **7.9.3 Causes of China Risk**

The respondents' input on the issue of the causes of China risk were enlightening – and offered without elicitation on the part of the researcher (implying these issues have prompted considerable reflection in the professional community). They can be broadly categorised thus.

#### *7.9.3.1 Causes of Risk I. Perceptual*

According to a Chinese respondent, risk is rooted in cultural differences and ways of thinking. Too many companies sourcing in China assume that quality failure is the supplier's responsibility, when product design or communication failure (which can

rarely be reliably attributed to a single party) is often the real cause. For most foreign companies, the best low cost solution to Chinese supply is identification of a dependable partner that is seeking a long-term relationship and has the ability to communicate and improve. Several respondents were in agreement that the more time a foreign buyer can spend with a Chinese supplier, the lower the risks of trading with that supplier.

#### *7.9.3.2 Causes of Risk II. Buying on Price*

Despite well-publicised cautions, many foreigners continue to buy on price after meeting exhibitors at the Canton Fair and other trade shows. Buyers do not check packaging or import restrictions before placing orders. Many fail to clearly explain their exact requirements to the Chinese supplier. These issues create quality and delivery problems but rarely result from incompetence, delinquency, or cynical opportunism by the Chinese supplier.

Many companies assume, often erroneously, that China sourcing will always be cheaper than sourcing in developed countries. Companies neglect to calculate the *total* cost of bringing China-made product to final market. Companies that commit this error are prone to blaming Chinese suppliers for withholding information or feigning ignorance about additional costs. Thus, one of the biggest causes of risk is attitudinal, i.e. excessive expectation and impatience.

#### *7.9.3.3 Causes of Risk III. China's Regional Variance*

Regional variation – in business practices and levels of economic, social, and infrastructural development – within China is often overlooked. Foreign business people assume homogeneity of cultural and infrastructural conditions, often to their cost. For many categories of product, the Chinese supply base is huge, but in parts of China, logistics infrastructure is weak and local transport companies are inefficient. This situation creates a bottleneck: suppliers are plentiful but logistically constrained. Transport, from second tier suppliers and to ports and cities, is often poor.

#### *7.9.3.4 Causes of Risk IV. Personnel*

Employee churn is a significant factor. Capable SC managers are high-value individuals, so change companies frequently. Foreign companies dependent on a

particular manager for control of their SCs are exposed to various risks. The same is the case for managers of important suppliers: their sudden absence can create severe problems.

#### *7.9.3.5 Causes of Risk V. Ignorance of Chinese Systems*








Foreign business people often seem ignorant about China's economy, government, and business customs. Understanding the government and the regulations that influence business is vital. Two examples are the CIQ and export licenses. The Chinese government's inspection and quarantine (CIQ) rules and requirements are often ignored, even by very large companies sourcing in China. Companies try to save costs by bypassing the CIQ test and not providing officially approved translations of required documents. Foreign companies often (usually unknowingly) contract with companies that do not have export licences. The Chinese government has implemented policy to restrict export licences to companies whose quality standards are high. This policy is intended to weaken the perception that Chinese manufacturing means low quality. Unlicensed companies export fraudulently through licensed front companies or false labelling. Goods purchased from unlicensed companies cannot be returned to China for rework or to obtain refunds.



## 7.10 Summary of Other Key informant Findings

### 7.10.1 Risks Reported

Table 18 summarises the supply risks identified by the non-industry key informant expert respondents and indicates the location of the risk-mitigating activities or person.

*Table 18 Other Key informant Sources: Supply Risks Identified and Location of Mitigation*

Supply Risk	Academics		Consultants			Comparator Firms			LinkedIn
	AK1	AK2	CK1	CK2	CK3	FK1	FK2	FK3	LKs
Quality failure			中	中	中		UK/中	UK/中	UK/中
General quality management			中	中	中		UK/中	UK/中	中
Corruption			△	△	△				△
Intellectual Property loss		△	△	△	△			UK/中	△
Logistical failure			中	中	中		UK/中		中
Supplier opportunism			中	中	中				中
Customs issues			中	中	中				中
Overseas customer support									
“Quality fade”				UK/中				UK/中	中

Legend	
	Location of Mitigation
中	China – through China head office, regional office, China-based staff, or frequently China-visiting UK-based Chinese staff
UK/中	UK – through UK-side manager with China-side assistance
	Corporate global head office (strategic supplier strategy)
	Regional customer service centres (ME/Africa, Europe, etc.) and national offices
△	Not actively prevented or resolved (tolerated)

### 7.10.2 Causes of Risks and Modes of Mitigation

Non-industry key informants gave informative insights into the root *causes* of supply risk and the methods by which those causes could be mitigated against. Table 19 (next) describes the causes of supply risk reported by each Key informant source and the corresponding mode of mitigation that they recommended. Industry key informants were asked only to report what China supply risks they had encountered, not to offer their thoughts on the causes of those risks. Nevertheless, several key informants did speculate on the causes of the various risks they reported but none articulated those causes thoroughly.

When considering the content of tables 19 and 20, it is helpful to consider the varying nature of the key informant sources:

- ❖ Key informants FK1, FK2, FK3, and LKs are business professionals actively operating supply into and out of China. Thus, the risk causes they identify are likely based on an understanding of events they have experienced first-hand. Similarly, the modes of mitigation they mention were likely applied in actuality.
- ❖ Two informants (AK1 and AK2) are theoreticians (albeit with decades of exposure to research and practitioners). The risks they report are likely derived from literature; the public, professional, and scholastic media; and the anecdotes and problems conveyed by practitioner students and trainees. Consequently, the modes of mitigation modes they recommend are likely best considered theoretical/conceptual and ideal more than specific and actual.
- ❖ The remaining three non-industry key informant sources (CK1, CK2, and CK3) are consultants, so have extensive and direct knowledge of the typical China supply-related risks that face a great number of companies operating in various industries. The modes of mitigation they recommend are likely more industry-general than those of directly, singularly engaged practitioners, and more actual than the methods recommended by the theoreticians.

The foregoing notwithstanding, all three groups provided causes and modes of mitigation that featured sufficient aspects of commonality to reveal convergence on many points.

Table 19 Other Key informant Sources: Supply Risk Causes and Modes of Mitigation

Supply Risk Cause	Reported By and Mode of Mitigation								
	Academics		Consultants			Comparator Firms			LinkedIn
	AK1	AK2	CK1	CK2	CK3	FK1	FK2	FK3	LKs
Adversarial relationships	✂ ☯	☯	✕	✕	✕		✕	✕	
Low-price buying	☯	☯	✕	✕	✕	✕	✕	✕	✕
Silo thinking	✂ ☯						✕	✕	
Supply-demand imbalance		✂							
Low supply chain resilience	☯	✂ ☯							
Cultural factors/perception	☯	✂ 📖	中	中	中	Δ	📖	📖	📖 中
China unfamiliarity			中	中	中		📖	📖	中
Contacts/personnel factors			中	中	中			中	中
Language barrier			中	中	中		📖	📖	中
Unforeseen or underestimated costs			📖	📖	📖			📖	
Property law			Δ	Δ	Δ				
Labour law			Δ	Δ	Δ				
Exchange rate fluctuation						Δ			
Involvement of officials						Δ			
Lack of agile response						Δ			
Technology lag			☯	☯	☯	💰	☯		
High cost of capturing EU/ US market share						Δ			
Non-specific logistics & supply chain management	☯	☯	中 3PL	中 3PL	中 3PL	3PL		中	中 3PL
Imitation-oriented (non- innovative)						?	?	Δ	
Trust failure	☯	☯	☯	☯	☯		☯	📖 ☯	📖 ☯

Legend	
	Mode of Mitigation
☯	Mutualism/integration and collaboration/relationship and trust building
中	China-side intermediary (paid consultant/solutions provider/customs clearance broker etc.)
3PL	Third-party logistics company
✂	Supply chain reconfiguration/organisational restructuring
✍	Design of products for increased supply chain resilience
📖	1. Research and learning; 2. Application of research to supplier selection decisions and/or interaction
Δ	Not actively prevented or resolved (tolerated)
✕	Not practiced/recommended
Grey	Of less significance to supply risk and relationships than causes in black
?	Interviewee unsure how this risk cause could be addressed
💰	Acquisition of technologically superior supplier



Table 20 (following) provides detailed descriptions of the risks and their corresponding modes of resolution.

*Table 20 China Supply: Risks and Modes of Mitigation Identified by Key Informant Sources*

Key informant	Risk/ Risk Causes*	Frequency	Severity	Mode of Mitigation	Action by
AK1 Stuart Emmett	*Adversarial relationships	High (in UK)	High	Revision of practices, revision of corporate culture; adoption of mutualist approach to supplier management	Top management, trainers; supply managers
	*Low-price buying	Varies by industry but generally declining			
	*Silo thinking				
AK2 Martin Christopher	Supply-demand balancing	High in some industries but generally declining	High	Decoupling/postponement	Top management and supply managers
	Intellectual property loss	Very high (in China)		Source/assemble/install IP-sensitive products outside China	
	*Low supply chain resilience	High in some industries but generally declining		Maximise standardisation at design stage	Designers and supply managers
	*Cultural factors	Low to medium	Generally low	Incorporate cultural factors in supplier selection decision	Supply managers
CK1 Anderson Consulting  &	*Cultural unfamiliarity	High	Moderate	Obtain the services of a China-specialising business consultant or China-solutions package provider; hire proven-good interpreters/translators	Consultants; account manager/ liaison at solutions provider
	*Lack of local contacts	Very high			Low to moderate
	*Language barrier				
	*Low-price buying	Moderate to high (often depends on buyer-supplier relations)	High	Revision of corporate culture and expectations	SME management; consultant; liaison at solutions provider; letters of credit/escrow accounts
	"Quality fade"		Moderate	Pre-selection due diligence and checks; introduction by trusted intermediary	
	Supplier opportunism	Very high			Moderate to high
	Customs issues				

Key informant	Risk/ Risk Causes*	Frequency	Severity	Mode of Mitigation	Action by
<b>CK2</b> Cargo East Asia  <b>&amp;</b>  <b>CK3</b> Cargo East Asia & China-Britain Business Council	*Unforeseen or under-estimated costs	High	High	Prior research; meetings with consultants/ solutions provider	SME management with assistance from consultant/ liaison at solutions provider
	*Property law	High if trying to buy	High	Rent instead of buying; outsource to third-party suppliers	
	*Labour law	High if hiring directly		Outsource to third-party suppliers	
	*Corruption	Moderate for SMEs; high for global MNEs	Moderate	Acceptance (for SMEs); zero tolerance (for global MNEs – depends on relationship with local government)	
	Intellectual property loss	Very high	Very high	Source/assemble/ins tall IP-sensitive products outside China; acceptance	Consultant/ liaison at solutions provider
	Quality control	High	High	Pre-shipping checks	
	General China logistics	Moderate	High	International 3PLs; use solutions provider with contacts in local logistics firms	Liaison at solutions provider
<b>FK1</b> SCMG	Exchange rate fluctuation	High	High	Acceptance	Central government
	Involvement of officials	Very high	Moderate	Results from state-ownership; acceptance	Top management, party members on the board
	Lack of agile response	Moderate			
	*Technology lag	n/a	Moderate to high	Strategic supplier acquisition	
	High cost of capturing EU/ US market share			Concentrate internationalisation strategy on developing countries	
	Logistics & supply chain	Very low	Very low	Clustering; selection of nearest suppliers; relocation of distant suppliers; central China location of plant	Supply chain and logistics managers

Key informant	Risk/ Risk Causes*	Frequency	Severity	Mode of Mitigation	Action by
FK1 SCMG	Overseas sales and technical support	Moderate	Low	Regional offices; dedicated overseas support division at Xuzhou headquarters; multilingual personnel assisting technical experts	National office-located customer account managers, experts, and sales staff; multilingual staff and technical experts at regional support hubs (Germany, Dubai, etc.); multilingual staff and technical experts at China HQ
	Supplier quality performance	Very low	High	Competitive bidding process; continuous quality testing	SC and logistics managers
FK2 360C	*Imitation-oriented (non-innovative)	High (all companies to date)	Moderate (likely to rise as relations improve)	Collaborative design; capitalise on other strengths (e.g. high volume capability)	SME management & Chinese partners
	Delivery failure	Low	Low	Hold stock in UK; implement some variant of the Israeli method	
	Quality failure	Moderate	High	Test in UK before sending to customer; implement some variant of the Israeli method; use video to report faults to suppliers	
	*Language barrier	Moderate	Moderate	Use Simplified English; learn Chinese; use video to report faults to suppliers	SME management
	*Trust failure	Moderate	High	In-person visits; frequent contact with managers at partner companies; steady orders of gradually increasing volume; long-term planning	
	Delivery failure	Low	Moderate	Begin with low-	China distributor/

Key informant	Risk/ Risk Causes*	Frequency	Severity	Mode of Mitigation	Action by
FK3 UKCeram Products	Quality failure	Low	High	volume trial orders, increase volume if fulfilment is to specification; monitoring and communication with supplier; select trusted supplier	China supplier liaison
	*Trust failure	Moderate	High	In-person visits; frequent contact with buyers; steady orders of gradually increasing volume; long-term planning	*SME managers & managers at Chinese suppliers and customers
	*Language barrier	High	Low	Learn Chinese	SME managers
LKs Supply managers' discussion thread (online via LinkedIn)	Communication problems	High	High	Local contacts; pre-screened translator/interpreter pool;	China-based representative; hired intermediary (consultant or China solutions provide); customs clearance broker; import company liaison
	Unexpected charges	High	Moderate	Research; consultants	
	Import/export documentation	Very high	Moderate		
	Transfer of payments	Low	Low		
	Quality assurance	Moderate	High	Pre-shipping checks; sample testing by third-party quality assurance companies	
	Packaging	High	Moderate	Pre-contract checks; factory visits; sample testing	
	Transport inside Chinese interior	Moderate	High	Local contacts; relationship with transport companies	
	Regional variance	High	High	Research; consultants	
	Supplier identification	High	Very high	Certification; consultants; background checks	
	Buying on price	High	Very high	Corporate culture adjustment	SME managers
		Export license possession	Moderate	High	Background checks; due diligence;

Legend	
Grey	Of less significance to supply risk and relationships than causes in black

In the following chapter, the main themes of the literature (as revealed in the *Literature* chapter) are compared with the findings of the case studies, key informant interviews, and the online discussion.



## 8. Discussion I. The Findings' Fit with the Literature

In this chapter, the findings of the case studies and key informant interviews are related back to dominant themes in the literature. Areas of convergence and divergence between the findings and the literature are revealed.

### 8.1. Background and Concepts

Table 21 (below) summarises the findings of this research in terms of its degree of compliance with the background and fundamental concepts of SC and SCM as articulated in the literature reviewed.

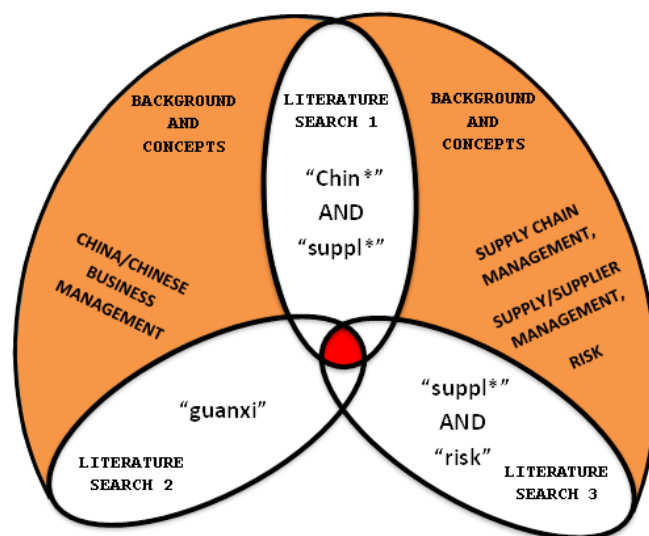
*Table 21 Compliance of Findings with the Background and Concepts Literature*

			1. Traditional narrative review. Background and Concepts							
			Themes/Subsections							
Sources			SCM definitions	SCM philosophy	Lean	Agile	Quick Response & Efficient Customer Response	Postponement & Mass Customization	Early Supplier Involvement	Chinese relationships & business
Case Studies	MNEs	CS1	✓	✓	△	-	-	-	✓✓	✓
		CS2	✓	✓	△	-	-	-	✓✓	✓
Key Informants	MNEs	IK1	✓	✓	△	-	-	-	✓✓	✓
		IK2	✓	✓	△	-	-	-	✓✓	✓
	UK SMES	IK3	✓	✓	△	-	-	-	✓	✓✓
		IK4	✓	✓	△	-	-	-	✓	✓✓
		IK5	✓	✓	△	✓	-	✓✓	✓✓	✓✓
		IK6	✓	✓	△	✓	-	✓✓	✓✓	✓✓
	Academics	AK1	✓✓	✓✓	✓✓	✓✓	-	✓✓	✓✓	✓
		AK2	✓✓	✓✓	✓✓	✓✓	-	-	✓✓	✓
	Consultants	CK1	-	-	-	-	-	-	-	✕✕
		CK2	-	-	-	-	-	-	-	✕
		CK3	-	-	-	-	-	-	-	✕
	Comparators	FK1	✓	✓	-	-	-	-	-	✓
		FK2	✓	✓	△	-	-	-	-	✓
		FK3	✓	✓	△	-	-	-	-	✓
LKs		-	-	-	-	-	-	-	✓	

Legend	
Degree of Compliance with Consensus of Literature	
✓✓	Very strong
✓	Strong
△	Weak (concept was implied or mentioned but considered weak)
-	Nothing relatable mentioned
✗	Conflicts with consensus
✗✗	Opposite of consensus

Relatively late in the evolution of the term *supply chain*, Lambert *et al* (1998) defined SCs as “aligned companies”. Introduced in *Discussion II*, the “MNE diamond” depicts supplier-buyer alignment as evidenced by the data that emerged from the key informants in this research and was particularly strong in the MNE cases and.

Figure 25 Background and Concepts in the Literature



Christopher (1992, p.10) describes SCs as “networks of organisations linked by different value producing activities”. The SCs described in this research are intrinsically multiple-organisation entities, but the internalizing vertical integration practices adopted by four MNEs had effectively reduced various forms of risk.

Christopher and Peck (2004) describe SCs as *dynamic networks of interrelated firms*. The MNEs studied in this research operate China supply networks of partners – most are integrated, some are arm’s-length, but *critical* partners are typically incorporated/vertically integrated by acquisitions. Unfavourable MNE-supplier relationships (only a few were reported) are those typically involving supply partners that are selected by the Chinese government, not by the MNE or by supplier self-petition. SMEs also achieve risk-reducing integrated China supply, but through informal mechanisms: as predicted by the literature, relationships between individual managers permits access to their China-side suppliers’ resource networks, which have a valuable risk-reducing function.

Regarding the development of the SC *concept*, the following authors’ definitions correspond most closely with the supply arrangements observed in this research: Stevens (1989) – SCs are multiple entity, multiple function, *incorporative systems*; Aitken (1998) – SCs are networks whose members work together mutually and



cooperatively; Morehouse (1998) – SCs are extended enterprises linked by *relationships*; Handfield and Nichols (1999) – *relationships enable management* of SCs, which are firms *integrated* for competitive advantage; Peck (2010) – SCs *link organisations* together by tangible and intangible enablers such as *relationships*.

Post-2001 research (e.g. Ritchie and Brindley, 2007) shows a strengthening interest in exploration of the *relational* aspects of SCs, especially in the creation and management of organisation-linking relationships, and the ability of integrated, relationship-bound entities to share risk and liability. The findings of this research suggest the exploration is justified: *interpersonal* relationships – *in the case of SMEs* – impact strongly on supply-related risk; *organisational* relationships – *in the case of MNEs* – are found to impact strongly on supply-related risk.

Of the various concepts that are analogous with *supply chain management* (SCM), the following are associable with the supply arrangements revealed by the case studies and key informant experts presented in this research: Burt (1984) – *integrated* purchasing strategy; Ellram (1991) – *vertical integration*; Lamming (1993) – the mutualist buyer-supplier relationship. Integration and relationships are recurrent themes in this research's findings.

Houlihan (1984, 1985, 1987) uses the term *supply chain management* to denote *internal* integration. This concept was described as essential “internal alignment” by one industry key informant, and the principle was referred to variously by several consultant key informants. Later, this is developed more theoretically, based on these findings (see “Alignment 1”, “Alignment 2”, and the “MNE diamond”). A key academic informant (Emmett) re-stated one of the essential premises of his book *The Relationship-Driven Supply Chain* with the useful phrase “winning the home games first”. By this, he refers to internal integration – the eradication of functional silos – *as the first phase of supplier integration*.

As with the definitions of SC, integration and relationships receive emphatic position in most of the influential definitions of SCM. The following authors' definitions correspond most closely with the supply principles and practices reported by the case study respondents and key informants:

- ❖ Forrester (1958) – *integration comes through relationships* between companies; Oliver and Webber (1982) – SCs must be strongly *integrated and managed as a single, whole entity*;
- ❖ Houlihan (1988) – integration between SC operating companies is superior to interfacing (which describes the pre-SCM, arm's-length approach to buyer-supplier interaction);
- ❖ Ellram (1993) – SCM is a form of *vertical integration*, an *ethos of integration, cooperation, and coordinated work*;
- ❖ Berry *et al* (1995) – SCM builds trust through exchange of information to create meaningful, *long-term relationships between cooperating firms*;
- ❖ Lambert *et al* (1998) – SCM is the *integration of key business processes* and the *management of relationships* between SC members;
- ❖ Simchi-Levi *et al* (2000) – SCM is a set of approaches use to *integrate the functions and companies* involved in the SC;
- ❖ CSCMP (2010) – SCM involves coordination and collaboration between suppliers, *intermediaries*, and third-party companies.

This final definition is highly pertinent: many key informant experts recommended intermediaries and third-party involvement as vital to reducing China supply risk. The UK SMEs were unanimous in their practice of culture- and geography-spanning “key China persons” (my coinage), who effectively operate as in-house intermediaries, smoothing communications, shuttling between UK buyer and China suppliers, providing a cultural/linguistic interface, and asserting regular physical China-side presence.

In sum, relationships and integration are common elements of the theories of SCM and recurrent concerns of the practitioners, theorists, and consultants interviewed in this research.

On the issue of risk and resilience in SCM, Cooper *et al* (1997) claim that the elongation of SCs has created risks beyond those present in the preceding era of “logistics”. Waters (2007) defines supply risk as mostly related to fulfilment issues. All the SME cases and two consultant key informants reported fulfilment risk as their main, but steadily lessening, cause of dissatisfaction with China supply. MNE

respondents reported minor instances of fulfilment failure, but were not overly concerned with risk of this sort. MNE respondents reported that macro-economic and political factors were the main sources of risk; fulfilment risk, although present, is a comparatively minor concern.

MNEs reduce the risk of fulfilment failure mostly by *formal* methods, i.e. by imposing strong performance and contractual conditions on suppliers. The global MNEs practice in-country mediation via their f China-side facilities and offices, joint-ventures, and partnerships with domestic and international logistics companies.

SMEs reduce fulfilment risk mostly by *informal* methods, i.e. the exercise of relational influence: when a strong supplier-buyer relationship has developed, SMEs generally experience fewer instances of the fulfilment failure that can occur when the relationship is immature or mutualism is low. However, both MNEs and SMEs make concerted efforts to create trust relationships with the managers of their Chinese suppliers. Both sets of respondents reported the tendency of risk to diminish in rough proportion to the degree of mutualism and collaboration in the supplier-buyer relationship.

Manuj and Mentzer (2008) claimed that internationally operating firms manage complex SCs, whose performance depends on multiple variables including cultural and interpersonal factors. In the logistics and SCM literature however, concentration has to date been upon the operational and structural influences of SC performance. The SME cases explored in this research provide support for the importance of relationships to achieving integration, collaboration and, as result of these two, risk reduction.

Harland *et al* (2003) describe several advantages of global SCs: low-cost outsourcing, economies of location, and advantageous currency differentials. All four SME cases (and two industry key informants) reported similar enticements. On the evolution of the concept of risk in relation to supply specifically, several authors' definitions of risk correspond closely with the accounts provided by this research's respondents. Emmett (2005, p. 278): "risk is the product of internal factors such as "weak links and choke points, and external factors such as material availability and other macro-economic considerations." "Weak links and choke points" were reported by UK SMEs and consultants. They include Chinese transport

companies, customs, and geographical conditions. No such weak links were reported by MNE respondents.

“Material availability and other macro-economic considerations” (particularly the latter) describe the main concerns of MNEs operating supply in China. Material availability is addressed by partnering with large, state-involved, cluster-located suppliers with strong tier 2 control. Macro-economic conditions are best addressed by close relationships with the Chinese government and the global dispersion of supply, which provides redundancy in the event of regional or national calamity. Tiffin and Kissling (2007) claim that supply risk increases in accordance with the number of handoffs along the chain. The preference of three of the UK SMEs for a very narrow China supply base (narrowed by joint-venture or partnership with a single, very high-capability supplier) provides support for this claim.

March and Shapira (1987) mentioned the social norms that influence managers’ perception of risk. This is one of very few studies that propose that future theories of supply risk incorporate consideration of the psychosocial factors that influence managers. In cross-cultural situations, such theorising would necessarily include some account of perceptual differences between Chinese and non-Chinese managers. This research considers risk primarily from the perspective of the non-Chinese manager (the foreign buyer, for example). To obtain some key informant expert perspective on the *Chinese* perception of risk, a Chinese manager at a Chinese MNE (SCMG) was consulted. In common with the other MNE respondents, the Chinese manager reported macro-economic conditions as major sources of risk (along with the involvement of Communist Party members in strategic governance, which was the only unique difference). To all MNE respondents, the traditional concerns of SCM and logistics (quality and efficiency of fulfilment) were trivial. To SME respondents, they were present but minor risks.

Manners-Bell *et al* (2014) asserts that manufacturing in emerging markets is always more risky than manufacturing in developed countries. Contradicting this, respondents from three SMEs reported that China sourcing is no less risky than sourcing from European companies. Two MNE respondents claimed that China sourcing is slightly better than sourcing in most emerging economies, but its

attractiveness can be undermined by the threat of IP loss and corruption, against which Chinese law is usually ineffectual.

Jüttner *et al* (2003) claim *collaboration* is key to reducing SC vulnerability. Feedback from the SME respondents suggests strong, collaborative supplier-buyer relationships do indeed reduce SC vulnerability. Most articles about SC resilience/vulnerability focus on the development of risk-reducing capabilities, i.e. capability elevation and distribution efficiency.

However, this study shows that high level, formal integration/collaboration is an ideal that geographically disparate, small scale companies can seldom achieve. Strong relationships are however achievable. For SMEs, this is achieved most easily through regular visits, frequent communication, and as much in-person interaction as possible. For MNEs, deep, formal, organisation-level collaboration is not only possible and practical, it is strategically useful. Collaborating with Chinese suppliers brings the MNE closer to its Chinese *customers and competitors*, and collaboration with state-owned enterprises reinforces the MNE's relationship with the Chinese government. MNEs also have the luxury of deputising their China-side supplier relationship and management activities to a permanent China office staffed by ethnic Chinese.

Regarding the tools of SC risk management (agile, lean, postponement, etc.), the SME, MNE, and other key informant respondents had little to report. In most cases, buyers had contracted with suppliers based on product satisfaction, and considered efficiency processes to be the internal concern of the supplier, and not a condition of trade. Several SME sources claimed that the processes of their Chinese suppliers are "world-class". Similarly, as a general rule, the larger MNEs only consider contracting with Chinese suppliers that meet global and/or ISO standards.

Buyers may recognise the value of lean supply, but time-based inventory systems are impractical when product is being shipped internationally (the D2C key informant's system is a case in point – shipping is direct from factory gate to customer doorstep on the simple basis of ASAP). The much-lauded Toyota approach to buyer-supplier collaboration (Ohno, 1988) offers great promise, but its implementation in systems whose actors are physically and culturally distant seems

a precarious prospect not evidenced by the data presented here. Indeed, Hall (2004) argues that Japanese *cultural homogeneity* and *domestic proximity* permits the very high level of collaboration and integration enjoyed by Toyota and suppliers. The findings of this research seem to corroborate the proximity claim, but the homogeneity claim is difficult to test. Similarly, Burt and Doyle (1994) claim that Japanese companies reduce costs through working relationships, but cultural factors influence such partnerships. Thus, it appears that a small number of theorists acknowledge that cultural factors are likely influencers of approaches to supply risk management. In terms of the findings of this research however, relatively little risk was attributed to culture – unless “culture” can be conceptually extended to cover the macroeconomic idiosyncrasies of the Chinese business and political landscape. The literature is quiet on this possibility and particularly quiet on the issue of whether culture is separable from national norms and regulations as they pertain to business.

Tools such as lean, agile, leagile, and postponement demand tight interaction/high visibility between SC entities, but the literature seems to avoid informing the readership on the nature of the requisite relationships. The reluctance of foreign buyers to explicitly specify supplier capabilities with regard to lean and agile etc. is perhaps explicable: the practitioners interviewed seemed to realise that communication complexities and physical distance diminish the benefits of Toyota-like operational methods of supply risk reduction. Moreover, if quality, delivery, and price are satisfactory, then risk may be considered already adequately addressed, obviating recourse to operational revisions.

Leanness may also create SC vulnerability (Christopher, 2011a, b; Lee *et al*, 1997). Inventory-light systems lack buffer. In terms of Chinese supply, this would be China-side make-to-stock production and UK-side storage. The two larger UK SMEs (R-UK and P-S) accumulate their China sourced product in their UK facilities. When they receive orders, product is adapted to customer specification (if necessary), and then shipped. These systems are inventory-intensive, so cannot be considered lean, but provide agility and harness the strengths of postponement. SC disruption risk can often be reduced by the concentration of buffer inventory close to market. The smaller SMEs avoid this option, arranging drop shipping to the customer’s door. These SME respondents claimed that China-side logistical disruptions are very rare

events, and that their China-sourced product is built to customer-specification in China and usually high volume in nature. All the SMEs use the services of third-party logistics providers to ensure on-time delivery.

Agile, an oft-touted, rarely explicitly exemplified concept, may be impractical to implement in the Chinese supply scenario, at least for companies whose markets are geographically remote from their China sources. According to Christopher (2003), SC agility is the ability of organisations to respond speedily to demand changes. A problem arises if an existing supplier does not possess the required level of agility. According to the SME key informants, relationship formation and integration are time-intensive, continuous endeavours. Building relationships with Chinese suppliers is a gradual process. Acquiring and disposing of suppliers according to demand change may be economically desirable, but is likely unworkable. Risk reduction seems to correlate with relationship quality. Relationship quality increases with collaboration between companies and in-person interaction between managers, neither of which are hasty processes. Agile is however considered by some theorists (e.g. Christopher) as a *philosophy*. This might explain the absence in the literature of recommendations concerning implementable methods of agility.

In the case of our SMEs, agility is achieved by *market intelligence*. The two smaller SMEs (D2C and OEM) have strong customer-facing connectivity. Production orders are issued to China in response to near-as-known market demand. The sociographs of these two companies reveal that their China-side supply capabilities are reflective of and proportional to their UK-side market capabilities.

Practices resembling Quick Response, Efficient Customer Response were not reported by any MNE or SME respondents. Postponement and mass customisation were however evident in the systems of the two larger UK SMEs (who ship generic, china-sourced inventory to their UK facilities for modification according to customer requirement, most of their customers being in the UK or Europe). FEM (an MNE) also “integrate” their China-sourced product at the site of installation and provide modification at facilities as close as possible to site.)

Elements of Early Supplier Involvement are inferable in the cases of AFC, FEM, and CT. All three have deep involvement in joint-ventures with state-owned

companies. Many of the larger joint-ventures were initiated to capture the insights and contacts possessed by the Chinese partner. When devising solutions, these MNEs draw on supplier capability and connectedness, since these are likely influencers of design options and China market-fit.

The first literature stream (*Background and Concepts*) revealed that relationships underpin *all* the major tools of SC risk management, i.e. lean, agile, QR/ECR, postponement, ESI, etc. However, the role of the relationship itself as a method of risk management in culturally specific contexts has received scant attention. In the context of China, relationships of all types, including business, are encoded in the Chinese term *guanxi*. A review of the literature by Wilkinson (2011) revealed that among other things, *guanxi* enables access to resources, addresses weaknesses in formal institutions, is trust-based, influences business prospects, and evolves from emotional to instrumental tie.

According to Limlingan (1986), the traditional Chinese firm is *guanxi*-biased, suggesting that Chinese business practice is highly relational, and that *guanxi* could therefore be an obstacle for non-Chinese companies attempting to integrate with Chinese companies. However, the latter supposition is challenged by the evidence of this research: *only one respondent* (an SME director) *mentioned guanxi unprompted*; no MNE respondents mentioned *guanxi* directly, although some hinted at less-than-desirable interactions with government people. The general absence of *guanxi* in the accounts of the respondents suggests its importance is overstated in the literature. The issue of *guanxi* – the conceptually broad Chinese term for relationships – receives more detailed discussion in the second literature stream.



## 8.2. China and Supply

Table 22 (below) summarises the findings of this research in terms of its degree of compliance with the literature on China and supply management.

*Table 22 Compliance of Findings with the China and Supply Management Literature*

			2. Systematic literature search #1. China and Supply Management										
			Themes/Subsections										
Sources			Guanxi (specifically)	Relationships	Strategic supply management	Global sourcing and outsourcing	Strategic SC management	Logistics	Quality	Collaboration and integration	Liabilities of foreignness	Informal control is insufficient	Intermediaries
Case Studies	MNEs	CS1	△	✓	✓✓	✓✓	✓	△	△	✓✓	✓	✓✓	✓✓
		CS2	△	✓	✓✓	✓✓	✓	△	△	✓✓	✓	✓✓	✓✓
Key Informants	MNEs	IK1	△	✓	✓✓	✓✓	✓	△	△	✓✓	✓	✓✓	✓✓
		IK2	△	✓	✓✓	✓✓	✓	△	△	✓✓	✓	✓✓	✓✓
		IK3	△	✓	✓✓	✓✓	✓	△	△	✓✓	✓	△	✓✓
		IK4	△	✓	✓✓	✓✓	✓	△	△	✓✓	✓	△	✓✓
	UK SMES	IK5	✓	✓	✓✓	✓✓	✓	△	△	✓✓	✓	△	✓✓
		IK6	△	✓	✓✓	✓✓	✓	△	△	✓✓	✓	△	✓✓
	Academics	AK1	-	✓✓	✓✓	✓✓	✓✓	✓	✓	✓✓	✓	✓	△
		AK2	✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓✓	✓	✓	△
	Consultants	CK1	✗ ✗	✓	△	△	△	✓	✓	✗	✓	✗	✓✓
		CK2	✗	✓	△	△	✓	✓	✓	-	✓✓	✗	✓✓
		CK3	✗	✓	△	△	✓	✓	✓	-	✓✓	✗	✓✓
	Comparators	FK1	-	✓	✓	-	-	△	△	✓	✗	△	-
		FK2	✓	✓	✓✓	-	-	✓	✓	✓	✓	✗	-
		FK3	✓	✓	△	-	-	✓	✓	△	✓	✗	✓✓
		LKs	✗	✓	-	-		✓	✓	-	✓✓	✓✓	✓✓

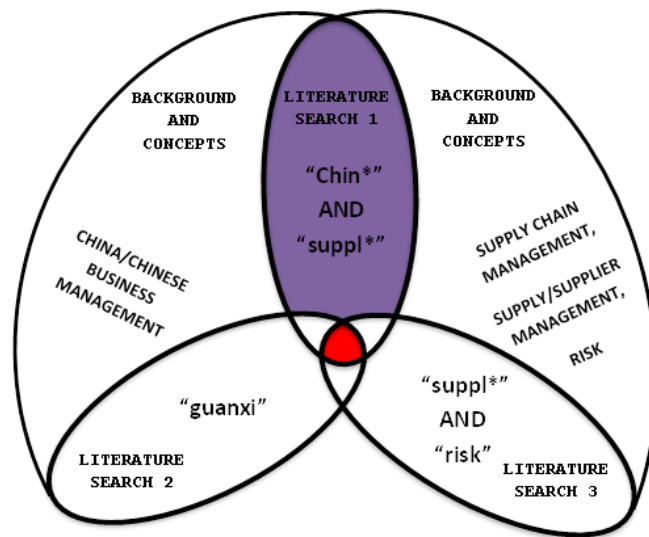
Legend	
Degree of Compliance with Consensus of Literature	
✓✓	Very strong
✓	Strong
△	Weak (concept was implied or mentioned but considered weak)
-	Nothing relatable mentioned
✗	Conflicts with consensus
✗✗	Opposite of consensus

In Chinese supply management, relationship quality exerts significant influence on strategic purchasing, outsourcing, and supplier capability – the three most critical aspects of SCM, making relational proficiency a valuable asset for effective Chinese supply management.

Figure 26 “chin\*” AND “suppl\*” in the Literature

There is ambiguity in the literature on whether “relationship” and “guanxi” describe the interaction of organisations, of individuals representing organisations, or both.

For instance, Lee and Humphreys (2007) equate guanxi with Chinese relationships in the *interpersonal* sense (in Chinese, the term “guanxi” normally describes only human-to-human relationships). The MNE informants did not use the word “guanxi”. MNE informants used “relationships” to describe *organisational* partnerships. SME informants used “relationships” – and occasionally “guanxi” – to refer to ties between identifiable, company-representing *individuals*. Thus, in the SME sense, “relationships” and “guanxi” were used interchangeably to refer both to organisational and interpersonal connections. It is possible that the infrequency of the word “guanxi” (by all informants) was due to the informants’ ignorance of the term (unlikely considering their many years of China supply) or their equation of guanxi with relationships.



In the case of the MNE informants, the non-culturally specific recommendations of the SCM literature regarding the advantages of close buyer-supplier relationships are supported. For the MNEs examined, there appears to be no aspects of Chinese supply that are unique or uniquely sensitive to *guanxi*. That is, interpersonal factors such as relationships seem only as important to managing risk in supply as they are elsewhere: guanxi imposes no exceptionality and requires no adjustment of the advantage-through-collaboration concept that is core to the SCM paradigm.

Supporting this notion, Wiley *et al* (2006) and Björkmann and Kock (1995) argued that relational business is not unique to China. The input of all four MNE informants in this study supports this claim. All four MNEs source multi-nationally and report the existence of similarities across emerging economies.

The global MNE case studies and MNE key informants support the claims of Sternquist and Wang (2010): state-influenced firms are less susceptible to influence by guanxi. No MNE informants mentioned guanxi explicitly, despite all four MNEs having considerable collaboration with state-owned companies.

For the SMEs however, interpersonal factors, i.e. human-to-human relationships, appear to be a crucial concern. All the SME narratives featured accounts of trust-building activities that preceded risk-reducing efficiencies and transaction confidence. The SME findings comply with the general consensus of the literature on guanxi and business.

Researchers (Styles and Ambler, 2003, and Cheng *et al*, 2012 *inter alios*) allege that Chinese society is highly relational and that relational approaches characterise Chinese business patterns. The SME findings of this research are generally in agreement, but find that supplier loyalty and performance is linked to relational methods and to sales and other tangible gestures of commitment.

All the SME and several non-industry key informants in this research professed the importance of having positive *relationships*, not guanxi *per se*, with their Chinese suppliers. Names were stated, and respective roles and communication practices were described. As mentioned earlier, only one key informant (an SME manager) explicitly identified a relationship as “guanxi”.

The findings from the SME key informants support the findings of Barnes *et al* (2011), who found that relationships (which they term “guanxi”) are an important influence of performance in Chinese supply, contributing to cooperation, coordination and generally improved supplier performance.

The SME key informants confirmed the claim by Ren *et al* (2009 and 2010) that guanxi-like relationships develop trust, which is superior to contracts and other formal methods as a means of control and reassurance. The findings of Su *et al* (2009) offer further confirmation: macro-economic and cultural factors, such as interpersonal influence, have a strong effect on organisational culture. Therefore, companies (especially smaller companies, if this research is indicative) wishing to partner with Chinese suppliers must recognise that trust-building is a powerful

determinant of performance and risk, and risk-reducing guanxi will likely eventually develop out of trust-building interaction.

Li and Sheng (2011) caution that guanxi/interpersonal relationships alone – whether with government officials, business people, or competitors – are *insufficient* as a guarantee of business performance. This research concurs: in all four SME and two MNE key informant cases, a combination of informal methods (guanxi/interpersonal relationships) and formal methods (contracts, KPIs, etc.) were used to reduce quality risk.

The SME findings of this research confirm the cross-cultural study by Mavondo and Rodrigo (2001), who found interpersonal relationships to be *vital* to forming and enhancing organisational relationships.

The business-by-guanxi recommendation is generally supported by this research, but with significant caveats:

- Guanxi is less important for very large (global) MNEs with strong ties to government and sourcing highly regulated product in a buyer's market;
- “guanxi” practice may be simply an alternative term for the effective management of supplier-buyer relationships in China; and
- the SCM principle of collaboration and relationships need not be significantly adapted to incorporate China-specific cultural factors, merely rationally applied (according to factors such as company size and ambition).

This research also reinforces the findings of a supply-relevant study by Cai *et al* (2010). Trust and information flow between Chinese suppliers and buyers is influenced by a trinity of factors: guanxi, government control, and legal protection. The evidence of this research suggests that for SMEs, interpersonal relationships (“guanxi” by these authors’ terms) are the most effective of the three. For MNEs however, government control and legal protection are stronger. But SMEs (via their intermediating “key China person”) and MNEs (via their Chinese-staffed China offices) use varied combinations of all three to reduce risk.

According to Jansson *et al* (2007), Chinese business networks are patient and long-term oriented. To gain acceptance into a Chinese business network, Western partners are expected to invest deeply in their Chinese partners. The case study of the largest SME provides some support for this assertion: R-UK formed a joint-venture with their most important Chinese partner, and thereby gained access to the deeper network of the China-side manager. R-UK and the individual who organised the joint-venture had been engaged in China sourcing and selling for around a decade prior to the formation of the joint-venture.

A strategy of long-term relationship development characterises the approaches of both the SMEs and MNEs examined in this research. The prudence of this method is reinforced by Duanmu and Fai (2007), who demonstrated that the nature of knowledge transferred between foreign companies and their Chinese suppliers improves as their relationship and collaboration deepens. The CT and FEM cases support this: both companies have been investing in and upskilling Chinese suppliers since the 1990s.

To Tate *et al* (2009), buyer-supplier relationships are evolving from tactical to strategic. The SMEs and MNEs in this study have incorporated Chinese supply into their long-term strategies. Li *et al* (2006b) found that strategic China sourcing – if characterised by high levels of risk-reducing integration – generates competitive advantage and improved organisational performance. All eight industry studies show a generally positive picture of Chinese supply. The SMEs all reported significant cost savings as a result of concentrating supply in China.

Overall, this study indicates a high degree of congruence between the relationship-favouring Chinese business environment and the mutualist, collaborative, integration concepts that underpin SCM principles. Handfield and Nichols (2004), by contrast, found that foreign companies operating SCs in China struggle to develop the necessary risk-reducing business relationships with Chinese suppliers. It seems that much has improved in China between 2004 and the present. Several key informants alleged that 10 years ago, quality risk and delivery risk was far greater problems than they are today.

Kotabe *et al* (2008) note that outsourcing to lower-cost producers associates strongly with two particular risks: quality and delay. The SME informants reported these same two risks as the most prevalent affecting China supply. The general cost benefits of China outsourcing/manufacturing, however, compensate for these risks. All respondents were generally positive about their China supply experiences, and reported that risk related to both quality and delivery is declining rapidly.

Both SMEs and MNEs prefer to contract with suppliers who are located in or around clusters. Schiele (2006) recommends that core suppliers should be located near buyers, and that suppliers and buyers should be bound by a trust relationship in which there is significant interaction. The SME informants endorse this recommendation strongly. Jiang (2002) showed that foreign companies are strengthening their China supply reliability by use of international third-party logistics firms, use of local carriers inside China, and favouring suppliers who are enmeshed in clusters. These three methods are strongly recommended by a consultant key informant, and are also well established practice for four of the SMEs examined in this research.

“Quality” in SC relationships is a composite of trust, adaptation, cooperation, and communication (Su *et al*, 2008). All eight industry informants made statements that support the importance of quality and the necessity of building trust, adapting to cultural and macro-economic unfamiliarity, corporative working, and regular communication, ideally in-person interaction.

Like our SME respondents, Salmi (2006) reported that quality and general success in China sourcing is dependent on a long-term, relational approach. Such an approach enables the Chinese partner to address product quality risk. Relationship quality also improves gradually with time, and the effectiveness of foreign managers in their dealings with Chinese suppliers seems contingent on language, cultural literacy, social skills and appreciation of the Chinese culture. All the SME respondents reported an enthusiasm for visiting China and understanding Chinese business practices. Two SME managers are even learning Chinese. All stated that their efforts are highly appreciated by their Chinese counterparts.

This research does not find that “quality fade” risk (Midler, 2009; Berman and Swani, 2010) is characteristic of Chinese supply. No MNE or SME respondent recalled instances of quality fade. One consultant key informant stated that quality fade is the inevitable outcome of foreign buyers imposing unreasonable cost pressures on Chinese suppliers, resulting in reckless “cost-cutting” practices.

Towers and Song (2010) revealed that the main challenges facing UK companies sourcing in China relate to delivery, negotiation, language barriers and Chinese business style and practices. All four were reported by consultant and SME key informants. Delivery failure is generally resolved by use of international 3PLs; the remaining three are addressed by China presence, learning, and the use of an experienced third-party intermediary or China solutions provider (such as Li and Fung), or by the involvement of a “key China person”, which is the preferred method in the four SME cases investigated.

According to Wilson (2007) and Child (2009), for MNEs operating in China, joint-ventures are now far less popular than wholly-owned foreign enterprises (WOFEs). Three of the four MNE cases indicate that joint-ventures retain value for MNEs that have long-term China market ambitions and are attempting to increase their proximity to the Chinese government, which is a highly influential institution. One SME case (Ritchie UK) is also benefiting from its 2010 entry into a joint-venture (R-Hua) with a company that was formerly R-UK’s main supplier.

Liu and Wang (1999), Pressey and Qiu (2007), and Vedel and Ellegaard (2013) stressed the advantages of using well-connected third-party intermediaries (consultants and/or China solutions providers). Not surprisingly perhaps, the consultant key informants praised the risk-reducing and cost-saving capabilities of effective intermediaries. Consultants and China solution providers can provide matchmaking services, whereby the foreign buyer is introduced to a duly checked, fully verified Chinese supplier. This reduces selection risk, which was reported by the LinkedIn respondents as a major determinant of effective China supply.

Intermediaries perform a range of valuable, problem-solving, transaction-smoothing activities that remove much of the risk present in China supply. These can range

from tangible activities such as customs clearance and the processing of bureaucratic documentation, to intangible but vital activities such as face-saving, negotiation training, and interpreting/translating. The sum of these activities can significantly offset the liabilities of foreignness that are acutely disadvantageous to China novices. None of the MNE or SME practitioners reported use of third-party intermediaries, although one MNE respondent said that very occasionally his company does use consultants, but usually in human resource-related matters.

### 8.3. Guanxi

Table 23 (below) summarises the findings of this research in terms of its degree of compliance with the literature on guanxi.

*Table 23 Compliance of Findings with the Guanxi Literature*

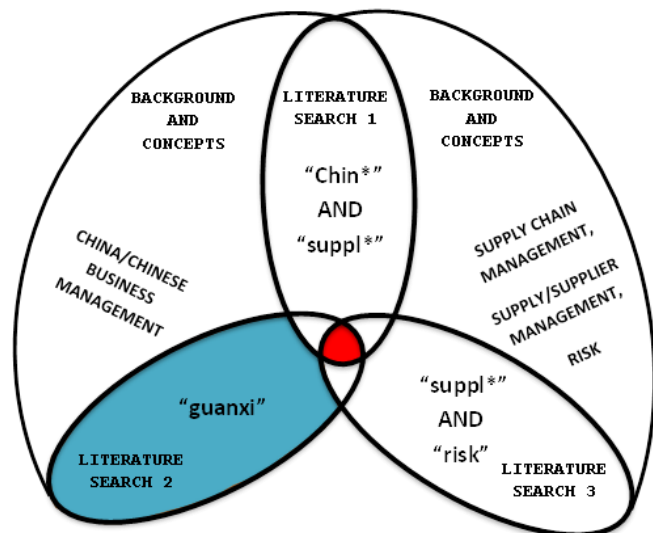
			3. Systematic literature search #2. <i>Guanxi</i>					
			Themes/Subsections					
Sources			Evolution and decline	Ethnicity and cross-cultural implications	Trust	Advantages and disadvantages of	Social /human capital	Government
Case Studies	MNEs	CS1	-	✓	△	△	✓	✓✓
		CS2	-	✓	△	△	✓	✓✓
Key Informants	MNEs	IK1	-	✓	△	△	✓	✓✓
		IK2	-	✓	△	△	✓	✓✓
		IK3	-	✓	✓✓	✗	✓✓	△
		IK4	-	✓	✓✓	✗	✓✓	△
	UK SMES	IK5	-	✓	✓✓	✗	✓✓	△
		IK6	-	✓	✓✓	✗	✓✓	△
	Academics	AK1	-	-	-	-	△	-
		AK2	-	-	-	-	△	-
	Consultants	CK1	✗	✓✓	✓	✓	✓✓	✓
		CK2	✓	✓✓	✓	✓	✓	✓
		CK3	✓	✓✓	✓	✓	✓	✓
	Comparators	FK1	-	✓	-	-	✓	✓✓
		FK2	-	✓	✓	✓	✓	-
		FK3	-	✓	✓	✓	✓	-
		LKs	✓	✓	✓	✓	✓	-



Legend	
	Degree of Compliance with Consensus of Literature
✓✓	Very strong
✓	Strong
△	Weak (concept was implied or mentioned but considered weak)
-	Nothing relatable mentioned
✗	Conflicts with consensus
✗✗	Opposite of consensus

Wang *et al* (2005): Confucianism continues to influence Chinese organisational practice despite the decline of traditional values among young Chinese. This observation raises the question of whether age and generational factors are affecting management style. The success of the relational approach of UK SME managers to Chinese supply management may be attributable to the age of the

Figure 27 "guanxi" in the Literature



Chinese managers (a supposition also proffered by a UK SME interviewee). If the assertion of Wang *et al* is correct, the necessity for relational/guanxi methods of management will decline with time. Evidence from MNE informants suggests that where power dynamic and technological asymmetries favour the foreign partner, relational/guanxi factors are a minor concern.

According to Guthrie *et al* (1998) and Mackinnon (2008), guanxi is in decline. To Xin and Pearce (1996), guanxi allows companies to overcome the weaknesses of formal institutions. Its utility appears to be waning as a consequence of China's strengthening formal institutions (law and contracts) and the adoption by younger Chinese of Western-style management, which is less reliant on relationships and the use of networks to access resources. None of the informants cited guanxi as a major influencer of risk (SC-related or otherwise). Guanxi was however described by all the SME informants as important and arising from long-term interaction. These SME informants had already established China-side guanxi prior to the commencement of their China supply or joint ventures.

Dunning and Kim (2007) believe that Confucianism explains the Chinese preference for guanxi. However, the existence of guanxi near equivalents in several East Asian countries (Alston, 1989), guanxi-like systems in Russia and the Arabic speaking world (Michailova and Worm, 2003), and the near ubiquity of powerful informal networks in emerging countries (Puffer *et al*, 2010; Smith *et al*, 2012) implies that the phenomenon is neither unique to China nor likely solely attributable to Confucian traditions. In this research, only one interviewee referred directly, without prompting, to guanxi, and two MNE respondents made no direct or indirect references to guanxi, suggesting that to managers and consultants, guanxi is currently of low significance. The findings of this research are generally in agreement with the theorists who claim that guanxi is a diminishing force in Chinese business practice.

However, insistence on formal methods, especially inter-organisational rules, can increase risk (Ramasamy *et al* (2006). According to Wang (2005), China is a low trust society. The key component of guanxi is trust, hence where guanxi exists so too does trust. Therefore, the application of formal rules will, in some circumstances, suggest to the Chinese partner that the relationship lacks trust. One MNE key informant stated that *he* (not his Chinese counterparts) postponed discussion of contracts or conditions until a solid trust relationship had evolved. Similarly, two SME respondents reported that granting *flexibility* and *autonomy* to their China distributors produced positive performance. It seems both MNE and SME informants endorse the combined use of informal (i.e. trust-based, guanxi-like) methods and formal (legal and contract-based) methods.

The MNEs' use of national China headquarters and variously located regional offices has many advantages, not the least of which is their ability to engage local people in local business. Jiang *et al* (2011) showed that Chinese business people are more likely to trust people of the same ethnicity. Lovett *et al* (1999) reported that in domestic situations, native protocols of conduct are intrinsically superior to foreign protocols. The SME managers' practice of informal methods is therefore predictably advantageous when dealing with Chinese suppliers in China. The usage of informal, trust-based methods strongly supports the proposition that guanxi (or at least guanxi-like relational methods) can be adopted and applied by foreign managers, as is argued by Hutchings and Weir (2006). One consultant key informant, however,

stated that non-Chinese could *not* acquire guanxi, since guanxi is inherited or is the product of shared history. The researchers and writers that recommend foreigners adopt the practice of guanxi must concur with the findings of this research, i.e. foreigners are capable of practising guanxi. Without this premise, the business-by-guanxi recommendation loses validity. The sheer number of foreign companies involved in relationships with Chinese companies is also supportive. Fock and Woo (1998), however, recommend foreign managers adapt only moderately to the Chinese business environment, engaging in guanxi only when necessary. The MNE case study respondents appear to practice this recommendation. The MNEs have strongly formulated anticorruption, anti-gift giving policies that govern their interaction with all external organisations and influential individuals.

On the issue of ethnic similarity, the MNEs studied in this research seem well equipped. All four are headquartered in foreign states, but their China representation is predominantly through bilingual, internationally educated managers who are Chinese in ethnicity.

A similar, albeit lower scale, pattern is discernible in the practices of SMEs: all four UK SMEs (and one MNE informant) are represented by and communicate with their suppliers through ethnically Chinese “key China people” (my phrase). This method enables non-Chinese organisations to effectively avoid cultural and linguistic obstacles that would be challenging otherwise. The use of national offices by MNEs and key China people by SMEs seems to create the “cross-cultural guanxi networks” recommended by Jia and Wang (2013), and minimizes the possibility of cultural differences increasing supply risk, which is claimed by Jia and Rutherford (2010).

The guanxi-enhancing capabilities of intermediaries are claimed (by Li and Wright, 2000) to be highly beneficial to Western companies operating in China. Third parties/intermediaries, such as consultants and China solutions providers, can, for a fee, lend their trustworthy status and credibility to inexperienced companies seeking Chinese partners. In this research, only the consultant informants advocated the necessity of contracting with third-party intermediaries. However, it seems rational that companies seeking low prices alone, i.e. not engaging with Chinese suppliers for strategic, long-term reasons, will lack key China people and the motivation to invest in resource-intensive trust-building activities. Thus, for the achievement of

reducing risk in arm's-length, transactional trade with suppliers, hired third-parties may be suitable.

The importance of establishing guanxi with officials was mentioned by two MNE respondents. Tung and Worm (2001) claim that European companies' failure to develop government guanxi has contributed to their weak performance in China. The scale of SMEs is such that guanxi with officials is likely unnecessary. Through joint-ventures, MNEs, on the other hand, are already connected with government. No informants indicated that guanxi with government officials were actively pursued. This omission is construable as further evidence that the importance of guanxi is in decline.

## 8.4. Supply and Risk

Table 24 Compliance of Findings with the Supply and Risk Literature

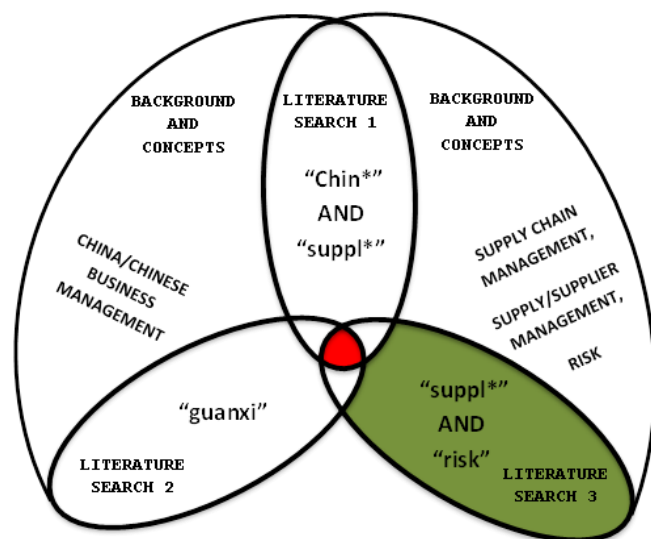
			4. Systematic literature search #3. Supply and Risk									
			Themes/Subsections									
Sources			Inventory	Risk calculation models	Collaboration	Relationships	Supplier selection	Contracts	Risk management strategies, frameworks, and tools	Specific versus general SC design	Quality	Intermediaries
Case Studies	MNEs	CS1	△	-	✓✓	✓	✓✓	△	△	△	✓	△
		CS2	△	-	✓✓	✓	✓✓	△	△	△	✓	△
Key Informants	MNEs	IK1	△	-	✓✓	✓	✓✓	△	△	△	✓	△
		IK2	△	-	✓✓	✓	✓✓	△	△	△	✓	△
		IK3	△	-	✓	✓✓	✓✓	△	△	△	✓	✓✓
		IK4	△	-	✓	✓✓	✓✓	△	△	△	✓	✓✓
	UK SMES	IK5	✓	-	✓	✓✓	✓✓	△	△	△	✓	✓✓
		IK6	✓	-	✓	✓✓	✓✓	△	△	△	✓	✓✓
	Academics	AK1	✓	-	✓✓	✓✓	✓✓	△	△	△	✓	△
		AK2	✓	-	✓✓	✓✓	✓✓	△	△	△	✓	△
	Consultants	CK1	△	-	△	✗		△	-	-	✓	✓✓
		CK2	△	-	△	✗		△	-	-	✓	✓✓
		CK3	△	-	△	✗		△	-	-	✓	✓✓
	Comparators	FK1	-	-	✓	-		△	-	-	✓	-
		FK2	✓	-	✓	✓		△	-	-	✓✓	-
		FK3	-	-	✓	✓		△	-	-	✓✓	✓✓
		LKs	-	-	✓	✓		△	-	-	✓	✓✓

Legend	
	Degree of Compliance with Consensus of Literature
✓✓	Very strong
✓	Strong
△	Weak (concept was implied or mentioned but considered weak)
-	Nothing relatable mentioned
✗	Conflicts with consensus
✗✗	Opposite of consensus

Table 24 (above) summarises the findings of this research in terms of its degree of compliance with the supply and risk literature stream.

Agrawal and Seshadri (2000) stress the instrumental significance of a distributor in effective inventory management. The distributor acts as an intermediary, interfacing between the supplier and regional customers, placing orders according to demand and handling inventory.

Figure 28 "suppl\*" AND "risk" in the Literature



Similar distributor activities feature in the UKCeram and pre-2009 R-UK key informant cases. In addition to distributing product and finding and finalising China side sales, both SMEs' China distributors also identify and liaise with suppliers and handle supply-side related risk. Thus, both China-side distributors have a dual function: they minimise fulfilment risk by local storage and distribution; and they function as the SME's key China person, representing the SME's interests to its China-side stakeholders, building and maintaining customer and tier 2 relationships, providing consistent China-side in-person presence, and resolving supply related issues as they occur.

All four MNEs operate China-side distribution centres where product is consolidated for dispatch to domestic and overseas customers. Park *et al* (2010) observe that holding safety stock at distribution centres enhances risk pooling. In all four MNE cases, China-side supply and China market share are important, interrelated

priorities. Regionally dispersed distribution facilities reduce fulfilment risk. According to Guinipero and Eltantawy (2004), the traditional method of resolving SC risk is buffer inventory. This seems to be the approach used by the China-operating MNEs. Their usage of strategically located concentrations of make-to-stock inventory contravenes trends in lean practice but provides buffer against demand spikes and disruption (creating a basic form of agility). The DCs also function as a risk-reducing decoupling point of the sort recommended by Christopher (2010). Prof Christopher also acted as a key academic informant in this research. In his interview, he stressed that decoupling constitutes the single best practical/structural method of reducing all supply chain risk. Both demand- and supply-side risk can, to varying degrees, be reduced by use of a decoupling point.

Discussion of risk calculation models dominates a significant proportion of the literature on supply risk (e.g. Berger *et al*, 2004; Blackhurst *et al*, 2008; and Giannakis and Louis, 2011). In the context of evaluating risk in China supply, risk models must include relationship quality (especially when SMEs are involved), since the findings of this study suggest that relationship quality (although problematic to quantify) generally influences supply risk.

The case studies presented in this research support the findings of several heavily cited ( $n \geq 40$ ) studies into collaboration between supply chain partners:

Braunscheidel and Suresh (2009) found that internal and external integration and agility decrease supply-side risk and increase responsiveness to market change. *Internal* integration was also recommended by a key academic informant, so was applied in Practitioner Output 1 of this research (Chapter 9). *External* integration refers to interaction with customers and suppliers, which is achieved by China supply-operating SMEs primarily through China presence and relationships. A study by Camuffo *et al* (2007) found that relational obligations prevented disagreements and encouraged kaizen activities, including the systematic and incremental removal of risk. The same was reported by several SME and MNE respondents.

Based on a case study of Japanese manufacturing, Dekker *et al* (2013) concluded that trust is more effective as control practice than transactional interaction. Also using case studies, Ellegaard (2008) deduced similarly: relational practices are

realistic alternatives to formal modes of reducing SC risk. Three SME respondents identified trust as *fundamental* to successful China-side supply. Management relational methods of risk reduction feature in all eight industry studies. The nature and composition of the key risk-reducing relationships differs: for MNEs, the key relationships are at the organisational level, i.e. with joint-venture partners and between supplier managers and managers working at the national or regional office; for SMEs, the key relationships are between UK-side managers and/or key China people and managers at China-side suppliers.

All four SME informants claimed that in-person China presence and regular communication with China-side managers are crucial to effective collaboration and risk management. Similar was observed at French companies by Lavastre *et al* (2012): meetings and constant communication achieves effective SC risk management. This suggests that the rewards of in-country, in-person presence and frequent exchange of information are not unique to the China scenario, so should be considered universal good practice.

All respondents indicated their Chinese suppliers provided cost-effective supply at satisfactory quality. No adversarial relationships were mentioned. Most of the comment from all eight industry sources was positive. Only the AFC respondent reported a significant quality issue stemming from China supply, but this was one of very few instances he could recall. The positive picture contradicts starkly with the popular books (e.g. Midler, 2009) that describe the difficulties that foreigners face when trading with Chinese suppliers.

Supporting the case study and industry key informant findings, Leverick and Cooper (1998) and a key informant interviewee (Stuart Emmett) claim that adversarial relationships are growing increasingly uncommon as the benefits of cooperative relationships grow weightier.

SME and MNE respondents reported that association with large international companies brings face advantages to the Chinese partner. Reputation and the Chinese concept of face therefore appear similar. Lemke and Petersen (2013) proclaim “reputational risk” to be a lesser-known form of SC risk. The preservation of

reputation motivates suppliers to perform to expectation. It seems reasonable to assume that in the Chinese case, preservation of face motivates good performance.

Olson and Wu (2010) identified two China-specific supply related risks: natural disasters and quality issues that resulted in recalls. These authors claim that information sharing and improved supplier visibility can reduce the probability of quality issues. Two MNE informants claimed that their companies had the supplier visibility that they required, but the suppliers have very little visibility into the MNE. Favourable power asymmetries seem to be a strong feature of the MNE China supply risk management formula.

The performance of pre-shipping quality checks (also known as “acceptance sampling”) is recommended by Starbird (1994), but not in the specific context of China supply. Two key consultant informants expressed the opinion that when ordering product from a new supplier or ordering new product from a known supplier, acceptance sampling is good practice. Consultants and China solutions providers can introduce buyers to third-party companies that can perform China-side acceptance sampling, ensuring that only passed products are shipped and failed products are returned to the supplier before payments are transferred. However, no industry practitioner informants (MNE or SME) reported use of such services, suggesting that confidence in supplier quality was satisfactory and other methods of quality risk management were sufficient.

Consultant respondents also claimed that third-party intermediaries, such as a specialist consultant or China solutions provider can perform various risk-reducing activities, such as supplier selection, supplier monitoring, and supplier-buyer liaising. Similar claims are made in the literature: Vedel and Ellegaard (2013) showed that intermediaries performed a range of risk-reducing functions, including supplier identification, supplier monitoring, supplier-buyer relationship management, cultural mediation and delivery security. The risk-reducing capabilities of sourcing intermediaries are such that intermediaries should be considered strategic elements of supplier management, especially when sourcing in high-risk countries. Neither MNE nor SME informants reported usage of sourcing intermediaries. In the case of SMEs, similar risk-reducing functions appear to be performed by key China people.



In the case of MNEs, high levels of formal control, the presence of local representatives, and the heavily clustered, accessible nature of the China-side supply base reduces most forms of supply risk.

## 8.5 Conclusion

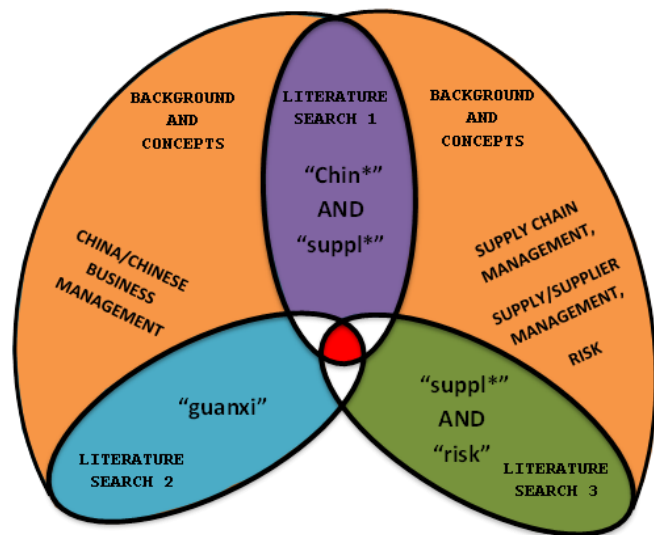
Overall, the findings of this research support those of Zhai *et al* (2013) and the SCM paradigm generally: SC risk associates negatively with SC integration. That is, well-developed supplier-buyer relations – provide China SC risk reduction.

As predicted prior to the literature search, integration

(indicated by the central red segment in this diagram) is a recurring element prominent in all four areas of the literature examined. Integration/collaboration is central to the SCM paradigm; integration-facilitation through relationships is the dominant recommendation in the literature on China and supply [chain] management generally; “guanxi” is mutualism and relational interaction in the Chinese context and influences all business strongly; and risk in supply can be reduced by buyer-supplier integration and collaboration.

This literature is generally supportive of the foregoing general consensuses, but finds that SMEs and MNEs can differ on the degree to which they must use relational methods to reduce risk in Chinese supply. SMEs are more dependant than MNEs on informal, relational, interpersonal, i.e. guanxi-like methods. MNEs, on the other hand, may – by dint of scale, connectedness to government, and buyer influence over supply markets – operate using impersonal, formal methods, such as contracts and quality standards found effective in developed countries. Furthermore, MNEs manage their China supply risk using in-country mediation, which they perform

Figure 29 A Combined and Intersecting Literature



through their regional offices. SMEs, lacking this facility, are dependent on critical intermediating individuals. Typically, these individuals are well-networked industry professionals, have ties to both suppliers and customers in China, have long-term, trust-based relationships with their UK partners, spend time in both countries (but more time in China than the UK), possess bilingualism and multicultural experience, and are proficient communicators and negotiators. Such individuals are essential and their communication with the UK office will be frequent.

The penultimate chapter of this thesis (following) describes the theoretical and practitioner-oriented outputs that have developed out of this research.

## 9. Discussion II. Theoretical and Practitioner Contributions

This chapter reports the four main outputs of this research. Two theoretical outputs are presented: *system patterns* and *China presence*. Two practitioner outputs are then presented: *The Four-Step China Supplier Establishment Tool* and *The China Supply Risk Assessment Tools*.

Table 25 (following) summarises the findings of this research and tables 16-22 and 26 provide more detail. Highlighted risks are mitigated similarly; red-boxed mitigation methods are unique to MNEs. Both categories of firm encounter similar risks and exercise similar methods of mitigation. UK SMEs achieve by informal methods what MNEs achieve by formal methods. For MNEs, relationships are premised on prior China presence and formal ties with Chinese institutions; for UK SMEs, relationships are guanxi-like, i.e. the key China person's industry connections and family and peer network. For both, relationships and physical China presence are inseparable; for both, relationships reduce most major forms of supply risk.

Table 25 Overview of Findings

Risks	Mitigation Method	
	MNEs	UK SMEs
Quality	China office	Key China person/China presence; family and peer networks of key China person
Communication with China customers and suppliers		
Supplier selection	ISO and industry compliance as minimum selection standard	Outright ownership; joint venture Family and peer networks of key China person
Supplier Power	Global supply network leverage	
	Acquisition; joint venture	
	Liaising through China office	
General quality and efficiency management	Global factory audit processes	Monitoring and quality checking by key China person/China presence
	Process monitoring and product testing by China office	Family and peer networks of key China person
Logistics	3PL	3PL
Cultural issues	China office	Key China person/China presence; family and peer networks of key China person
Guanxi (lack of)	<b>Not important</b> due to scale and non-substitutability	
IP Loss	Make outside China	<b>Not important</b>
Bureaucracy	Long-term China presence; China office	

Section 3.3.2 provides a quantitative, schematic summary of the thematic analysis. (more detail can be found in the Appendix). Some UK SMEs are also MNEs, since they source and sell in China and other countries besides their home nation. However, the MNE risk-influencing variables mentioned here were derived from the MNE sources so likely have most applicability to global MNEs. The UK SMEs studied in this research are modest in their China ambitions. However, SMEs strategically targeting the China market could benefit from the risk-reducing strategies of MNEs.

Thematic analysis of the case studies and the key informants' contributions revealed similar structural and sociographic patterns (1) in the various business systems described, dominant MNE risk-influencing variables (1a), and three overarching pairs of interacting factors (1b, 1c, and 2) affecting supply risk for both the global MNEs and the UK SMES. Developed from these sets of interacting factors are the five major theoretical contributions of this research. This section describes each of the

five in the following sequence. The five represent the primary theoretical outputs of this research.

1. **System patterns** (9.1),
  - 1a. MNE risk-influencing variables (9.1.5),
  - 1b. Relationship quality and formality (9.1.6),
  - 1c. Buyer status and the supplier perspective (9.1.7), and
2. **Risk and China presence** (9.2).

Also based on the findings of this research, the following two *practitioner* outputs have been developed:

1. *The Four-Step China Supplier Establishment Tool* (9.3), and
2. *The China Supply Risk Assessment Tools* (9.4).

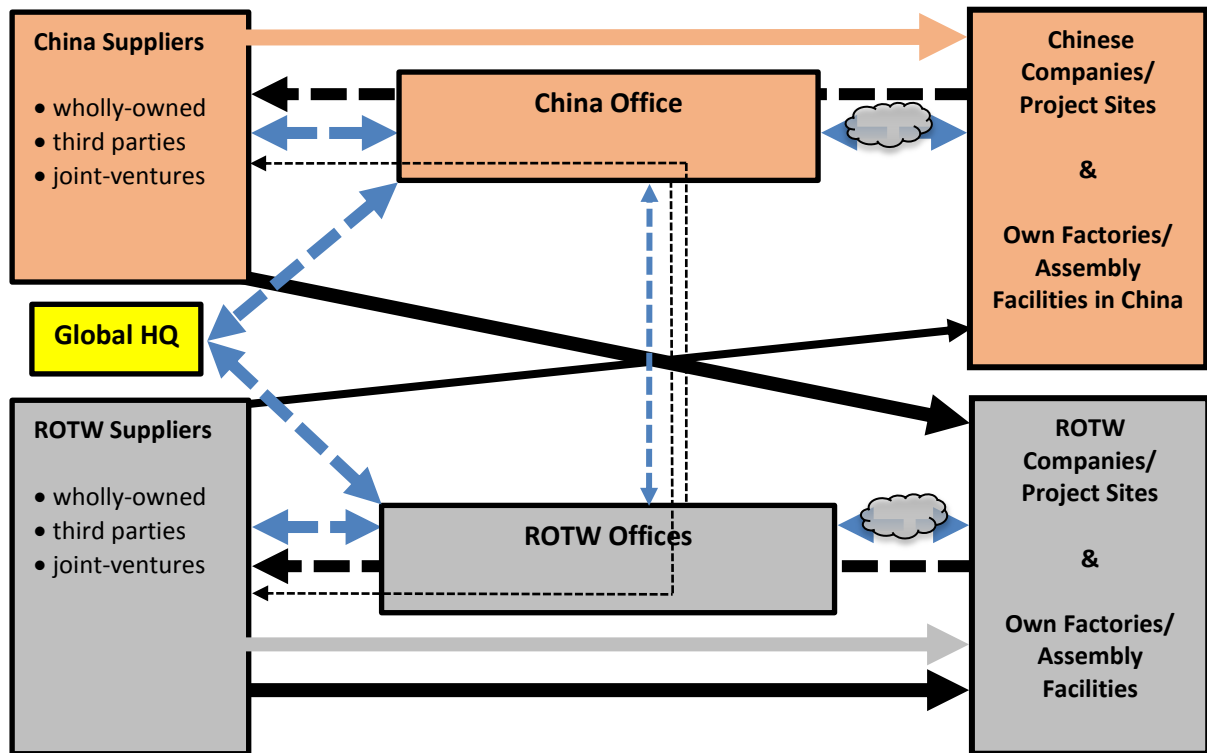
## **9.1 Theoretical Output 1. System Patterns**

### **9.1.1 The MNE Meta-Process**

The block process models of the four global MNEs show a higher degree of similarity than the models of the four UK SMEs. The four MNE cases differ only superficially, e.g. by the various names the companies use to describe their permanent China presence. The MNE buyer-China supplier meta-process model shown here is approximately representative of the four MNE systems.

The following model (Figure 30) comprises two roughly symmetrical horizontal halves: the upper half (beige) describes the MNE's China supply activities; the lower half (grey) describes the MNE's supply activities in the rest of the world. The diagonal solid black arrows indicate crossflow of exports.

Figure 30 The MNE China/Global Supply Meta-Process Model



Legend	
	Flow of orders (unidirectional)
	International flow of goods (unidirectional)
	China domestic flow of goods (unidirectional)
	ROTW to ROTW domestic flow of goods (unidirectional)
	Flow of product design and other information (bidirectional)
	Line thickness indicates approximate volume (thicker line=higher volume)
	Total design/manufacturing/logistics solution (if required)
	Location: China
	Location: ROTW (rest of the world)

The China-located China office of the MNE occupies the upper central block. To its right is the MNE's China-located China customer base; to its left is the China supply base. Product flows directly from China-side supplier to China-side customer, bypassing the China office, which handles no product. Product flows in response to China-side customers' orders that are received by the China office and then relayed to China-side suppliers. Bidirectional communication occurs between the China office and the MNE's China-side customers. Bidirectional communication also occurs between the China office and the MNE's China-side suppliers. Very little direct communication occurs between China-side customers and China-side suppliers. China-side suppliers will ship product directly to the MNEs' customers inside and

outside China. Similarly, suppliers outside China will ship product to China-side customers.

Communication is limited to within-nation entities. Thus, on behalf of global HQ or another national office, the China office places foreign orders with China-side suppliers. (In many cases, ordering is automated and occurs via a companywide buying system.) Product flow is transnational; communication flow is national.

Global HQ communicates intensively with national offices around the world. National offices communicate between themselves only when projects are transnational or when querying issues related to suppliers in other countries. Most communication between customer and MNE occurs at the local level, i.e. within-nation. The closest national or regional office is the point of customer interface. Similarly, suppliers interact with the MNE through the nearest within-nation office. National offices dispatch experts to both customers and suppliers. National offices develop solutions with local customers, ascertaining requirement and crafting fulfilment through interaction with both the customer and the supply base. This way the MNE remains agile and relevant.

In the case of China, local-to-local interfacing is operationally advantageous *and culturally appropriate*. Both SME and MNE respondents spoke of the need to build relationships – interfirm and interpersonal – to reduce various supply-related risks. Scale factors separate the two sets of firms, but both operate communicative, proximity-creating, relationship-facilitating China-side systems.

The global capabilities and long-term China strategies of all four MNEs are intensely *supply chain-dependent*. All four operate *global* SCs that are highly *China-dependent* and place China at the centre of their globe-spanning SCs. All four operate a global network of regional offices that represent their main markets *and* sources of supply.

For China-side risk reduction generally, all four favour within-nation supply to China customers. All four MNEs prefer to contract with Chinese suppliers who are close to their major China markets, and, ideally, located close to coastal industrial clusters, since these are well served by logistics companies and ports. These location preferences reduce logistical and lead time-related risk.

All four MNEs enforce process and product quality across their supply base, principally through formal methods, i.e. industry standards and contracts. All four MNEs entrust responsibility for tier 2 quality management to tier 1 suppliers.

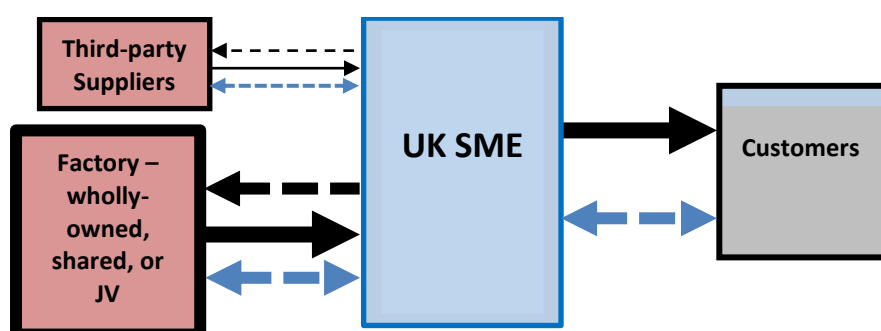
SFM, AFC, and CT have a modest interest in supplier acquisition (less so FEM), preferring to bring to bear scale-related enticements such as high-volume orders, association prestige, and long-term arrangements when selecting suppliers and negotiating price. SFM, AFC, and CT have built long-term China strategies around the continuation and deepening of their Chinese supply bases, despite management at each acknowledging that their positions in the Chinese market will decline as the capabilities of Chinese suppliers and native industry generally improve.

### 9.1.2 The UK SME Meta-Process

All the UK SMEs mitigate risk similarly, i.e. through constant communication with customers and their factories. All have a near-constant physical presence in China consisting of both formal and informal working relationships.

Although the block processes of the SMEs vary considerably more than those of the MNEs, there is sufficient similarity in the supply systems of all four UK SME cases to propose an essentially descriptive, meta-process model of UK SME buyer-China supplier flow. This is depicted in Figure 31 (following).

*Figure 31 The SME China Supply Meta-Process Model*



The central block represents the UK SME, who communicates bi-directionally with its customer base (to its right) and with its China-side supply base (to its left). The UK SME receives orders from its customers and receives product from its Chinese



suppliers. Product is make-to-stock, i.e. ordered from Chinese suppliers in anticipation of customer orders and then stored, typically at a UK-side facility. Make-to-order processes are uncommon, due to distance and scale constraints. When product from suppliers is physically received at the UK SMEs' UK-side facilities, the UK SME then applies quality checks and modifications if necessary, and then ships product forward to customers. If the UK SME exercises a high degree of control over its Chinese supplier and the nature of the order permits, shipping may be directly supplier-to-customer.

Some UK SMEs obtain *all* their manufacturing and/or supply from a *single* China-side supplier (third-party, wholly-owned, or joint-venture). The single factory China-sourcing SME (e.g. OEM) is – at least by the findings of this research – rarer than the portfolio China-sourcing SME (e.g. D2C, R-UK, P-S, UKCeram, and 360C).

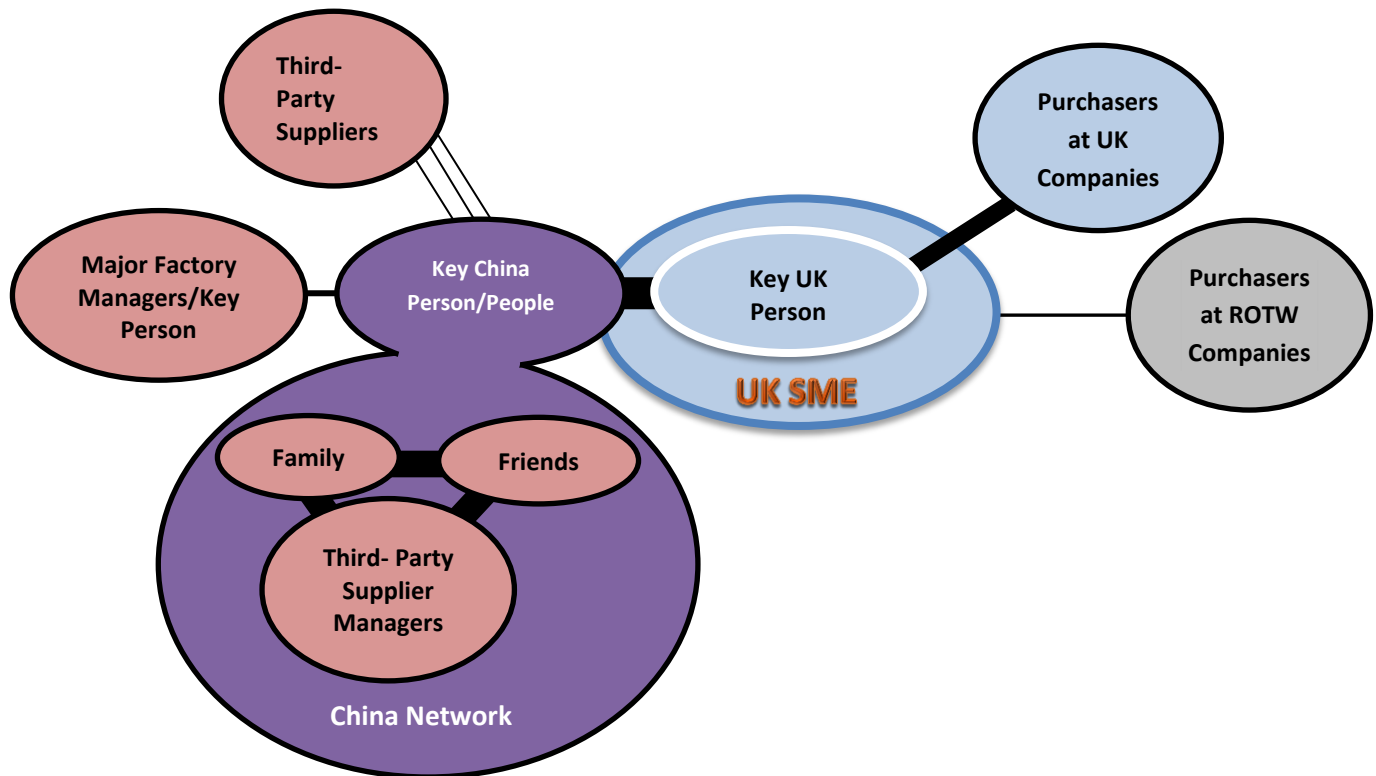
A portfolio will likely consist of varying combinations of the following: third-party suppliers, wholly-owned factory/suppliers, and joint-ventures. The smaller UK SMEs (D2C, UKCeram, and 360C) source from several third-party suppliers. The larger UK SMEs (R-UK and P-S) source from various third-party suppliers and from one or several wholly-owned or joint-venture manufacturers. In the case of portfolio China-sourcing SMEs, volume of trade with their wholly-owned or joint-venture supplier/manufacturer is larger than the volume of trade with any individual third-party supplier. Similarly, the volume of communication between the UK SME and its wholly-owned and/or joint-venture is also likely to be greater than the volume of communication between the UK SME and any of its China-side third-party suppliers.

Risk in China supply lessens in proportion to the buyer's demonstrated level of interaction, particularly in-person interaction, with supplier management. This perhaps explains the preference for small China-side supply bases – forming and maintaining relationships – although advantageous in terms of supply risk reduction – represents a cost and commitment that for a resource-constrained SME might not be tolerable. This may influence supplier rationalisation in the context of China (and similar environments where relationships influence business performance strongly).

### 9.1.3 The UK SME China Supply Meta-Sociograph

The sociographs of all four UK SMEs feature sufficient commonality to form a representative meta-sociograph. This is depicted in Figure 32 (following).

*Figure 32 SME Generic Sociograph*



Reflecting the SME meta-process model, the central position in the meta-sociograph is occupied by the UK SME. To its right are its customers; to its left is its China supply base. In the meta-sociograph however, the central UK SME contains a “Key UK person”. Typically this will be an owner or director with direct connections to the “Key China Person/People”, who can be direct employees of the SME (P-S), co-owners (D2C), an informal arrangement of expert friends (OEM), a joint-venture manager (R-UK), or a paid China side representative (UKCeram). In all cases, a high level of trust and frequent communication characterises the relationship between the key UK person and the key China person/people.

Ideally, the SME retains a key China person/people based permanently in China (OEM, R-UK, UKCeram). If the key China person is a direct employee (e.g. Ms J at P-S), communication with suppliers by Skype and telephone will be frequent, and visits will occur several times yearly.

The key China person will typically be industry and technology literate, conversant with matters of pertinence to supply and suppliers, ethnically Chinese, and fluent in English and the various Chinese dialects of the main suppliers or regions of supply (true of all cases).

It is also likely that the key China person will be a member of a valuable China-side network of suppliers/manufacturers: the key China person may have family and friends who own or manage suppliers/manufacturers of relevant product (D2C). This provides the UK SME with a degree of permanent China presence by proxy and risk-reducing redundancy. In times of supply interruption, the key China person's network can be utilised to provide resilience.

The key China person effectively manages all of the UK SME's China-side supply related activities: solving problems and minimising quality and logistical risk through presence and direct communication with suppliers. In some cases (e.g. UKCeram), the key China side person will also double as a sales representative, connecting Chinese buyers to the UK SME's products. In other cases (e.g. R-Hua), the key China person directly manages the UK SME's main China-side source.

#### **9.1.4 Global MNEs and UK SMEs: Differences and Commonalities**

The meta-process block models and the meta-sociograph reveal differences and commonalities between UK SMEs and global MNEs in their approach to managing risk and relationships in the context of China-side supply (summarised in Table 26). Commonalities outnumber differences. China factors, such as infrastructure and general macroeconomic influences, are common to both, so may explain some of the commonalities noted. However, *most of the commonalities relate directly to relationships and their bearing on risk.*

Both MNEs and SMEs use relationships to reduce risk. Both MNEs and SMEs use China-side personnel to represent the larger organisation and, critically, to interface and thereby build and retain relationships with managers and other facilitators of business. Both MNEs and SMEs use China-side representatives to handle problems, communicate information, and develop and maintain relationships with key people at suppliers and other organisations of influence.

The management at both MNEs and SMEs understand that in-person interaction, frequent communication, and relational ties increase mutualism. With mutualism comes the intertwining of interests. Suppliers receiving regular orders, co-investment, and various other benefits that come through association with a strong customer seem unlikely to jeopardise continuation by issuing substandard or delayed products. Moreover, in-person, direct relationships enforce personal accountability. The prevention of face loss and reputation damage is likely to compel managers of Chinese suppliers to ensure their companies perform to or exceed expectation. A distant, absent, and/or unconcerned, i.e. transactional, buyer is incapable of building and holding trust relationships, monitoring facilities in person, interacting with managers, being generally responsive, understanding local business conditions, and connecting with powerful informal networks. The greater the organisations' in-China presence, the greater its ability to create/maintain quality in relationships and to reduce supply related risk through leverage of those relationships. Table 26 (following) summarises the main differences and commonalities between global MNEs and UK SMEs with regard to China risk.

*Table 26 Global MNEs and UK SMEs: Differences and Commonalities*

Differences		Commonalities
Global MNEs	UK SMEs	
Source heavily in China to achieve strategically critical, long-term China market ambitions	Source heavily in China but have very limited China market ambitions	Source heavily in China
Main sources are multiple J-Vs, multiple owned factories	Main sources are third-party suppliers, single owned factory, single J-V	Portfolio approach to China sourcing
World market-focused	UK market-focused	Import-/export-intensive supply
Serve global customers through global supply	Serve globally dispersed customers by concentrated China-side supply	
Sourcing low to very high tech	Sourcing low- to medium tech	Sourcing technologies of various levels
Limit China supply/ outsourcing to products that are not IP sensitive	Willing to tolerate IP losses to obtain cost advantages of China sourcing	Vulnerable to IP loss
Importance to Chinese government reduces the threat of corruption/ bureaucracy	Low scale reduces threat of corruption	Vulnerable to corruption/bureaucracy
		For many categories of product, supply outstrips demand, which creates an advantageous buyer's market
		Long-term, mutualist buyer-supplier relations are the most effective way of reducing general supply related risk
		Buyer-supplier relationship quality improves with time and frequency of communication
		China-side presence helps build relationships with suppliers
		Quality problems are unusual (these days)
		Logistical problems are unusual (these days)
		Supplier selection is paramount
		Logistical and quality related issues can be resolved by good relationships with suppliers
		Most risk in supply management can be reduced by relationships
		Good relationships with suppliers can give access to other risk-lowering resources, such as contacts in local logistics companies
China office, national/regional HQ	"Key China person/people"	Use of China-side representative
		From the perspective of the overseas HQ, China risk and China-side operations are largely managed locally, so are "hands off"
		China-side representative is operationally critical
Uses government contacts	Uses peer contacts	Use informal contacts/networks to reduce risk/improve business
Formal, e.g. through supplier policy agreements, etc.	Informal, e.g. through trust between supplier and key China person	Relationships combine both formal and informal methods of control

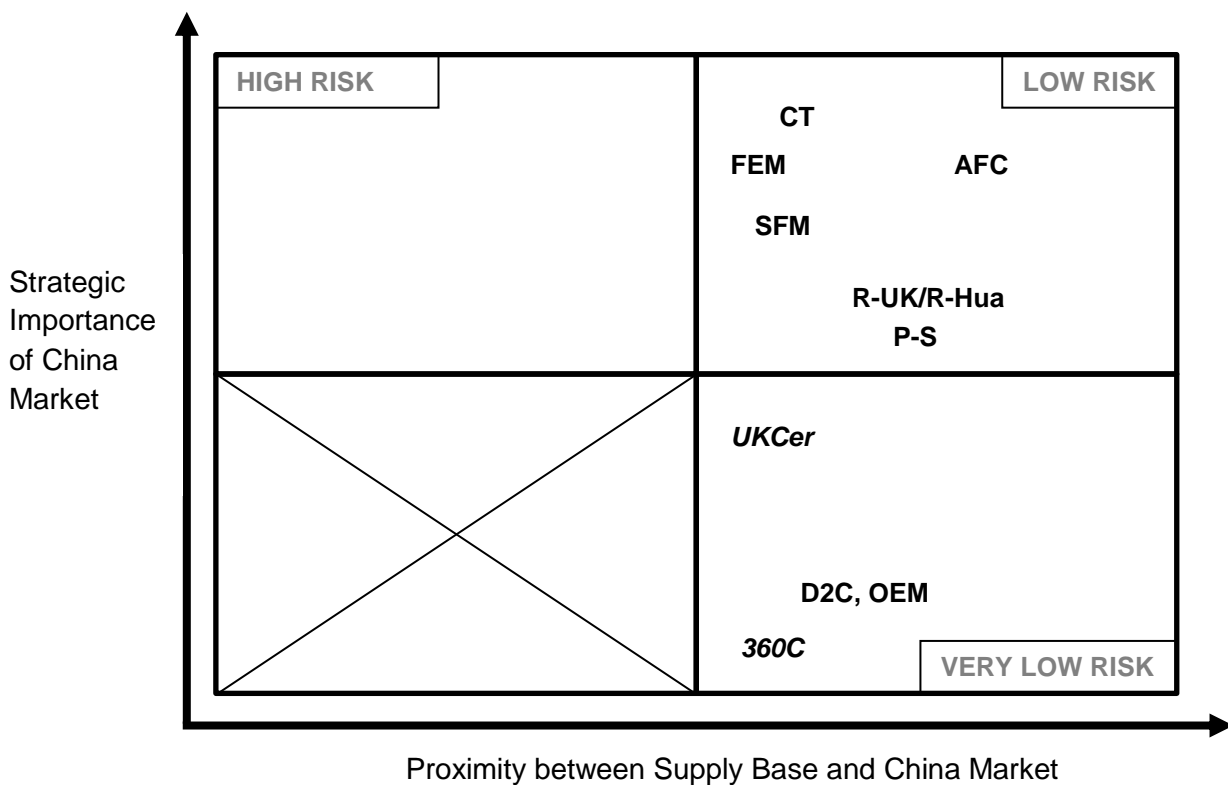
### **9.1.5 MNE Risk-Influencing Variables**

#### *9.1.5.1 China Strategy and Supply Proximity*

When serving China markets, supply risk appears to decline with proximity of the supply base to the China market. In the case of the Chinese MNE (SCMG) and all four non-Chinese MNEs, reduced supply risk is achieved by serving China-side markets with as much China-sourced product as possible. For SMEs with lower strategy-level China ambitions, proximity to their respective China markets has a low impact on supply risk. SME and consultant respondents reported customs-related complexity as a major efficiency limiter. Consultant respondents also reported logistical complexities as more likely when using cheaper and/or remote Chinese suppliers. Logistical efficiencies improve with decreased distances between source and market. China's physical logistical challenges can be formidable and Chinese logistics firms often lack visibility technologies. Both issues are best addressed by decreased proximity or international 3PLs.

The following matrix (Figure 33) provides an approximate indication of the risk significance of the relationship between strategic importance of the China market and proximity of supply to market. The matrix quadrant figures shown in this chapter place the two case studies, six key informant studies, and two comparator UK SME firms between axes. The positioning of the firms in all quadrants is approximate, derived only from a qualitative interpretation and the present analysis. Companies who wished to use these as guides would consider their own cases and position themselves in the quadrants according to their company's situation with regard to the variables. For this reason, users should read these as illustrative of possible usage more than declarative of actuality.

Figure 33 Risk in Relation to China Market Importance and Proximity of Supply



Companies who prioritize China markets will likely be able to reduce supply risk by sourcing in China, ideally as close to their markets as possible. However, the very lowest risk belongs to those companies who are *not* prioritising China's markets but taking full advantage of China simply as a supplier and using capable suppliers that are logistically rational choices, i.e. close to ports and major conurbations. Such companies can operate in China without shouldering the long-term investment of supplier development and the many sundry costs of gaining proximity to government – activities that are risk-fraught and expensive.

In the case of the MNEs studied in this research, FEM, CT, and AFC have made extensive, decades-long investments in Chinese government-backed suppliers. Their China experience has so far been generally positive, perhaps for these reasons but perhaps also because they occupy a position of favourable imbalance. All three companies possess technical and operational proficiencies not yet equalled by Chinese companies. And in the case of FEM and CT, the Chinese government is critically reliant on their products and services for the completion of very large scale infrastructure projects. Hence, the nature of a company's products or services – in

terms of their non-substitutability, for this appears to influence the power dynamics between the MNE and its China partners – must also be considered when estimating risk in China supply.

#### *9.1.5.2 Technology and Supplier Availability*

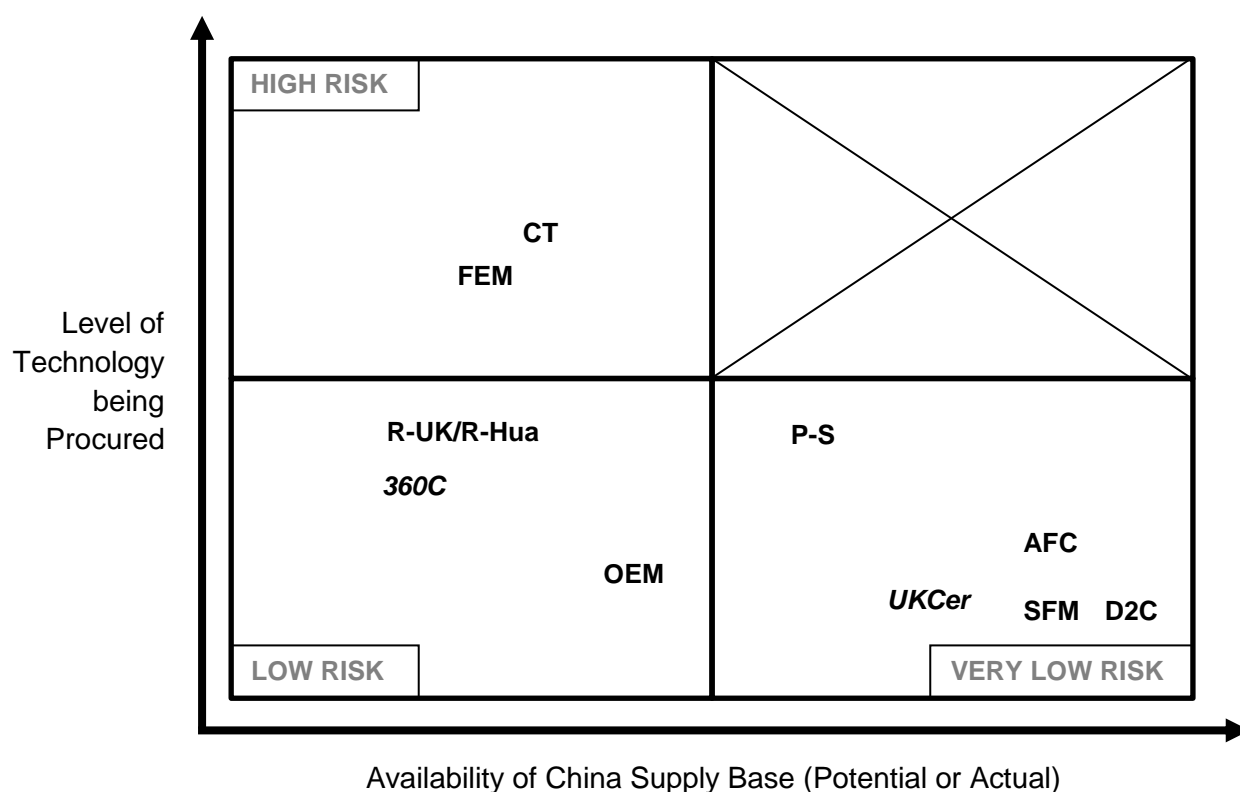
In addition to the quality- and logistics-related supply risks reported by SMEs and MNEs alike, MNEs sourcing high technology product in China must contend with another risk: the availability of Chinese suppliers. Technology level and potential supply base have an inverse relationship: as the level of technology rises, the supply base narrows. This narrowing creates a form of “bottleneck” (Kraljic, 1983) for certain categories of product. The MNEs lose the favourable power asymmetry – the “association benefits” decline, and the supply market is less competitive, creating a supply risk, that is to say a *price/availability risk*, not a supply risk in the quality and logistics sense.

Companies sourcing high technology that have limited non-China sourcing alternatives are likely to face this problem. The response of SCMG (the Chinese state-owned MNE) is acquisition of suppliers of bottleneck product, wherever they might be located. Both CT and FEM practice a similar acquisition strategy, but with higher levels of selectivity (they also have many non-China sourcing options, and use them). Figure 34 (following) indicates the risk significance of technology level and availability of supply. Companies who wished to use such a matrix most effectively would consider technology level and supplier availability in terms of individual products, so would populate this with specific products or categories of product.

According to two MNE respondents, protection of intellectual property is a concern for MNEs sourcing strategically critical products in China. Both CT and FEM reduce their risk of IP loss by outsourcing the manufacture of sensitive proprietary technologies to suppliers in countries where IP laws are strongly enforced.



Figure 34 Risk in Relation to Level of Technology and Availability of China Supply



### 9.1.5.3 The Firm's Relationship with Government

The most important risk-reducing relationships for global MNEs are not with suppliers. Supplier relationships can impact on the supply risk of *specific products*, but the relationship with the Chinese government impacts on *supply- and market-related risk generally*. The performance of China-side suppliers improves roughly in proportion to the quality of the relationship between the buyer (MNE) and the government. China sales and contract awarding also appear influenced by the relationship between the MNE and government (FEM's and CT's biggest contracts come from local governments).

Chinese state-ownership of suppliers and manufacturing companies is high. State involvement in *all* large Chinese companies, regardless of ownership, is widespread. Therefore, the better an MNE's relationships with government (usually local government), the greater the likelihood of its suppliers meeting quality and reliability expectations.

SMEs using small suppliers and *not* targeting a Chinese market as a core strategic concern are less vulnerable to state involvement (no SME cases reported such

issues). If a significant proportion of an MNE's China-side suppliers are state-owned or their management is state-involved, the benefits of effective interaction with relevant officials are likely to be significant. MNEs that are necessary to the Chinese government acquire advantages rarely available to MNEs who are seeking China market access or low cost supply with which to serve foreign markets. Necessary MNEs are those participating in politically-motivated, government-commissioned projects, particularly projects that are infrastructure related. Such MNEs obtain the protective coverage of the government, so are less exposed to supply risk than MNEs who are less integrated in state-backed activity. The Chinese government appear to favour foreign MNEs that operate joint-ventures with Chinese companies and have an enduring presence in China. All four MNE cases support this point. All four operate major joint-ventures, report strong growth in their China business, and have few stories of recent supply failure.

#### **9.1.6 Relationship Quality and Formality**

The four UK SME cases and the two industry cases described by the comparator firm key informants (UKCeram and 360C) revealed that trust building and relationships are powerful methods of risk reduction. In all six SME cases, UK managers acknowledged the importance of relationship formation and continuation. The relationship of greatest influence is between the UK manager and Chinese supplier manager. In most cases, the UK manager acts through a bicultural, bilingual proxy, i.e. an employee or a China-side business associate. This proxy performs various intermediary roles, interfacing between buyer and supplier, communicating on behalf of both parties, making in-person visits, and firefighting when incidents occur and problems arise. In the one exceptional case (OEM), the UK manager – a seasoned China hand and outright owner of his factory – visits China frequently and can mobilize a network of China-based industry experts of his personal acquaintance to resolve any issues when he cannot be himself physically present. Despite the apparently informal and *ad hoc* nature of their association with OEM, the existence and utility of this China network make its members OEM's "key China people".

In the case of the global MNEs, the breadth and complexity of China-side operations are such that no individual or group of people could perform the role of intermediary with equivalent efficiency. The scale of the UK SME s' China-side operations is far narrower and thereby manageable by an individual or small number

of people. In terms of scale, the global MNEs and the UK SMEs are incomparable entities. (For this reason, sociographs of the kind created to describe the UK SMEs could not be created for the global MNEs.) *Global MNEs use a regional or national office to perform the risk-reducing functions that SMEs perform through their key China person/people.* It is rational to assume however that, like the managers of SMEs, managers of MNEs understand the risk-reducing value of building relationships with Chinese suppliers.

The relationship between the MNE and the Chinese supplier has a higher level of formality than the SME-to-supplier relationship. Formality in the case of MNEs is encoded in the application of supplier agreements and/or supplier concept policies (such as SFM's "S-Way"). These take the form of detailed, globally applied, highly articulated, prescriptive contracts with which suppliers, regardless of country of operation, must formally comply. Most of these supplier agreements are standardised so differ little from country to country.

Formality in the case of SMEs is usually restricted to *compliance* – typically compliance with ISO standards and industry-specific certifications. For SMEs however, evidence of a supplier's compliance rarely has a direct bearing on sustained supply risk minimisation. Compliance is reliably indicative only of manufacturing capability level and adherence to operational standards. The second formal method is use of *contracts*. Although most SMEs will have some form of contract with their Chinese suppliers, contracts are seldom enforceable and usually ineffectual as methods of reducing risk when dealing with businesses inside China.

SMEs reduce their China supply risk principally through *informal methods in conjunction with tangible gestures* (such as know-how transfers and high volume orders). Such methods constitute superior methods of reducing quality and logistical risk. Informal methods and tangible gestures increase mutualism, which has a risk-reducing effect. In the context of this research, "informal methods" describes relationships and relational methods of risk management. The main informal method of risk reduction is the creation and maintenance of interpersonal relationships between managers (usually via the intermediating activities of the key China person). Relationships are built primarily through interaction, particularly in-person

communication. The risk-reducing efficacy of informal methods persists as long as the relationship remains positive for both parties.

At outset, the relationship maybe transactional, i.e. arm's-length, which is suboptimal for risk reduction. If the buyer finds value in the supplier's goods, mutualism may then develop. If mutualism yields satisfactory results for both parties, further integration into partnership may then occur. All forms of risk are likely to decline in proportion to degree of interaction. In all cases, the managers of UK buyers and Chinese suppliers interact extensively, ideally directly, but often through an intermediary/proxy (although this is usually an inferior approach – direct one-to-one interaction is preferable). The SME interviewees reported that interaction occurs both inside and outside the working environment. This interaction continues until sufficient trust has been generated, whereupon supply performance improves/risk declines.

SMEs that rely on consultants remain essentially at arm's-length from their suppliers, although some degree of mutualism may be achievable. By dint of their geography, contacts, and familiarity with Chinese business practice and causes of supply failure, third-party intermediaries (i.e. consultants) are better able to resolve issues than a hands-off, transaction-oriented manager based in the UK. For companies seeking a long-term, strategic China-side supply base however, the consultant option is likely inferior to a direct relationship. The supreme option is a direct buyer-supplier relationship – comprising both formal and informal methods – between parties who share a common long-term, mutualist, strategic vision.

Even in cases where collaboration and mutualism are minimal, risk can still be reduced by frequent communication and maximising visibility.

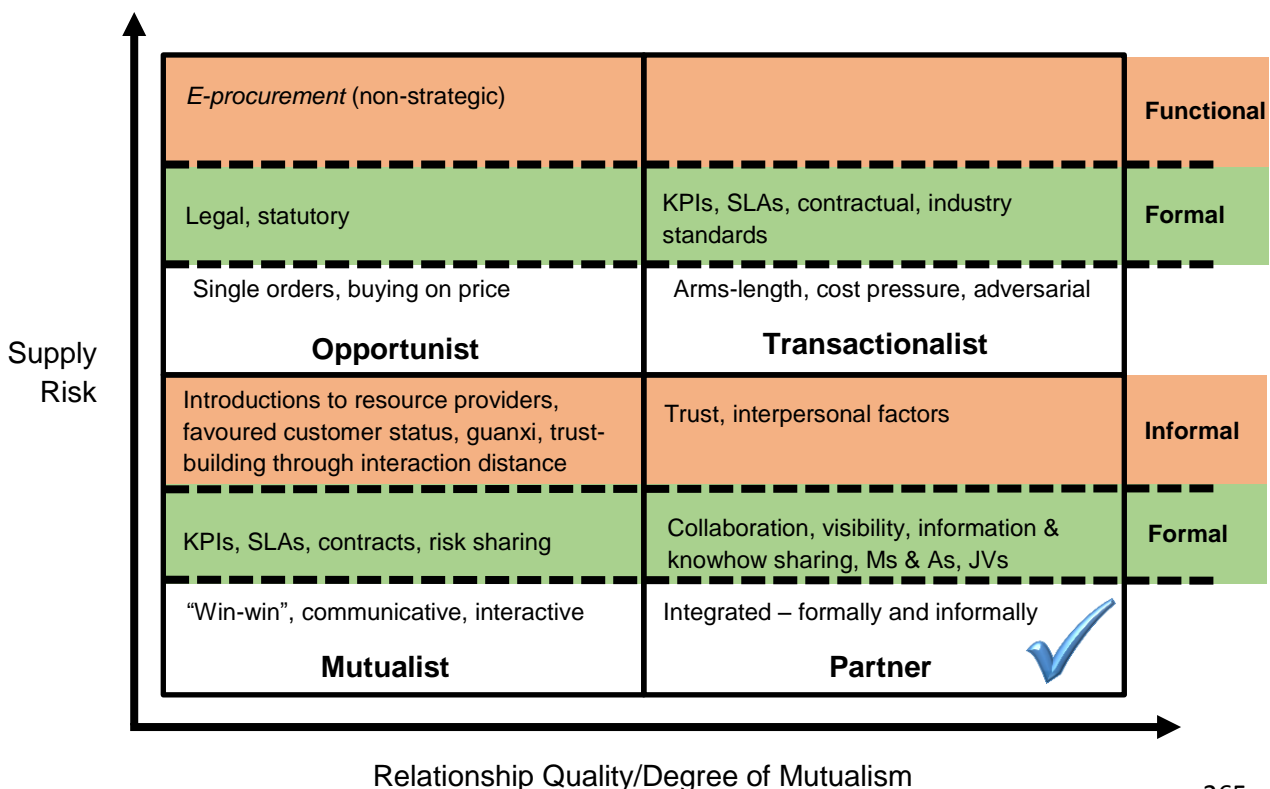
SMEs are more reliant on informal methods than MNEs, who are more formal. This situation is likely unavoidable. The number of suppliers used by global MNEs is too high for interpersonal relationships between managers to be standard practice. However, the managers of suppliers can have a communicative relationship with the MNE's local representatives. Although this is a proxy relationship, we can assume (interviewees lacked knowledge on this aspect of their company's activities) that the quality of this relationship will influence supplier performance and, thus, supply risk.

However, it is unlikely that MNEs and SMEs rely to an equal degree on relationships to reduce supply risk. For SMEs, relationships are more influential reducers of supply risk. This maybe because SMEs cannot offer the enticements of MNEs, managers of SMEs are more accessible, and SMEs have lower complexity in their supply requirements.

To suppliers, the enticements of MNEs include large orders, prestige, co-investment opportunities, acquisition possibilities, and absorption of technology and know-how from the world's best companies. Such enticements likely function as performance motivators and thus as forces of risk reduction. Also, for many categories of product, the China supply market is highly competitive, which compels suppliers to perform competitively.

SMEs and MNEs combine formal and informal methods to reduce risk in their China-side supply bases. I use the term “functional” to describe the very high risk, zero-interaction approach of some UK SMEs that was reported by some SME and non-industry interviewees. The following matrix (Figure 35) summarises the foregoing observations.

*Figure 35 Supply Risk, Relationship Quality, and Formality*



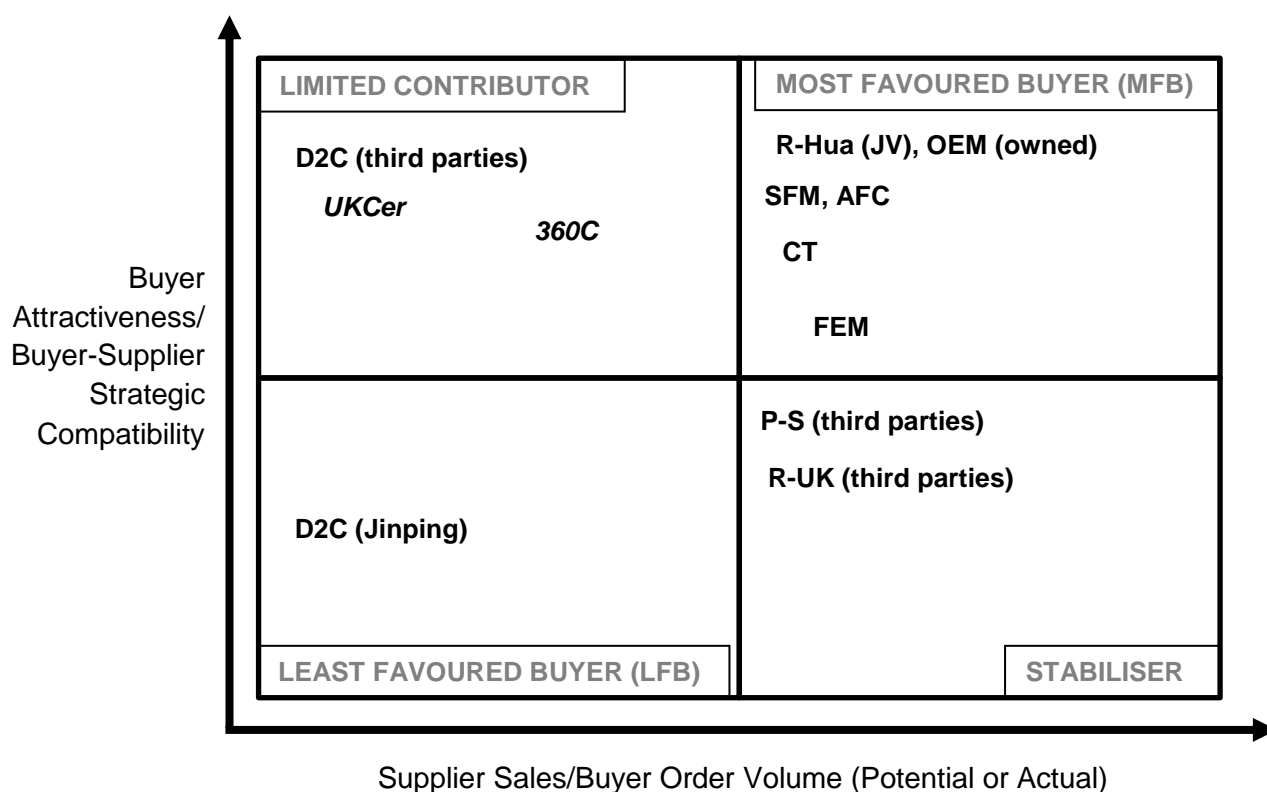
For SMEs, supply risk declines in rough proportion to the quality of the relationship between buyer and supplier (whether direct or by proxy). For MNEs, supply related risk is less relationship-dependent, but appears to be strongly connected to the strategic importance of the Chinese market and the proximity of the supply base to the China market, and to the level of technology being supplied and the availability of suitable suppliers inside China.

#### **9.1.7 Buyer Status and Supplier Perspective**

It may be useful for foreign companies sourcing in China to consider their status from the perspective of their suppliers. On the premise that relationships influence risk, buyers seeking low risk should attempt to build relationships with suppliers. The perception and business attractiveness of a foreign partner or buyer will likely influence the quality of the relationship the two parties share, and therefore, the risk borne by the buyer. Based on Booth (2010), Figure 36 (following) describes four categories of buyer as seen from the supplier's position. The ideal category is Most Favoured Buyer (MFB). The MFB has earned the supplier's loyalty and commitment. A high degree of mutualism characterises the relationship, so the buyer can consider supply risk as low. In risk terms, the most undesirable category is that of Least Favoured Buyer (LFB). Because the LFB is short-term focused and places orders of low volume, it is perceived by the supplier as having least value. The relationship between the supplier and the LFB is characterised by low trust and low mutualism. Buyer status and supply risk have an inverse relationship: the higher the buyer's status, the lower the supply risk that the buyer faces. All the MNE cases examined appear to have MFB status; the second highest status ("Stabiliser") describes the larger SMEs who place higher volume orders than the smaller SMEs and are strongly integrated with a small number of Chinese suppliers via joint-ventures and robust relationships. "Limited contributor" status describes the third ranking status. The smaller SMEs belong to this category. They place regular but low volume orders so are not especially significant customers to their main suppliers.

Figure 36 (following) depicts a matrix in which all the firms examined in this research are placed in one of the four categories defined above.

Figure 36 Buyer Status: The Supplier Perspective



## 9.2 Theoretical Output 2. Risk and China Presence: The Interfirm Relationship

In the Chinese supplier-foreign buyer scenario, degree of presence in China is heavily determinative of interfirm relationship quality: the quality of the interaction of key individuals influences the interactional performance of their respective firms, with strong implications for risk.

### 9.2.1 Adapted Bowtie and Diamond Models of Interfirm Relationships

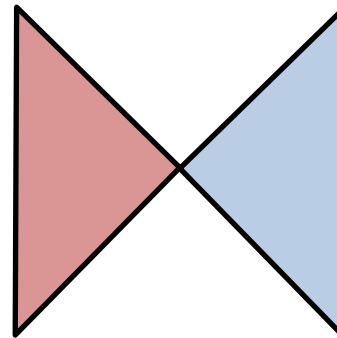
According to Cooper *et al* (1997, citing Walton as the original proponent), most interfirm relationships can be described using one of two models: classic bowtie (1) or classic diamond (2). Of the two, the classic bowtie model is more descriptive of the traditional supplier-buyer relationship. The bowtie-versus-diamond model is restrictively dichotomous. It reflects little of relevance to the Chinese supplier-foreign buyer interfirm relationships discovered by this research.

For this reason, I propose several variants (3 to 8) that are more reflective of the case studies and key informant findings. We begin by discussing the original two models, before progressing to a discussion of the models developed out of this research.

#### *9.2.1.1 Classic Bowtie*

In the bowtie model, the two wings represent the two companies. They converge in minimalist manner, typically through buyer and salesperson. Both sides communicate through this single dyad. The relationship between the two firms is precariously concentrated in a very small number of individuals. Communication between the various functions of the firms is mediated through the interfacing individuals. This bowtie configuration describes arm's-length and transactional relationships. Opportunity for mutually beneficial development is limited by the dyadic, point-to-point nature of the interaction.

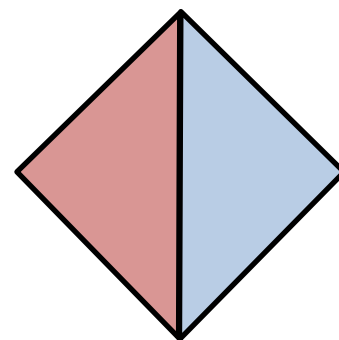
*Figure 37 The Classic Bowtie Model of the Interfirm Relationship*



#### *9.2.1.2 Classic Diamond*

A superior situation is represented in the opposite of the classic bowtie, i.e. the classic diamond, in which the wings are reversed and juxtaposed flush together in perfect vertical alignment. In this configuration, the functions of both sides are accessible to each other. Processes thus become visible, communication is direct (not mediated), and increased integration and mutualism are inevitable.

*Figure 38 The Classic Diamond Model of the Interfirm Relationship*



#### *9.2.1.3 Remote Bowtie*

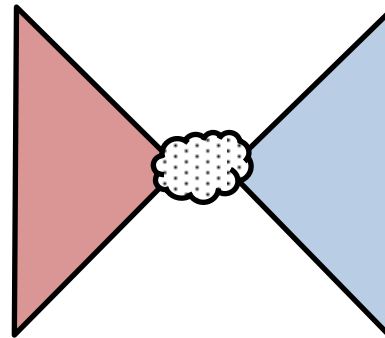
The “remote bowtie” (3) describes the near- zero interaction that characterises procurement through online platforms. This is the most risk-fraught supply option a buyer can take. The buyer is unknown to the supplier and the supplier is unknown to



the buyer. In some cases, supplier information is obtainable, but verification will be challenging. The remote bowtie is digitally enabled so there is little information besides the existence of e-procurement portals such as Ali Baba (whose popularity suggests e-procurement is fairly commonplace). E-procurement as a

long-term supply strategy is probably a reckless option. Risk-reducing relationships have very limited possibility of developing. The interaction is digitally mediated so even less mutualist than the classic point-to-point bowtie. Three key informant sources reported instances of UK SMEs using e-procurement platforms to acquire product from Chinese suppliers; all three expressed the opinion that procuring goods from unknown suppliers is risky practice. Both UKCeram and 360C reported first hand experiences of failed attempts to source product from Chinese suppliers via websites.

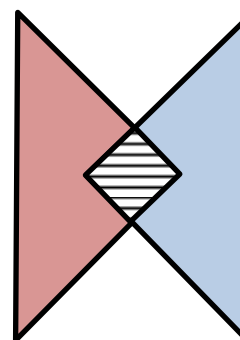
*Figure 39 The Remote Bowtie Model of the Interfirm Relationship*



#### *9.2.1.4 Overlapping Bowtie*

The overlapping bowtie (4) describes the supplier-buyer relationships in which interaction and communication between parties occurs and is accompanied by some degree of mutuality and trust. The parties retain a degree of separation but benefit from the limited mutualism. This relationship can be observed in the third-party supplier relationships of D2C, P-S, R-UK, and all the foreign SMEs. These companies practice trust-building and mutualism with all their third-party suppliers – via their key China person/people (in the case of SMEs) and via their national HQ-based supplier account managers (in the case of MNEs).

*Figure 40 The Overlapping Bowtie Model of the Interfirm Relationship*

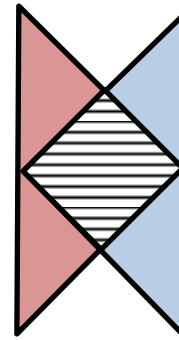


#### 9.2.1.5 Fused Bowtie

The fused bowtie (5) represents the optimum risk-reducing relationship short of a full merger or acquisition. In this case, the supplier and buyer are collaborating, sharing knowhow and technology, co-investing, and are strategically interdependent. However, they retain partial separation – the buyer, for example, does not subsume the supplier;

both parties retain their own organisational identity; not all functions benefit from or require communication with their equivalents in the partner entity (as the diamond implies), hence the non-overlapping areas shown in the model. The maximally fused bowtie describes joint-venture entities and buyer-supplier relationships in which one party is deeply involved to the degree of dedication to the other. Buyers seeking long-term, strategic supply options will reduce supply base risk by applying this degree of fusion. Likewise, suppliers seeking long-term, dependable orders and the contribution of a foreign buyer will find value in this configuration. It is reasonable to assume that this state could evolve gradually from the overlapping bowtie, as a result of proven mutually beneficial experiences and continuing strategic compatibility.

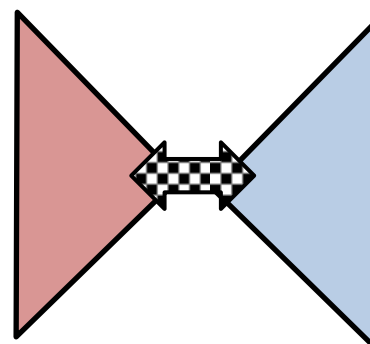
*Figure 41 The Fused Bowtie Model of the Interfirm Relationship*



#### 9.2.1.6 Consultant Bowtie

The consultant bowtie (6), although preferable to the classic bowtie, depicts the supplier and buyer-linking consultant. Communication between the two entities occurs through the paid intermediary, which could be a China solutions provider such as Cargo East Asia or a China-specialising consultant such as Anderson (both were key informant

*Figure 42 The Consultant Bowtie Model of the Interfirm Relationship*



sources interviewed in this research). For SMEs wishing to avoid the lengthy and costly process of developing risk-reducing relationships with a Chinese supplier and looking instead to simply secure low cost supplies in an arm's-length fashion, use of

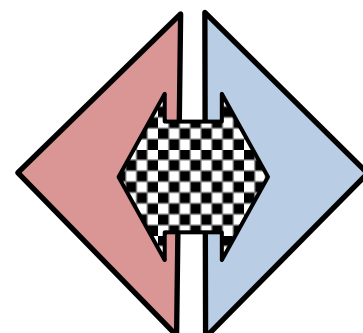
an intermediating, introducing, problem-solving consultant is probably prudent. For SMEs seeking strategic China-side supply, dependence on an intermediary is less desirable. Supply strategy must incorporate the cost and complexity of dealing with the consultant. Resources might however be more profitably used in the nurturing of appropriate risk-reducing relationship with a supplier *directly*.

For MNEs, the value of intermediating consultants is likely low. If trade is sustained into the long-term, the intermediary is likely to become irremovable. The presence of the intermediary perpetuates a fixed distance between buyer and supplier. The buyer use the intermediary for its capabilities, but dependence on the intermediary could become a new risk for the buyer. Buyer and supplier rarely communicate, which creates the opportunity for the intermediary to make itself indispensable. The intermediary may lack the in-depth industry knowledge required for effective communication. As the nature of the product increases in specificity, the pool of qualified consultants diminishes. Companies seeking suppliers of highly specialised product would be better served by use of an in-house “key China person”, who would understand the industry, be personally invested in the buyer’s firm, and whose relationship-building efforts will reward the buyer’s firm directly. In the consultant bowtie, an individual or small group of individuals relays communication from all sections of their respective companies. Unlike the classic point-to-point bowtie, which is direct though bottlenecking, interaction in the consultant bowtie model is mediated so is *indirect*. Both sides interact through the intermediary. This arrangement puts critical communications in the hands of a third-party who can either distort or refine the message to positive or negative effect, depending on their expertise and professionalism. This arrangement potentially adds an additional layer of risk.

#### 9.2.1.7 Consultant Diamond

The consultant diamond (7) is a variant on the consultant bowtie, but lacks empirical support in this research so is entirely hypothetical. In the consultant diamond, two companies attempt the full alignment represented in the classic

*Figure 43 The Consultant Diamond Model of the Interfirm Relationship*



diamond, but due to proximity issues (geographical and cultural factors), lack the requisite modulation and cross-communication capability, so use the services of a consultant or China solutions provider.

Thus, this model requires high levels of involvement from a third-party intermediary. In this model, communication is not point-to-point as in the consultant bowtie; communication is from any individual/function in one firm to any individual/function in the other, which necessitates a far greater range and intensity of activity on the part of the intermediary. This arrangement amplifies the shortcomings of the consultant bowtie, but might also enable risk-reducing mutualism between culturally disparate companies with insufficient numbers of key China people.

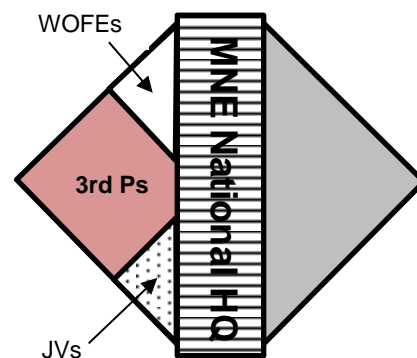
#### 9.2.1.8 MNE Hexagonal Diamond

The MNE hexagonal diamond (8) describes the MNE approach to China sourcing. The right side wing (grey) represents the global MNE entity. The central vertical block (striped) represents the regionally deputised entity, i.e. the national headquarters in China (or indeed any other country). To the left of this block is the Chinese supply base. Joint-ventures and wholly-owned factories

(WOFEs: wholly-owned foreign enterprises) are strongly aligned with the MNE via the national HQ. For this reason, the bases of the triangles representing joint-ventures and wholly-owned factories are flush with the China-facing edge of the MNE's national HQ.

Third-party suppliers make up the remainder of the MNE's China-side supply base, but their degree of integration with the MNE, via the national HQ, is limited. For this reason, the MNE national HQ and the third-party supply base share a relatively small area of interface. The MNE's connectivity with its wholly-owned factories and joint-ventures is far greater than its connectivity with any third-party supplier. Its third-

Figure 44 The MNE Hexagonal Diamond Model of the Interfirm Relationship



party supply base, although significant, is less integrated into the MNE and vice versa. By the nature of their ownership, wholly-owned factories and joint-ventures with Chinese companies are far more closely aligned with the MNE and under greater direct control. The national HQ functions as the nation-specific face and presence of the MNE. The MNE interacts with each of its national markets and supply bases by deputising its activities. By using a national headquarters that manages the national supply base and market activity, the national HQ performs, albeit at far larger scale, activities that are roughly the same as the activities performed by the key China person in the case of the SMEs.

The hexagonal diamond is conceptually close to the classic diamond: both sides are maximally integrated. However, unlike the classic diamond, the hexagonal diamond does not imply that the functions of one entity interact directly with the functions of another. The MNE is too large and too complex an entity to standardise the practice of departments communicating directly with thousands of suppliers. Instead, the MNE deputises communication to the national HQ inside the country in which the supplier is operating. The hexagonal diamond attempts to show how an MNE – through its national HQ – exercises a high level of local control and local responsiveness. By deputising its presence to permanently present, local people familiar with the local ways of business and national/regional macro-economic conditions, the MNE navigates cultural and political conditions that would impede a remotely operating organisation.

The MNE shares the highest degree of visibility with those organisations in which it is most deeply invested. Alignment between the MNE and its joint-ventures and wholly-owned factories is thus higher than with its third-party suppliers.

### **9.2.2 The Adapted Bowtie and Diamond Models Summarised**

The remote bowtie (3) is the riskiest China sourcing approach. No relationship exists between supplier and buyer, so risk is highest. The overlapping bowtie (4) and the maximally fused bowtie (5) describe the better, lower risk approaches of SMEs to China sourcing. Some SMEs are more integrated with their Chinese suppliers than others. With degree of integration comes a lowering of supply risk. The consultant bowtie (6) describes the buyer-supplier relationship when both sides interact through a consultant or other intermediary. The consultant diamond (7) is a hypothetical

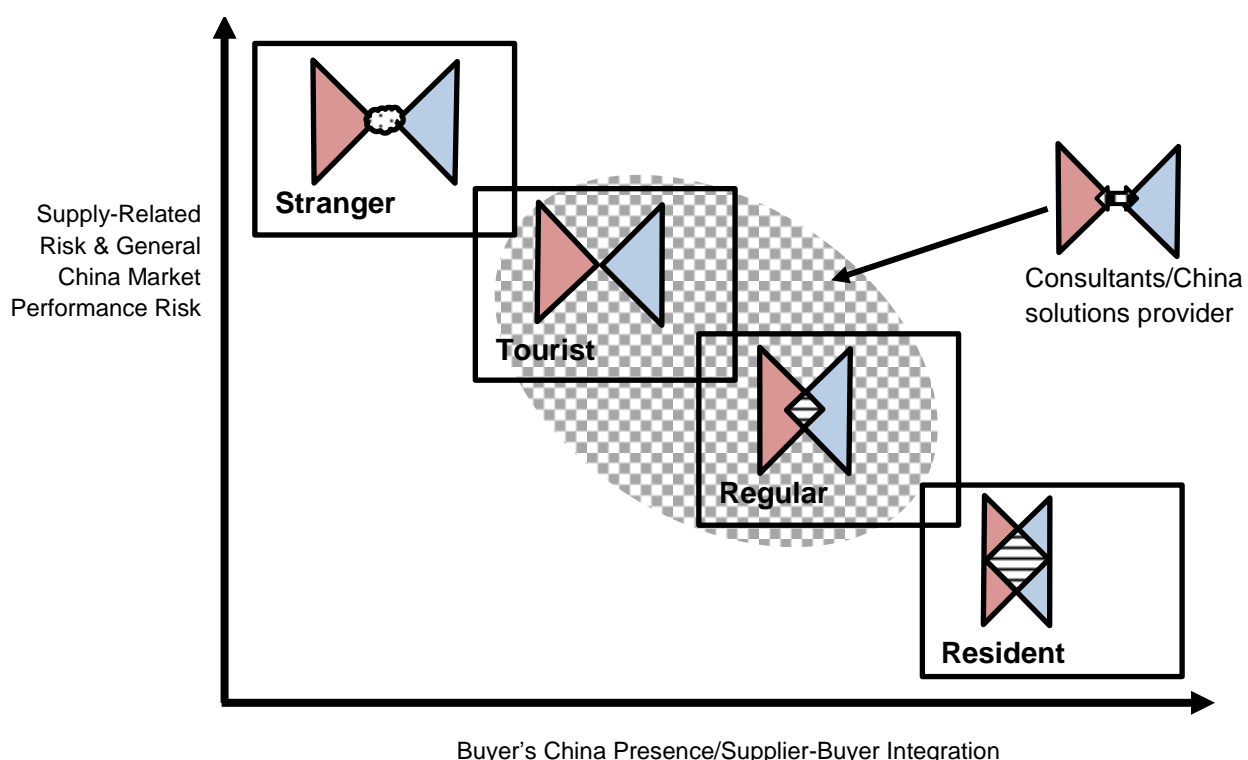
attempt to achieve the integration of the classic diamond through the intensive use of a consultant or another intermediary. The hexagonal diamond (8), describes the nationally-deputised approach of MNEs to China sourcing.

All the sources interviewed concurred that risk decrease in proportion to the degree of buyer's China presence, since buyer's presence and relationship quality correlate closely. In all SME cases, China presence was a significant factor in relationship quality. In-person interaction and direct involvement, especially in problem solving, has a positive effect on relationship quality. The lower the buyer's China presence, the fewer the opportunities for trust-building interaction between managers.

Several respondents (UKCeram and various SME instances reported by consultants) observed that China market performance is also influenced by China presence. In-person interaction with customers is interpreted as a gesture of commitment, which can help maintain current trade and lead to new business.

Figure 45 describes the relationship between China presence/ relationship quality and China supply/market risk, with illustrative SME relationship models (bowties) included.

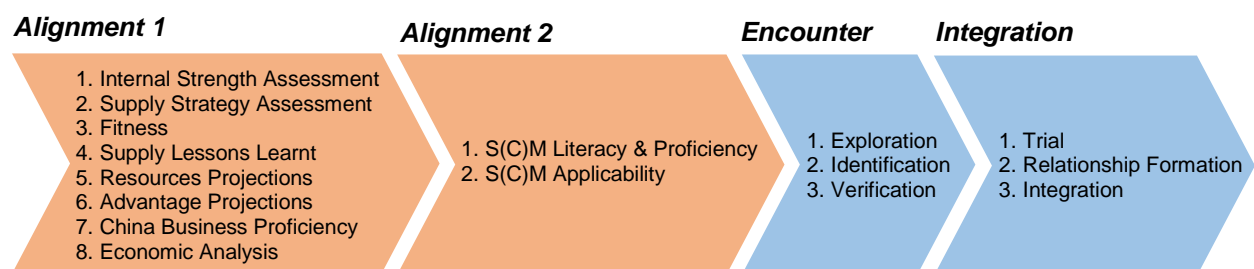
*Figure 45 Risk and China Presence*



### 9.3. Practitioner Output 1. The Four-Step China Supplier Establishment Tool

The first two steps of this tool (*Alignment 1* and *Alignment 2*) derive from experiences reported by all four SME respondents, and from the recommendations of industry and academic respondents. The other steps (*Encounter* and *Operate*) are also based on the experiences of SME practitioners, but were derived mostly from consultant informant input. The tool (depicted below in Figure 46) describes a systematic, incremental approach that SMEs might take to acquiring and operating a reduced risk China supply base in general or a specific China-side supplier.

Figure 46 The Four-Step China Supplier Establishment Tool



#### 9.3.1 Alignment 1

Prior to seeking a new Chinese supplier or commencing trade with an already identified Chinese supplier, the buying organisation evaluates its degree of internal integration. This process consists of the following tasks (ideally sequentially performed):

1. *Internal Strength Assessment.* An assessment of internal knowledge regarding product, market, and industry.
2. *Supply Strategy Statement.* The buying organisation reflects on the premises of its envisaged China supply strategy: price competitiveness alone; price competitiveness in conjunction with China market exploration/penetration; or an entirely different strategy. A clear vision of China supply strategy is articulated in a statement.
3. *Fitness.* The China supply strategy statement is then assessed for fitness with the organisation's overall long-term strategy. The consensus among management regarding China supply and its relationship with/criticality to long-term strategy is considered. If the degree of fitness is high, i.e. China

supply serves the organisation's long-term interests, then management proceed to phase 4.

4. *Supply Lessons Learnt*. Management reflect on their experiences with previous and existing China-side and non-China suppliers: the quality of the relationships, the risks, the proven effective methods of risk reduction, the degree of interaction, the nature of the most common supply-related problems, and all other issues related to supply policy and practice. In short, management create an account of lessons learnt concerning relationships and risk *in the context of non-China supply* management.
5. *Resource Projections*. The resources required to operate China-side suppliers are considered. These will include human resources, plant, and technology requirements. This task is similar to a make-or-outsource decision, but will incorporate all known China-specific factors and costs.
6. *Advantage Projections*. The projected advantages (ideally as quantified as is possible) of China supply are carefully weighed against the costs/disadvantages of China supply. Information from consultants or industry contacts already sourcing in China should be utilised to create as complete an information picture as possible.
7. *China Business Proficiency*. The organisation then considers how much in-house knowledge it possesses regarding China business dealings in general. This will include an assessment of the presence or absence of relevant capabilities within current staff. Steps to address any deficits must be considered at this point.
8. *Economic Analysis*. A structured analysis of China-specific macro and microeconomic influences is undertaken, ideally with information and insight provided by impartial outside sources.

### **9.3.2 Alignment 2**

If all eight tasks of the preceding step yield outcomes that support the prospect of China-side supply, the second step can begin. In *Alignment 2*, the buying organisation critically reflects on its general supply chain/supply management capabilities:

1. *Supply (Chain) Management Literacy and Proficiency*. Considered first is the degree of practice and comprehension of established, generic (i.e. non-China



specific) methods and philosophies of supply risk management. Examples of methods include decoupling, postponement, and mass customisation. Examples of philosophies include mutualism, integration, the Four Rs, and visibility.

2. *Supply (Chain) Practice Applicability*. Next, management reflect on the potential application of theoretical and/or practically advantageous, *proven good* supply (chain) management tools and techniques to the envisaged Chinese supply scenario.

After completing *Alignment 1* and 2, management will have acquired a structured, informed report on the organisation's internal alignment, and thus have achieved an understanding of its strengths and weaknesses in relation to the prospect of China supply. Assuming management have sufficient confidence to proceed, they can then commence actualisation of their China supply ambitions by following the next two steps.

### **9.3.3 Encounter**

In the third step, management explore the Chinese supply market, identify potentially capable suppliers, and then verify the authenticity and capability of the suppliers they have selected.

1. *Exploration*. SMEs lacking China-side presence or industry contacts can use consultants or China solutions providers to help them identify capable suppliers. SMEs possessing China-side presence or industry contacts should use those organisations or individuals to introduce them to proven-good, reliable, authentic, capable Chinese suppliers. The use of a mutually known and respected intermediary often accelerates the trust-building process that is essential to the risk-impactful relationship between buyer and Chinese supplier. When exploring the Chinese supply market, use of contacts and networks often saves time and cost.
2. *Identification*. Potential suppliers are shortlisted. SMEs can use industry certifications, ISO compliance, and any other standards they deem indicative of a supplier's capability to eliminate. Site inspections, sample testing, referrals, and any other methods of gauging quality of product and process should be performed.

3. *Verification.* If the outcome of the preceding stage is satisfactory to the buyer, due diligence and as many forms of background check on the supplier's trading history and credentials as possible should be undertaken. For this phase, a consultant or China solutions provider usually provides the best results.

#### **9.3.4 Operate**

In the final step, the buyer commences trade with the supplier, wherever possible applying proven-good risk reduction practices in combination with advice and recommendations by consultants and industry contacts with China supply experience.

1. *Trial.* Orders should begin small. Order volume can increase pending buyer satisfaction with both product and delivery.
2. *Relationship Formation.* Concurrent with conditional incremental order growth, managers try to establish trust-generating relationships with supplier managers. Practitioners concur that relationship strength has a positive effect on risk reduction, and that relationship strength increases roughly in proportion to time spent in China. While orders are ongoing, foreign managers should visit China regularly and reciprocate hospitality.
3. *Integration.* When a trust relationship is developing and general satisfaction characterises the exchange, tangible gestures of mutualism can grow more frequent, leading to increasing integration. Trust relationship-generated, tangible integration between supplier and buyer lowers supply risk better than formal methods such as contracts or performance agreements. Although the buying organisation may insist on the supplier signing contracts, formal methods should be considered weak forms of risk reduction and unenforceable. Therefore, a relational, mutualist approach is preferable.

### **9.4 Practitioner Output 2. China Supply Risk Assessment Tools**

This tool is designed to help managers measure their China supply risk. The tool contains 25 questions that reflect the most recurrent risk-reducing recommendations and practices provided by the participants in this research. The 25 questions can be grouped into five categories of risk-influencing activities:

China supply risk varies for SMEs and MNEs. For this reason, there are two tools: an SME tool and an MNE tool. The tool is usable by companies operating Chinese supply and wishing to ascertain indication of risk. The tool can be made usable to companies not yet operating China supply by grammatical modification of the questions (e.g. "Will we" instead of "Do we").

Questions 1 to 4 on the MNE tool (1 to 7 on the SME tool) describe practical risk-reducing procedures. These recommendations have nearly universal applicability. Their implementation addresses practical causes of risk, such as customs and basic logistical issues, which affect all companies moving goods into, around, and out of China.

In theoretical terms, questions 8 to 25 on the MNE tool (11 to 25 on the SME tool) are much richer. Questions 5 to 7 on the MNE tool (8 to 10 on the SME tool) reflect the consensus of the respondents regarding the low efficacy of legal measures as a method of reducing supply related risk. Questions 8 to 16 on the MNE tool (11 to 16 on the SME tool) stress the criticality of China-relevant internal capability and strategic alignment. Questions 17 to 20 (both tools) reflect the importance of the buyer having an integrated, mutualist, China-supportive supply strategy. Questions 21 to 25 (both tools) assess degree of China presence, because all the respondents interviewed reported China presence as fundamental to a company's ability to create and maintain relationships with Chinese suppliers.

After reading each question, respondents answer by ticking a "Yes" or "No" box. Next to each response box is a numerical value in superscript. This numerical value represents a risk weighting. Not all risks are equally impactful, so the higher risks are assigned a higher value. After answering all 25 questions, the respondent totals the numerical values of his/her responses. The total gives a risk score: "low risk" (total=0-28); "moderate risk" (total=29-57); "high risk" (total=58-85). Both risk assessment tools require refinement. They are presented here only as prototype skeletal examples, which may be built upon by future research.

### 9.4.1 Global MNE Risk Assessment Tool

Global MNE China Risk Assessment Tool		Yes	No
Q1.	Do we use 3PLs to move goods from China to our customers?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q2.	Do we check product quality before shipping to customers?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q3.	Do we test samples of product before we place high volume orders?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q4.	When using a new supplier or ordering a new product, do we place low volume orders initially and gradually increase order volume if we are satisfied with quality?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q5.	Do we rely on local Chinese law to manage our suppliers?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q6.	Do we employ many people in China?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q7.	Do we own land in China or want to?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q8.	Are we involved in large-scale joint-ventures with state-owned companies?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q9.	Do our capabilities make us valuable to the Chinese government (local or central) or to major Chinese companies?	<input type="checkbox"/> 0	<input type="checkbox"/> 5
Q10.	Do we have formal quality control processes?	<input type="checkbox"/> 0	<input type="checkbox"/> 5
Q11.	Do we have a trusting relationship with the Chinese government or local officials?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q12.	Is our business an important part of the local economy?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q13.	Do we provide our suppliers with as much visibility as they require?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q14.	Do we have stringent, formal conditions of supplier partnership?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q15.	Are we making any IP sensitive products in China?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q16.	Do we (or a third-party company) perform due diligence and/or run background checks on prospective suppliers?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q17.	Do we outsource most of our production to third-parties?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q18.	Do we rely on contracts alone to manage our suppliers?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q19.	Do we use guanxi/contacts to help us manage our suppliers and run other operations in China?	<input type="checkbox"/> 3	<input type="checkbox"/> 3
Q20.	Is our overall approach to managing our suppliers mutualist and/or collaborative?	<input type="checkbox"/> 0	<input type="checkbox"/> 5
Q21.	Do we have a representative or manager permanently based in China and accessible to our Chinese suppliers and/or customers?	<input type="checkbox"/> 0	<input type="checkbox"/> 5
Q22.	Do we have Chinese-speaking staff on hand to communicate with our suppliers?	<input type="checkbox"/> 0	<input type="checkbox"/> 5
Q23.	Do we have regular communication with our suppliers?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q24.	Do we meet our Chinese suppliers in-person at least three times a year?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q25.	Do we have a trusting relationship with our suppliers?	<input type="checkbox"/> 0	<input type="checkbox"/> 3

**Maximum score=85 (5\*5+20\*3); 85/3=28.3:**  
**0-28= low risk; 29-57=moderate risk; 58-85=high risk**

#### 9.4.2 SME Risk Assessment Tool

SME China risk Assessment Tool		Yes	No
Q1.	Do we use the services of a China specialist consultant or a China solutions provider like Li and Fung??	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q2.	Do we use 3PLs to move goods from China to our customers?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q3.	Do we use the services a customs clearance broker?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q4.	Do we use letters of credit or escrow accounts?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q5.	Do we check product quality before shipping to customers?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q6.	Do we test samples of product before we place high volume orders?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q7.	When using a new supplier or ordering a new product, do we place low volume orders initially and gradually increase order volume if we are satisfied with quality?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q8.	Do we rely on local Chinese law to manage our suppliers?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q9.	Do we employ people in China?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q10.	Do we own land in China or want to?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q11.	Have we talked to other people in our business about China sourcing?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q12.	Are the longer lead times acceptable to our company and our customers?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q13.	Have we read at least one book on doing business with China?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q14.	Have we researched/considered the costs of shipping from China and paying import duties and any other charges?	<input type="checkbox"/> 0	<input type="checkbox"/> 5
Q15.	Are we making any IP sensitive products in China?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q16.	Do we (or a third-party company) perform due diligence and/or run background checks on prospective suppliers?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q17.	Do we outsource most of our production to Chinese third-parties?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q18.	Do we rely on contracts alone to manage our suppliers?	<input type="checkbox"/> 3	<input type="checkbox"/> 0
Q19.	Do we use guanxi/contacts to help us manage our suppliers?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q20.	Is our overall approach to managing our suppliers mutualist and/or collaborative?	<input type="checkbox"/> 0	<input type="checkbox"/> 5
Q21.	Do we have a representative or manager permanently based in China and accessible to our Chinese suppliers and/or customers?	<input type="checkbox"/> 0	<input type="checkbox"/> 5
Q22.	Do we have Chinese-speaking staff on hand to communicate with our suppliers?	<input type="checkbox"/> 0	<input type="checkbox"/> 5
Q23.	Do we have regular communication with our suppliers?	<input type="checkbox"/> 0	<input type="checkbox"/> 5
Q24.	Do we meet our Chinese suppliers in-person at least three times a year?	<input type="checkbox"/> 0	<input type="checkbox"/> 3
Q25.	Do we have a trusting relationship with our suppliers?	<input type="checkbox"/> 0	<input type="checkbox"/> 3

**Maximum score=85 (5\*5+20\*3); 85/3=28.3:**  
**0-28= low risk; 29-57=moderate risk; 58-85=high risk**

The next chapter closes this thesis. Research questions, outputs/contributions, MNE and SME risk strategies, and potential extensions of this research are presented.



## 10. Conclusions

This final chapter discusses the research questions in light of the research undertaken, articulates the theoretical outputs further, highlights the risk-significance of strategy to MNEs and of social capital to SMEs, and concludes by presenting directions for future research.

### 10.1 The Research Questions Answered

This research set out to answer two research questions. They have been answered as follows.

*1. In the context of China supply chain management and its associated risks, what is the nature of the relationship between supplier and buyer?*

- i. The stronger the relationship between buyer and supplier, the less risk for the buyer.
- ii. The more integrated/strategically compliant the buyer and supplier, the stronger their relationship, the less risk for the buyer.
- iii. The greater the buyer's China-side presence, the more opportunity for interaction relationship-building, the less risk for the buyer.  
(High trust and mutualism characterise strong relationships.)

*2. How do non-Chinese companies manage Chinese suppliers to minimize risk?*

- i. [a] MNEs: China offices;  
[b] SMEs: key China people.  
Scale is the main difference; *both methods are functionally equivalent*: local people with local business and industry knowhow interact with managers and local officials in a locally appropriate manner. Communication is frequent.
- ii. Earning favoured buyer status through
  - [a] placing significant orders;
  - [b] trust relationships; and
  - [c] collaborative interaction

([a] and [b] require in-China presence – see 1.iii).

Ideally, 2.i *also*.

iii. Integration/strategic alignment.

(Requires 2.i and 2.ii *also*.)

Co-investment and collaborative working reduce risk. This stage can likely *not* occur before a strong trust relationship has already been built.

(The practitioner tools proposed in this research might also risk.)

Combined, the case studies and key informant interviews provided thick description of Chinese supply management by MNEs and UK SMEs. In Chapter 8, practice and theory – as revealed by the case studies, key informant interviews, and the literature – were compared. In Chapter 9, the theoretical outputs synthesized and theorized the findings.

## 10.2 Five Theoretical Outputs

This research produced five theoretical outputs. The five derive from the variously interrelated, interacting factors observed to be affecting supply risk for MNEs and SMEs sourcing in China.

- ❖ *Theoretical Output #1*: common methods of China supply risk management (see 9.1.4)
  - ❖ #1a: China supply risk factors *unique to global MNEs* – three pairs of variables identified (see 9.1.5)
  - ❖ #1b: risk and relationship quality/formality (see 9.1.6)
  - ❖ #1c: risk and buyer status/supplier perspective (see 9.1.7)
- ❖ *Theoretical Output #2*: risk, China presence, and the interfirm relationship (see 9.2)

Table 27 displays the correspondences extant in the aspects of the five theoretical outputs. Note that *Theoretical Output #1a* applies to MNEs only; *Theoretical Outputs #1b* and *#1c* apply to both SMEs and MNEs.



Table 27 The Five Theoretical Outputs of this Research and the Correspondence of Their Aspects

Theoretical Output	Aspects Identified			
1. System Patterns	MNEs and SMEs lower supply risk by use of intermediating China-side representatives			
	MNEs operate in-country representation			SMEs use a “key China person”
1a. MNE risk-influencing variables (x3)	(1) China strategy and supply proximity	(2) Technology and supplier availability	(3) The firm's relationship with China's government	
	High Risk			Low Risk
1b. Relationship Quality and Formality	Opportunist	Transactionalist	Mutualist	Partner
1c. Buyer Status and Supplier Perspective	Least favoured buyer (LFB)	Limited contributor	Stabiliser	Most favoured buyer (MFB)
2. China Presence and the Interfirm Relationship	Stranger	Tourist	Regular	Resident

### 10.3 Case Findings

Based on the MNE cases, it appears that in the case of China, market proximity-decreasing in-country mediation has created decentralisation, that outsourcing is intensive and strategic, and central steering is fairly limited. From our MNE case findings, it seems that SC risk is one of many forms of business risk likely reduced by organisational structuring. Thus, *structural design as SC risk mechanism* is likely a worthy topic of investigation.

Rose and Sipling (1997) and Hains (2002) argued that firms are pursuing differentiation by improving their core services, so will increasingly prefer to outsource non-core activities. We saw this seemingly evidenced in both SME and MNE cases. By describing their companies as “integrators” of supplier-made product, two MNE respondents supported this assertion clearly.

Also, as firms downsize and focus on their key competencies, the role and utility of consultants will increase (Caulkin, 1997). This research showed that consultants claim to act as a risk-reducing intermediary buffering the foreign buyer-China supplier interface. Whether or not these intermediaries will remain necessary

(or are today in fact as necessary as the consultants reported) constitutes a question for future research.

## 10.4 Social Capital

Social capital theorists such as Baker (1990), Coleman (1998), and Burt (1992), and Putnam (2000) claim that social capital, like physical and human capital, is a resource generating force that can facilitate firms business activities. Furthermore, Yang and Wang (2011) and Wang *et al* (2014) claim *guanxi* is the Chinese cultural equivalent of social capital. Nahapiet and Ghoshal (1998) identified three dimensions of social capital: *structural*, (information and resources) *relational*, (trust, relationships, and contracts), and *cognitive* (shared modes of behaviour that encourage cooperation). This research revealed some modest insight into the structural and relational dimensions of social capital, but only alluded to, so did not deeply explore, the cognitive dimension.

This research exposed the importance of the “key China person” in reducing China supply risk for SMEs, but could not expand on the social capital significance of the key individuals, their specific activities, and the nature of their interaction with counterparts. Future studies would examine the issues of *guanxi*, trust, and face (all of which feature strongly in the literature on Chinese business) and relate these to SC risk management. If the findings of this study are indicative, social capital is likely of less value in China supply risk management by MNEs.

## 10.5 Limitations and Avenues for Future Research

This study bears the weaknesses and the strengths of its principle method, the qualitative case study. Since the primary source for each case study was an interviewee, the possibility of subjectivity bias is present. To address this, interviewee statements were compared with other sources, and exceptions noted. There were few exceptions – strong thematic convergence emerged during coding. Likewise, the straightforwardness of the creation of the meta-processes revealed strong overlaps both within and across the case studies and key informant material. If subjectivity was present, it was present across most cases and key informant findings.

The case studies may be too few in number to provide anything beyond limited generalisability, making the theoretical and practitioner outputs *extensible only as suggestions for informing and sensitizing theory and practice respectively*. That is, the objective of this research was *not* to obtain robust generalisability, but to create a series of informationally rich, highly relevant accounts of effective risk management practices in the specific context of Chinese supply.

The overwhelmingly positive experiences of the respondents suggest that the sample itself might be biased. It is possible that only respondents who were pleased with their China supply arrangements were willing to participate. This speculation is reinforced by the case of the manager at a famous Margate-based toy manufacturer, who first accepted and then refused to participate, his refusal coming after their much publicised decision to re-shore.

The existence of two categories (SMEs and MNEs) also prompts *comparison*, which might not be useful. A future study might concentrate on SMEs or MNEs only. This study was purposefully designed to provide coverage rather than specificity. For this reason, companies of various sizes and various industries were contacted. Any commonalities revealed by the case studies are therefore likely not attributable to factors of industry or size. For researchers requiring studies of risk as it pertains to specific industries or sizes of companies, the findings of this research are likely of limited value.

The significance of rising oil prices features strongly in post-2010 supply chain literature. In 2016, re-shoring and the declining competitiveness of Chinese manufacturing are strong currents. The China situation is always changing. Most of the practitioners interviewed in this research have been operating China supply for at least 10 years, and reported no significant changes in their *practice*, but stressed the rapidly improving quality and reliability of Chinese suppliers. Thus, the picture is positive. In 2015, oil prices fell to unexpected lows. Political events in 2016 have upset projections regarding the recovery of many of the world's major economies, and Chinese manufacturing capability appears to have reached parity with that of most developed countries. However, the relational nature of Chinese business appears to persist. Several respondents reported that the importance of strong

relationships has not diminished. For SMEs particularly, the centrality of the key China person will remain critical. Future research could examine the prospect that in times of political and economic uncertainty, the necessity and advantages of ties to business will increase. In all the SME case studies, the key China person was ethnically Chinese. Similarly, the in-country employees of the consultants and China solutions companies are also Chinese. By contrast, the SCMG respondent claimed that only Chinese nationals were allowed to hold senior positions. Future studies might investigate the existence and effectiveness of non-ethnically Chinese key China people and intermediaries.

Contradicting the literature and the views expressed by the SME and, to a lesser extent, the MNE respondents, some key informant respondents expressed skepticism about the benefits of China sourcing and integration. According to the consultant key informants, most risk in transactional procurement can be eliminated by use of third-party services, such as customs clearance brokers, quality assurance companies, third-party logistics firms, supplier-buyer matchmakers (e.g. Li and Fung), and by sharing production facilities with other companies. The consultants were in general agreement that for most companies not willing to make major investments in China-side operations or interested in developing China-side markets, *arm's-length outsourcing is the best option*. Arm's-length outsourcing/ transactional procurement from Chinese suppliers comes with risk, but *that risk is only significant for companies who are building their strategies around such practices*. According to the consultants, the biggest supply risk facing foreign companies comes neither from Chinese suppliers nor inefficient China-side distribution, but from buyers' price squeezing. Undue pressure on suppliers to reduce cost results in quality compromise, i.e. "quality fade". When cost pressure ceases, in most cases quality returns to the required level. Empirical studies on the relationship between cost pressure and quality erosion are needed to test this hypothesis.

Further studies are also required to examine the longitudinal picture of Chinese supply management, ideally the relationship between supply risk and the duration of the supplier-buyer relationship, and the effect of incremental integration on supply risk. Case studies of global MNEs with decades of China experience would permit identification of the risk reduction methods that are most effective with different types

of supplier – arm's-length strangers, integrated and non-integrated third-party suppliers, joint ventures, and wholly-owned factories.

Exploration of the SC issues experienced by non-UK SMEs will provide some informative comparison. Risk from the perspective of the Chinese supplier also awaits deeper empirical investigation. This study includes one Chinese MNE key informant source, but its inclusion was not motivated by the desire to provide comparative and contrastive views on supply management risk. The Chinese key informant source was included to provide some account, albeit very modest, of supply risk as seen from the Chinese side. Any future theses about Chinese supply risk could only be enriched by the inclusion of more reverse perspective. As Chinese MNEs expand globally, the need for understanding *risk as it appears to the Chinese increases*. Differences between foreign and Chinese management styles have been extensively examined in the literature, and much has been written concerning the westernisation of Chinese managers, but might not the influence of Chinese MNEs overseas result in the Sinicization of management styles? This is an interesting question that deserves exploration.

Studies on the risks and advantages of e-procurement will also be necessary, since this is the arm's-length arrangement that should, according to the findings of this research and the consensus of the literature, present the riskiest supply option. The apparent popularity of e-procurement suggests however that the risks for most buyers must be tolerable. If this position is supported by empirical data, the argument that trust and relationships reduce risk will be challenged.

The data generated by this research was in some senses deeper than expected, and in some senses lighter. For example, no respondents reported their Chinese supply base as particularly risky. All respondents spoke generally favourably about their China supply experiences, and all remarked that the last decade has seen remarkable improvement in Chinese suppliers' process and product quality and delivery reliability. Some MNE respondents identified corruption, nationalism, and cynically motivated collectivist behaviour as major sources of risk affecting Chinese supply, but requested that the details of their comments be omitted from the transcript. Following the formal interview, one SME respondent recounted several

problem-solving techniques and methods of managing Chinese staff that he did not want reported. These requests were duly honoured. Future research could delve into these more problematic but potentially enlightening aspects of Chinese business.

## **10.6 Summary of Contribution**

By providing a qualitative, non-positivist approach to the subject of supply chain risk management, this research develops the empirical supply chain management literature. The thesis considers cultural, macroeconomic, government and market involvement, and other conditions not typically covered in the literature. It reveals China risk strategies used by MNEs and SMEs (differences and similarities), posits the significance of the human and intercultural dimension of risk, and demystifies some cultural issues regarding Chinese business practices and China risk.

The implications of this research and its outputs also have relevance to other areas of business studies, particularly to international business management (liabilities of foreignness etc.), theories of internationalisation, and foreign direct investment.







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## Appendix





## Appendix Contents

<b>Appendix Figures</b>	<b>3</b>
<b>Appendix Tables</b>	<b>4</b>
<b>1. Trade Data</b>	<b>5</b>
<b>2. Chinese Terms</b>	<b>7</b>
<b>3. Terms in Other Languages</b>	<b>9</b>
<b>4. Systematic Literature Search Method</b>	<b>11</b>
4.1 Inclusion and Exclusion Criteria	11
4.2 Criteria of Classification	12
4.3 Literature Search 1	14
4.4 Literature Search 2	17
4.5 Literature Search 3	19
<b>5. Case Study Literature</b>	<b>25</b>
5.1 Case Study 1: French Electrical Manufacturer (“FEM”, Global MNE)	25
5.2 Case Study 2: Canadian Transport (“CT”, Global MNE)	28
<b>6. Semi-Structured Interview Template</b>	<b>35</b>
<b>7. Coding Tables</b>	<b>45</b>
7.1 Thematic Analysis by Coding	45
7.2 Frequency Tables	47
7.3 Most Frequent Codes by Sources	56
<b>8. Interviewee Details</b>	<b>61</b>

## Appendix Figures

<i>Figure 1 Systematic Literature Searches 1 to 3: Counts of Included Articles</i>	22
<i>Figure 2 Thematic Intersection and Coverage of the Literature</i>	23
<i>Figure 2 Relative Thematic Dominance – All Sources: By Frequency of Code</i>	55

## Appendix Tables

Table 1 Article Inclusion Criteria .....	11
Table 2 Article Exclusion Criteria.....	12
Table 3 Articles Eliminated By Inclusion/Exclusion Criteria .....	12
Table 4 Quality Criteria and Classification of Articles .....	13
Table 5 Articles Retrieved: Totals per Classification, Total Accepted .....	14
Table 6 Literature Search 1: Conditions – All Databases .....	15
Table 7 Literature Search 1: Articles Returned, Eliminated, and Retained .....	15
Table 8 Literature Search 1: Article Counts by Year 1984-2014.....	16
Table 9 Literature Search 2: Conditions – All Databases .....	17
Table 10 Literature Search 2: Articles Returned, Eliminated, and Retained .....	18
Table 11 Literature Search 2: Article Counts by Year 1984-2014.....	19
Table 12 Literature Search 3: Conditions – All Databases .....	20
Table 13 Literature Search 3: Articles Returned, Eliminated, and Retained .....	20
Table 14 Literature Search 3: Article Counts by Year 1984-2014.....	21
Table 15 Parent Themes: Ranking by Frequency .....	45
Table 16 Sources: Category, Classification, Description, and Identifying Code .....	47
Table 17 “Relationships” Parent Theme: Sources and Frequencies.....	48
Table 18 “Macroeconomics” Parent Theme: Sources and Frequencies.....	49
Table 19 “Strategy” Parent Theme: Sources and Frequencies.....	49
Table 20 “China” Child Theme: Sources and Frequencies.....	50
Table 21 “Cultural Issues” Sub Theme: Sources and Frequencies .....	50
Table 22 “Manufacturing” Sub Theme: Sources and Frequencies.....	51
Table 23 “Risk” Child Theme: Sources and Frequencies.....	51
Table 24 “Quality” Sub Theme: Sources and Frequencies.....	52
Table 25 “Strategy” Child Theme: Sources and Frequencies.....	52
Table 26 “Suppliers” Sub Theme: Sources and Frequencies.....	53
Table 27 “Supplier Management” Sub Theme: Sources and Frequencies .....	53
Table 28 “Supplier Selection” Sub-sub Theme: Sources and Frequencies .....	53
Table 29 “MNEs” Child Theme: Sources and Frequencies.....	54
Table 30 Most Frequent Codes: All Sources (n=17).....	56
Table 31 Most Frequent Codes: Case Studies Only (n=2).....	56
Table 32 Most Frequent Codes: All Industry Key Informants (n=6).....	57
Table 33 Most Frequent Codes: All Other Key Informant Sources (n=9).....	57
Table 34 Most Frequent Codes: Case Study and MNE Key Informants (n=4) .....	58
Table 35 Most Frequent Codes: UK SME Key Informants (n=4) .....	58
Table 36 Most Frequent Codes: Academic Key Informants (n=2) .....	59
Table 37 Most Frequent Codes: Consultant Key Informants (n=3) .....	59
Table 38 Most Frequent Codes: Firm Comparator Key Informants .....	60
Table 39 Most Frequent Codes: LinkedIn Discussion Key Informants* .....	60

# 1. Trade Data

## Source

All data used in these charts comes from the Office of National Statistics (2015).

Figures for 2015 and 2016 figures were not available at time of writing.

## SITC Codes (United Nations, 2015)

SITC code 6: manufactured goods – paper, textiles, cement, iron and steel, copper.

SITC code 7: machinery and transport equipment – computer equipment, televisions, cars.

SITC code 8: miscellaneous manufactures – furniture, clothes, footwear, cameras, books, toys.



## 2. Chinese Terms

### Guanxi

A Chinese word (guānxì: 关系) that is usually interpreted as “relationships” or “connections”. Detail regarding the definition of this term is provided in Chapter 2. In this thesis, the word is written without tonal diacritics. This is to reduce visual noise. See the MSc thesis by Wilkinson (2011) for an overview of the various definitions and additional detail on the concepts.

The following list provides details on the Chinese terms that appear in the literature discussed in **Chapter 2.3.4** of the main thesis. Authors differ in their use and definitions of terms. For this reason, the list items are separated by authors’ names.

### Barnes *et al* (2011)

There are three dimensions of guanxi: “feeling” (gǎnqíng: 感情); “emotion” (rénqíng: 人情); and “trust” (xìnren: 信任). Other authors, such as Jia and Wang (2013), use similar terms.

### Kriz and Keating (2010)

Guanxi trust is “deep trust” (xìnren: 信任). “Friendship guanxi webs” are shúrén guānxì (熟人关系).

### Wang (2005)

*Renqing* (rénqíng: 人情) is the Chinese term for affection, closeness, emotion, and empathy. Has connotations of good will and reciprocation.

### Yang and Wang (2011)

These authors provide no Chinese characters for their terms *qing*, *li*, and *liyi*. Their use of *qing* to mean “emotions” appears appropriate (qíng: 情 is usually translated as “emotions” or “feelings”). Modern Chinese has no word for “reciprocation” that is pronounced *li* however, so I am unsure which character/concept the authors are using *li* to represent. Jia and Wang (2013) use *bao* (bào: 报) to describe “reciprocity”; on the other hand, Yan (1996a, b) uses *renqing* (rénqíng: 人情) to mean “reciprocity”

and “empathy”. There are two possibilities: *lǐ* (礼) or *lǐ* (理). The former connotes the Confucian conception of proper conduct, favour, and etiquette; the latter can be defined as “reason”, “logic”, “arrangement” or, by extension, “management” or similar (e.g. *guǎnlǐ*: 管理). Because reciprocation is a key metaphysical theme in both Daoist and Confucian literature, where instances of 礼 and 理 and their respective concepts are abundant, either could be correct. The third term, *lìyì* (lìyì: 利益) is less ambiguous. The authors’ usage corresponds with the orthodox definitions, i.e. “profit”, “gains”, and “benefits”.

The last term, *quanzi* (*quānzi*: 圈子), is usually interpretable as the approximate equivalent of “social circle”, so is not a precise match for “networking” (or indeed “social capital”, which is translated literally as *shèhuì zīběn*: 社会资本).

### **Leung et al (2005)**

These authors use the Chinese word *xinyong* (*xìnyòng*: 信用) to mean “trust”.

### **Jia and Wang (2013)**

According to these authors, there are four associated concepts of *guanxi*: “favour” (*rénqíng*: 人情); “emotion” (*gǎnqíng*: 感情); “trust” (*xìnyòng*: 信用); and “reciprocation” (*bào*: 报).

### **Buckley et al (2006)**

The Chinese term for face (as in pride, regard, social standing, dignity, or esteem) is *miànzi*: (面子).

### 3. Terms in Other Languages

#### **Alston (1989) Chapter 2.3.17**

In Japanese, *wa* is written using the following kanji (Chinese character): 和, which means “harmony”. The Japanese also have a modern term that connotes personal connectivity with instrumental advantages: コネ, pronounced “kone”, and is short for the English term “connections”.

In Korean (hangul), *inhwa* is 인화. In Chinese characters, it is 人和, which means “human/people harmony”.





## 4. Systematic Literature Search Method

### 4.1 Inclusion and Exclusion Criteria

For each literature search, five databases were interrogated. These databases vary considerably in the degree of search condition specificity available, hence the following inclusion and exclusion criteria were applied to eliminate articles that were grossly irrelevant. Table 1 and 2 specify the inclusion and exclusion criteria used and the rationale behind their usage. Table 3 provides the figures of articles initially retrieved and finally remaining after elimination according to these criteria.

*Table 1 Article Inclusion Criteria*

Criterion no.	Criterion	Rationale
1.	Two-star academic journals/recognised scholarly publications	Ensures two-star academic quality/peer-review standards <i>as minimum</i> .
2.	Theoretical/conceptual or empirical articles	Provides informative working assumptions and data.
3.	Working papers/unpublished theses	Ensures coverage of most recent research.
4.	International	Ensures cross-nation scholastic input and representation of the international knowledge base.
5.	Quantitative	Captures divergent forms of empirical evidence – within predefined boundaries of relevance (see <i>Exclusion Criterion no. 3</i> ).
6.	Qualitative	
7.	Editorials	In journals meeting <i>Inclusion Criterion no. 1</i> , and discussing relevant concepts, research, theory, or literature.
8.	Number of Citation Counts = >40	Identifies articles that are well-cited* so can be considered influential. *See <i>Inclusion Criterion no. 9</i> (below).
9.	Number of Citation Counts = <40 <i>but</i> title, abstract, or conclusion indicate moderate high relevance	Identifies articles that are <i>less cited due to recent publication but whose content is relevant nonetheless</i> . Ensures recent but relevant articles are included <i>even if relatively uncited</i> .

*Table 2 Article Exclusion Criteria*

Criterion no.	Criterion	Rationale
1.	No articles published before 1984	Captures contemporary research rather than legacy.
2.	No industry sources (including extracts)	Prevents inclusion of potentially biased data/reduces influence of interest effects.
3.	No non-relevant journals  ( <i>Excluded disciplines</i> : music studies, performing arts, archaeology, art history, medicine, classics, antiquity studies, literature, natural sciences, mathematics, and computing.)	Excludes divergent emphases by limiting scope to relevant academic disciplines.  ( <i>Included disciplines</i> : business and management studies, organisation studies, anthropology, psychology, sociology, Asia-Pacific studies, political science, international studies, communication studies, and behavioural science.)
4.	No non-English language articles	Obviates hermeneutic hazards/attain linguistically unconditional repeatability.
5.	Citation counts = <40 and title, abstract, or conclusion indicate low relevance.	Eliminates articles that are <i>not well-cited and whose content lacks relevance</i> , so cannot be considered influential or insightful for this research. (See <i>Inclusion Criterion no. 8</i> and <i>no. 9</i> in the preceding table.)

*Table 3 Articles Eliminated By Inclusion/Exclusion Criteria*

Search	Total No. of Articles Retrieved	No of Articles Eliminated by inclusion\Exclusion Criteria	No of Articles Remaining after Inclusion\Exclusion Criteria
LS1	2262	2004	258
LS2	781	507	274
LS3	2808	2674	134
Combined	5851	5185	666

## 4.2 Criteria of Classification

Articles that were not eliminated by the inclusion/exclusion criteria were further filtered by quality criteria, which were imposed to determine the suitability of each article's content and increase the literature's specificity to the research question by eliminating uninformative articles. This process filtered the literature according to pertinence: directly relevant (A), partially relevant (B), and least relevant (C). This way, only articles deemed from a reading of their abstract as directly relevant were included. The following table lists all the quality criteria applied and the classifications thus determined.

Table 4 Quality Criteria and Classification of Articles

Quality criterion		Classification		
		A	B (B1)	C (&B2)
1.	<b>Relevance to [keywords]*</b> <b>*LS1 keywords: [suppl]* AND chin*</b> <b>*LS2 keyword: [guanxi]</b> <b>*LS3 keywords: [suppl]* AND risk]</b>	<p>[Keyword] is the central theme/topic of research. Draws upon a rich and full comprehension of the relevant literature. Tests currents in established theory or presents valuable, informative, alternative perspectives.</p>	<p>Features basic discussion of [keywords]. Discussion is descriptive more than exploratory or theoretically experimental. Theories relate and/or are relatable to [keywords], but partially.</p>	<p>Are not mentioned, are mentioned indirectly, or are only alluded to. If existent, discussion of [keywords] or a comparable concept by another name is cursory or incidental. The subject matter is, on the whole, not related and not relatable to [keywords].</p>
2.	Relevance to conceptual components identified in pre-reading	<p>Very highly relevant. The conceptual components identified constitute primary foci of the discussion.</p>	<p>Associable components/concepts of [keywords] are identifiable, though not central to the discussion. With investment on the part of the researcher, there is conceptual content of relevance that can be extracted.</p>	<p>No associable components of [keywords] are unidentifiable, or are identifiable only through inference. If relevant concepts are discussed, they are insufficient or tangential and therefore inadequately informative.</p>
3.	<p>Theoretical robustness (research papers)] or</p> <p>Conceptual relevance (conceptual papers)</p>	<p><u>Research Papers</u>  Research design is robust. Theory is built upon strong, relevant conceptual foundations. Theory and data are both sound and mutually amplifying.</p> <p><u>Conceptual Papers</u>  Concepts discussed are of high relevance to [keywords].</p>	<p>Theory/concepts possess potential application and/or argumentative weight. Revision, adjustment, extension, and augmentation of the theory/concepts presented would be required for direct validity.</p>	<p>Theory/concepts lack argumentative weight. Theory/concepts are based on weak premises, or drawn from inaccurate data or a flawed research design. Overall, theory/concepts have low validity.</p>
4.	Generalizability of results/ conceptual significance	<p>Imbricates with established knowledge and develops the subject considerably. Provides lucidity, and/ or potential for conceptual advances.</p>	<p>Generalizability and conceptual import is present, but gaps exist. Research design and/or interpretive processes could be improved.</p>	<p>Very limited. Sample was confined, or concepts are inadequately relatable to the body of directly relevant literature.</p>
5.	Contribution to study of [keywords]	<p>Application of the theory proposed could yield significant benefits. Theoretical contribution is similarly substantial.</p>	<p>Sources or recycles the ideas of other researchers. Enriches the study of [keywords], albeit moderately so.</p>	<p>Poor or non-existent.</p>

Class A articles were automatically included; class B articles were reviewed in more depth (beyond the abstract) and accepted if sufficiently relevant (reclassified as B1) or rejected if insufficiently relevant (reclassified as B2); class C articles were automatically rejected. Due to the highly specific nature of the search conditions (keywords in title, abstract, or article's keywords), most articles returned were highly relevant and were thus class A articles. The following table reports the total numbers of articles per search according to classification, and the numbers of articles accepted and rejected per search and in total. Due to replication of content , appropriateness to the research questions, and word count limitations, around 50% of the total number of articles were eventually referenced in the final literature review.

*Table 5 Articles Retrieved: Totals per Classification, Total Accepted*

Search	Total No. of Articles Remaining after Inclusion/ Exclusion	No. of Articles Classified "A"	No. of Articles Classified "B"			No. of Articles classified "C" (Rejected)	Total No. of Articles Accepted (A+B1)
			Total	B1 (Accepted)	B2 (Rejected)		
<b>LS1</b>	258	249	6	5	1	3	254
<b>LS2</b>	274	252	7	3	4	15	255
<b>LS3</b>	134	129	2	1	1	3	130
<b>Combined</b>	<b>666</b>	<b>630</b>	<b>15</b>	<b>9</b>	<b>6</b>	<b>21</b>	<b>639</b>

### 4.3 Literature Search 1

The following table reports the sources interrogated (academic databases) and the search conditions applied to retrieve the articles on which the first phase of the literature review was based.

Table 6 Literature Search 1: Conditions – All Databases

	Database				
Search Conditions	Science Direct (LS 1.1)	Jstor (LS 1.2)	Ingenta Connect (LS 1.3)	Emerald Insight (LS 1.4)	Web of Science (LS 1.5)
Boolean Search Terms	“chin* “ AND/OR “suppl* “				
Source	Academic journals only (full articles)				
Discipline(s) (OR when multiple)	Business, Management & Accounting	Business; Business & Economics; Finance; Management & Organizational Behaviour; Marketing & Advertising; Asian Studies			Business & Economics; Operations Research/ Management Science; Asian Studies
Filter(s) (OR when multiple)	TI-AB-KWs	TI-AB	TI-AB-KWs	TI-AB-KWs	Topic
Period (date range)	All years to present				
Filter by discipline	✓	✓	unavailable	✓	✓

For *all* searches, wildcards (\*) were used to maximise catchment while staying within the parameters of relevance: “chin\*” invokes “China” and/or “Chinese”; “suppl\*” invokes “supplier(s)” and/or “supply”. Search filtering options vary according to database, with some databases allowing more precise conditions than others (“Ti”: “title”; “AB”: “abstract”; “KWs”: “keywords”).

The following table reports the numbers of articles per database that were returned, by the searches described above. The inclusion/exclusion criteria were then applied. Duplicate articles were also eliminated at this stage.

Table 7 Literature Search 1: Articles Returned, Eliminated, and Retained

Search No.	Database	Date of Search	No. of Articles Returned	No. of Articles Eliminated	No. of Articles Retained
LS 1.1	Science Direct	30/04/2014	135	9	126
LS 1.2	Jstor	02/04/2014	29	18	11
LS 1.3	Ingenta Connect	04/05/2014	244	168	76
LS 1.4	Emerald Insight	05/05/2014	1723	1702	21
LS 1.5	Web of Science	09/05/2014	131	107	24
<b>Totals</b>			<b>2262</b>	<b>2004</b>	<b>258</b>

The articles retained following filtration by the inclusion/exclusion criteria were then reviewed for suitability and summarised in the following table. Once summarised, each article was graded for quality and relevance to the current study. All unmarked and uncoloured entries are classified as A for quality.

Literature Search 1 returned a total of 258 articles. Of this total, 249 articles were classed as “A”, six as “B”, and three as “C” (rejected). At second-stage review, one “B1” article was downgraded to “B2” and rejected. Therefore, four articles were eliminated from the original 258, leaving 254 accepted for inclusion. (See Table 5 for details.)

The following table reports the literature statistics with these adjustments reflected (pre-quality filter figures are inside parentheses).

*Table 8 Literature Search 1: Article Counts by Year 1984-2014*

Year	Search No.					Total
	LS 1.1	LS 1.2	LS 1.3	LS 1.4	LS 1.5	
1984		1				1
1991		1				1
1994	1					1
1995	1		1			2
1997	1		2	1		4
1998		1	3	3	2	9
1999	2		3			5
2000	2		1	2		5
2001	2					2
2002			2			2
2003	5	2	2	1	1	11
2004	8		2	1		11
2005	10	1	3	1	1	16
2006	20 (22)		10 (11)	1	2	33 (36)
2007	12		4	2		18
2008	10	2	2	2	2	18
2009	12	1	11	1	3	28
2010	15	1	5		3	24
2011	10		9	2	4	25
2012	6	1	12	2	2	23
2013	2		3	2	3	10
2014	5				1	6
<b>Total</b>	<b>124 (126)</b>	<b>11</b>	<b>75 (76)</b>	<b>21</b>	<b>24</b>	<b>254 (258)</b>

In the preceding table, figures in parentheses indicate the article count prior to elimination of articles later classified as B2 or C during the final review and then rejected.

## 4.4 Literature Search 2

The following table reports the sources interrogated (academic databases) and the search conditions applied to retrieve the articles on which the second phase of the literature review was based.

*Table 9 Literature Search 2: Conditions – All Databases*

	Database				
Search Conditions	Science Direct (LS 2.1)	Jstor (LS 2.2)	Ingenta Connect (LS 2.3)	Emerald Insight (LS 2.4)	Web of Science (LS 2.5)
Boolean Search Terms	“guanxi”				
Source	Academic journals only (full articles)				
Discipline(s) (OR when multiple)	Business, Management & Accounting	Business; Business & Economics; Finance; Management & Organizational Behaviour; Marketing & Advertising; Asian Studies			Business & Economics; Operations Research/ Management Science; Asian Studies
Filter(s) (OR when multiple)	TI-AB-KWs	TI-AB	TI-AB-KWs	TI-AB-KWs	Topic
Period (date range)	All years to present				
Filter by discipline	✓	✓	unavailable	✓	✓

Search filtering options vary according to database, with some databases allowing more precise conditions than others (“Ti”: “title”; “AB”: “abstract”; “KWs”: “keywords”). The following table reports the numbers of articles per database that were returned, by the searches described above. The inclusion/exclusion criteria were then applied. Duplicate articles were also eliminated at this stage.



*Table 10 Literature Search 2: Articles Returned, Eliminated, and Retained*

<b>Search No.</b>	<b>Database</b>	<b>Date of Search</b>	<b>No. of Articles Returned</b>	<b>No. of Articles Eliminated</b>	<b>No. of Articles Retained</b>
LS 2.1	Science Direct	09/06/2014	82	19	63
LS 2.2	Jstor	09/06/2014	53	20	33
LS 2.3	Ingenta Connect	09/06/2014	165	59	106
LS 2.4	Emerald Insight	09/06/2014	114	95	19
LS 2.5	Web of Science	11/06/2014	367	314	53
<b>Totals</b>			<b>781</b>	<b>507</b>	<b>274</b>

The articles retained following filtration by inclusion/exclusion criteria were then reviewed for suitability and summarised in the following table. Once summarised, each article was graded for quality and relevance to the current study. All unmarked and uncoloured entries are classified as A for quality.

Literature Search 2 returned a total of 274 articles. Of this total, 252 articles were classed as “A”, seven as “B”, and 15 as “C” (rejected). At second-stage review, four “B1” articles were downgraded to “B2” (rejected). Therefore, 19 articles were eliminated from the original 274, leaving 255 for inclusion. (See Table 5 for details.)

The following table reports the literature statistics with these adjustments reflected (pre-quality filter figures are inside parentheses).

*Table 11 Literature Search 2: Article Counts by Year 1984-2014*

Year	Search No.					Total
	LS 2.1	LS 2.2	LS 2.3	LS 2.4	LS 2.5	
1989	1					1
1992				1		1
1994		2				2
1995	1	1				2
1996		5			1	6
1997	1		1			2
1998		1 (2)	3	1 (2)		7 (9)
1999	1	2	2		1	6
2000	3	3	7			12 (13)
2001	1	2	5		2	10
2002	1	2	7	1	2	12 (13)
2003	2	3	8	2	2	13 (17)
2004	1	4	2	1	2	8 (10)
2005	1	1	7	2		10 (11)
2006	3		13	1	1	17 (18)
2007	1	2	4	3	3	13
2008	7	1	6	4	4	22
2009	2	4	10		2	17 (18)
2010	1		8	2	5	16
2011	10	1	13		9	32 (33)
2012	4	1	9	1	8	22 (23)
2013	10	1	10	1	9	29 (31)
2014	11		2		1	14
<b>Total</b>	<b>63</b>	<b>33</b>	<b>106</b>	<b>19</b>	<b>53</b>	<b>255 (274)</b>

In the preceding table, figures in parentheses indicate the article count prior to elimination of articles later classified as B2 or C during the final review and then rejected.

## 4.5 Literature Search 3

The following table reports the sources interrogated (academic databases) and the search conditions applied to retrieve the articles on which the third phase of the literature review was based.

*Table 12 Literature Search 3: Conditions – All Databases*

	Database				
Search Conditions	Science Direct (LS 3.1)	Jstor (LS 3.2)	Ingenta Connect (LS 3.3)	Emerald Insight (LS 3.4)	Web of Science (LS 3.5)
Boolean Search Terms	“suppl” AND “risk”				
Source	Academic journals only (full articles)				
Discipline(s) (OR when multiple)	Business, Management & Accounting	Business; Business & Economics; Finance; Management & Organizational Behaviour; Marketing & Advertising; Asian Studies			Business & Economics; Operations Research/ Management Science; Asian Studies
Filter(s) (OR when multiple)	TI-AB-KWs	TI-AB	TI-AB-KWs	TI-AB-KWs	Topic
Period (date range)	All years to present				
Filter by discipline	√	√	unavailable	√	√

Search filtering options vary according to database, with some databases allowing more precise conditions than others (“Ti”: “title”; “AB”: “abstract”; “KWs”: “keywords”). The following table reports the numbers of articles per database that were returned, by the searches described above. The inclusion/exclusion criteria were then applied. Duplicate articles were also eliminated at this stage.

*Table 13 Literature Search 3: Articles Returned, Eliminated, and Retained*

Search No.	Database	Date of Search	No. of Articles Returned	No. of Articles Eliminated	No. of Articles Retained
LS 3.1	Science Direct	23/06/2014	29	0	29
LS 3.2	Jstor	23/06/2014	10	1	9
LS 3.3	Ingenta Connect	23/06/2014	17	1	16
LS 3.4	Emerald Insight	23/06/2014	34	0	34
LS 3.5	Web of Science	23/06/2014	44	2	42
<b>Totals</b>			<b>134</b>	<b>4</b>	<b>130</b>

The articles retained following filtration by inclusion/exclusion criteria were then reviewed for suitability and summarised in the following table. Once summarised, each article was graded for quality and relevance to the current study. All unmarked and uncoloured entries are classified as A for quality.

Literature Search 3 returned a total of 134 articles. Of this total, 129 articles were classed as “A”, two as “B”, and three as “C” (rejected). At second-stage review, one “B1” article was downgraded to “B2” (rejected). Therefore, four articles were eliminated from the original 134, leaving 130 for inclusion. (See Table 5 for details.)

The following table reports the literature statistics with these adjustments reflected (pre-quality filter figures are inside parentheses).

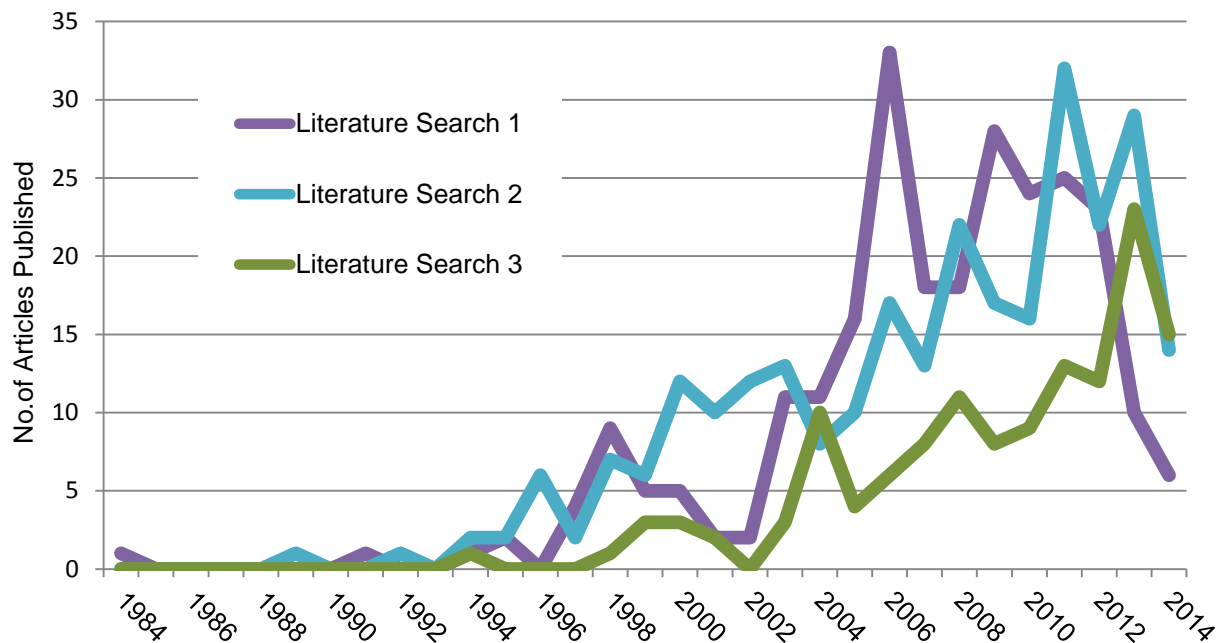
*Table 14 Literature Search 3: Article Counts by Year 1984-2014*

Year	Search No.					Total
	LS 3.1	LS 3.2	LS 3.3	LS 3.4	LS 3.5	
1994		1				1
1998			1			1
1999		2		1		3
2000				1	2	3
2001	1		1			2
2003	2		1			3
2004	1	1		6	2	10
2005	1		1		2	4
2006	1	1		2	2	6
2007	2	2 (3)	2	1	1	8 (9)
2008	2	1	2 (3)	4	2	11 (12)
2009	2		1	3	2	8
2010	2		2	1	4	9
2011	3		2	4	4	13
2012	2			2	8	12
2013	4	1	1	8	9	23
2014	6		2		7 (2)	15 (17)
<b>Total</b>	<b>29</b>	<b>10 (13)</b>	<b>17</b>	<b>34</b>	<b>44 (42)</b>	<b>130 (134)</b>

Figures in parentheses indicate the article count prior to elimination of articles later classified as B2 or C during the final review.

The following figure graphically depicts the evolution of the literature between 1984 and 2014 (rejected articles are not included in counts).

Figure 1 Systematic Literature Searches 1 to 3: Counts of Included Articles



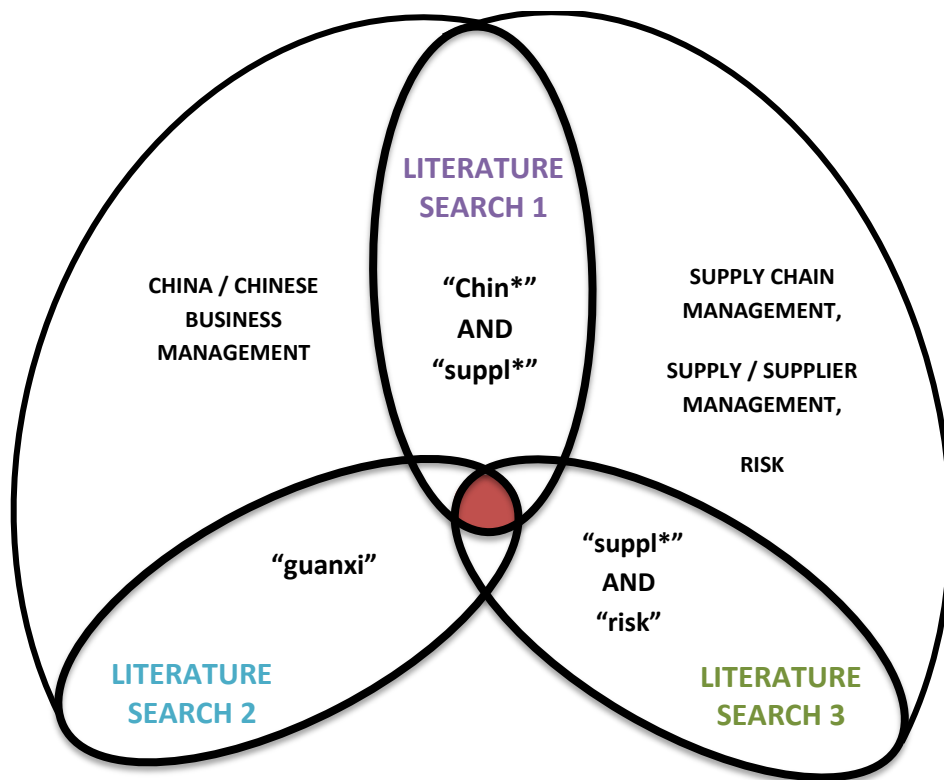
Literature Search 1: "Chin\*" AND "suppl\*"

Literature Search 2: "guanxi"

Literature Search 3: "suppl\* AND risk"

The table beneath *Figure 2* (following) indicates thematic overlaps in the literature returned by the systematic searches (darker shaded topics indicate stronger thematic relatedness). A small number of articles were returned by all three searches. Such articles constitute the most obvious content of the red point of common intersection in the Venn diagram. However, convergence was broad, and categorising relationships as distinct from networking and/or collaboration, for example, was extremely challenging (and, possibly, unnecessary). For this reason, many more articles than the few that occupy the central hotspot could be considered topically related, depending on definitional flexibility, and/or the necessity for stringent taxonomy.

Figure 2 Thematic Intersection and Coverage of the Literature



Literature Search 1	Literature Search 2	Literature Search 3
Guanxi	Relationships	Collaboration and Integration
Networking		
The Role of Intermediaries		
Informal Control is Insufficient		
Collaboration and Integration		Quality
Quality		
Strategic Supply Management (SCM)		
Liabilities of Foreignness		
UK Companies in China		Risk Management Strategies
State Involvement		
Strategic Supply Chain Management (SCM)	Guanxi in Decline	Contracts
	Government	
Global Sourcing and Outsourcing	Advantages and Disadvantages	Risk Calculation Models
	Ethnicity and Cross-Cultural Implications	
Logistics	Gift-Giving	Risk Frameworks
Ownership	International Comparators and Implications	
	Negotiations	Specific Versus General Supply Chain Design
	Guanxi and Marketing	
	Ethics	



## 5. Case Study Literature

In the following lists of case study literature references, for anonymity, the company names have been changed. The two items marked [\*] indicate documents that provided contextual information that was indirectly contributory to the case study writing process.

### 5.1 Case Study 1: French Electrical Manufacturer (“FEM”, Global MNE)

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## **6. Semi-Structured Interview Template**

The template for the semi-structured interview was derived mainly from pre-reading, the formal review of the literature, and the NVivo coding of the abstracts of the articles retrieved by the systematic search.

In many cases, strict adherence to the script was not required. Each interview was preceded by an e-mail exchange, skype or telephone call, or a face-to-face conversation. At the pre-interview encounter, the purpose of the interview was explained. The prospective interviewee then declined or accepted. Hence, in the interview itself, little was required in the way of context or introduction. Also, in the course of the interview, many interviewees address the questions without prompting. However, the industry key informant interviews were conducted to purposefully explore issues revealed during preceding interviews in more depth. Hence, the format changed from interview to interview, depending on the specific information required.

Findings from the case studies highlighted various areas of theoretical and practical interest that were appropriate for more detailed investigation via key informant interviews. In this way, the key informant interview supplemented and contrasted with the findings of the case studies.

As the interviews progressed, the interviewer had less need for the script: in most cases, a general idea of the topics to be explored was sufficient. Many interviewees resisted conversational steering, so the question set allowed the interviewer to make sure the relevant issues were discussed, albeit often in a non-linear and indirect fashion.

**Tell us *briefly* about your company.**

[nature of product, market, ownership, time in business]

-----

Do you use Chinese suppliers?

(YES – already known)

How long have you been using suppliers in China?

(SINCE \_\_\_\_\_)

**How did you select your Chinese suppliers?**

(DUE DILIGENCE? BIDS?)

-----

**Why did you decide to use Chinese suppliers?**

-----

What are your long-term objectives in China?

-----

**How does use of Chinese suppliers factor into your international strategy?**

-----

How much visibility do you have into the operations of your Chinese suppliers?

---

Do you require your suppliers to use ISO or other industry standards?

---

Would you say ISO or other industry standards are effective?

---

What do you know about the companies who supply your Chinese suppliers?

---

Do you require them to meet ISO standards also?

---

Are there any other quality controls that you use?

---

Are they effective? If so, why/how?

---

Have you had any kind of quality problems with products from your Chinese suppliers?

(frequency, severity)

-----

**How have you dealt with Chinese supplier problems?**

-----

**What would you say are the advantages of using Chinese suppliers?**

-----

**What would you say are the disadvantages of using Chinese suppliers?**

-----

Have you had any intellectual property issues with your Chinese suppliers?

----- *tell us a story or two* -----

-----

If so, what kind of intellectual property issues?

(frequency, severity)

-----

What would you say are the strengths/key qualities of **your** Chinese suppliers?

(PEOPLE, TECHNOLOGY, ABILITY TO LEARN, PRODUCTION CAPACITY, LOW MATERIALS COSTS, LOW LABOUR COSTS, CONVENIENCE, ACCESS TO CHINESE MARKETS, OPPORTUNITY TO SNIFF OUT CONTRACTS, GET CLOSER TO CHINESE GOVERNMENTS FOR PUBLIC SECTOR WORK, ETC.)

---

**Does your company maintain physical presence at your Chinese suppliers? That is, do you have a foreign national present at your Chinese suppliers factors?**

---

If so, what is the advantage of having this person physically present in the Chinese factory?

---

What kind of China expertise or representative does your company use?

---

Can you tell me how much time that person spends in China?

---

What functions does this person perform?

---

What qualifies that person to perform this role?

---

Could your suppliers run their operation without this person being physically present?

---

What are the effects of this person's engagement with your suppliers (and/or customers) in China?

---

Would there be quality issues if he or she were absent? Has he/she/they resolved such issues in the past? How?

---

What kind of training or technological upgrading deal suppliers receive from your company?

---

Do you regard your relationships with your Chinese suppliers as long term?

---

**How would you describe the relationship between you/your managers and the managers of the Chinese suppliers?**

---

Besides operational issues, what kind of challenges do you face when dealing with Chinese suppliers?  
(Do you have to establish connections with the Chinese government, for example? Are there bribes to pay? Is bureaucracy a problem?)

-----

Do you have a purchasing or operations management office in China?

-----

[IF YES] How much independence that they have in decisions relating to China manufacturing and sourcing? (Are they free to nominate and audit Chinese suppliers?)

-----

What kind of auditing processes do you r run on your Chinese suppliers?

-----

Are these the same audit processes that are used on all suppliers regardless of which country they are in?

-----

From your perspective, are there any supply related or supplier related issues that are unique to China?

-----

**If I said to you the words “risk” and “China” in connection with your Chinese supply activities, what would you say?**



---

(In other words, what are your China supply risks?)

---

Has language ever been an issue? If so, how/why?

---

**Have you had problems that you would describe as cultural in nature? Can you describe them?**

---

Have these impacted on your relationship with Chinese managers and/or the performance of your Chinese suppliers?

---

What do you understand by the term “guanxi”?

---

Have you yourself had any difficulties managing Chinese supply?

---

How have you overcome them?

---

Is it important to have trust between yourself and managers at your Chinese suppliers?

---

How did this trust develop? Was it easy/difficult? How long did it take?

---

**How would you describe the relationship between you and your Chinese suppliers?**

---

\* How would you think your Chinese managers perceive you and your company's management?

(Positively, negatively, opportunistically, neutrally?)

---

Have you made any major investments in its Chinese suppliers? (Machinery, IT, training?)

---

Any other information/further comments



## 7. Coding Tables

### 7.1 Thematic Analysis by Coding

The schematic shown in the *Methodology* chapter of the main work reports the coding applied in the analysis of the aggregated primary data, the number of sources in which each code was reported, the frequency (total number of instances) of usage of each code, and the thematic dominance that emerged when coding.

Coding for themes was done using NVivo and according to the methods described by Richards (1999), Saldaña (2009), O'Neil (2013), and Silver and Lewins (2014) and the concepts espoused by Taylor and Bogdan (1998) and Flick (2015).

Coding revealed themes that could be divided into three main groups: 1. Relationships; 2. Macroeconomics; 3. Strategy. In the schematic, the first figure inside parentheses indicates the number of sources in which a code was reported. The second figure indicates the frequency of the code across all sources, i.e. the total number of instances to which the code was applied.

In many cases, the frequency reported for the parent node is greater than the sum of the child nodes. This is because some areas of transcripts were coded with the parent node alone – when the parent node was more descriptive than the child nodes or the text too general to merit the specificity of an available child node.

*Table 15 Parent Themes: Ranking by Frequency*

Themes (NVivo: “Nodes”)		Sources	Frequency of Codes	Ranking
Parent	Strategy	all	1477	1
	Relationships	all	674	2
	Macroeconomics	all	221	3

In the schematic, each theme (“node”) is ranked according to its frequency. Themes that appear higher in the tables occurred more frequently than themes that appear lower. Thus, the coding ranked “1” is the most frequently occurring within its grouping. The five most frequently applied codes in each grouping are enclosed in the **bold border** at the top of each of the 13 frequency tables that follow the schematic.

In cases where multiple codes were reported with the same frequency, the first number in parentheses (the number of sources) determined the ranking. The code reported by more sources is ranked higher.

In cases where multiple codes were reported in the same number of sources and with the same frequency, a qualitative approach was applied to determine ranking: the transcript was reassessed for broader thematic messages, and the code that corresponded most closely with the dominant or most emphatically expressed messages elsewhere in the same source was assigned the higher rank. When there was insufficient thematic correlation or support, similarity to or deviation from other codes was considered. Codes that corresponded to similar themes or discussions outside the source were ranked higher. Only six codes had to be ranked this way. The purpose of the code ranking was to highlight *prominence*, and thereby focus the subsequent theoretical discussion on the themes that dominated the information obtained from all 17 sources.

The 17 are sources broadly divisible into two categories: case studies and key informant sources. Both categories are sub-divisible. The following table provides the category, classification, descriptive details, and identification code (ID) of each source. Source IDs are used in the subsequent tables to identify the sources in which each theme was reported.

Table 16 Sources: Category, Classification, Description, and Identifying Code

Classification	Category	Description	ID	
Global Multinational Enterprises	Case Studies	French Electrical Manufacturer “FEM”	CS1	
		Canadian Transportation “CT”	CS2	
	Key Informants		Swedish Furniture Manufacturer “SFM”	IK1
			American Food Conglomerate “AFC”	IK2
UK SMEs			Direct2Customer “D2C”	IK3
			OEM Products/Engineering “OEM”	IK4
			R-UK	IK5
			P-S	IK6
Academic			Stuart Emmett	AK1
			Martin Christopher at Cranfield	AK2
Consultants			Anderson Consulting	CK1
			Cargo East Asia	CK2
			Cargo East Asia, China-Britain Business Council Hong Kong Chamber of Commerce	CK3
Firm Comparators			SCMG (China MNE)	FK1
			360C (UK SME)	FK2
			UKCeram (UK SME)	FK3
Practitioners			LinkedIn Discussion (various supply chain professionals)	LKs

## 7.2 Frequency Tables

The following 13 tables report the frequencies of the coding applied to the aggregated data of all 17 sources.

Table 17 “Relationships” Parent Theme: Sources and Frequencies

1

Themes (NVivo: “Nodes”)		Source Count	Sources	Frequency	Ranking
Parent	Relationships				
Child	Cooperative working	8	IK2; CS2; IK3, IK4, IK6; AK1, AK2; CK2	57	1
	Key China person	10	IK3, IK5, IK6; CK1, CK2, CK3; FK1, FK2, FK3; LKs	54	2
	Trust (positive)	11	IK1, IK2, IK3, IK4, IK5, IK6; AK1, AK2; CK1; FK1, FK2	46	3
	Communication	8	IK1, IK2; CS1, CS2; IK3, IK4, IK5, IK6; AK1, AK2; CK1, CK2, CK3; FK1, FK2, FK3; LKs	41	4
	China presence	10	IK3, IK5, IK6; AK2; CK1, CK2, CK3; FK2,FK3; LKs	40	5
	Relationship building	8	IK3, IK4,IK5, IK6; AK1; CK1; FK2, FK3	38	6
	Valuable expertise	6	IK3, IK4; CK1, CK3; FK2; LKs	36	7
	Business networks	9	IK3, IK6; AK2; CK1, CK3; FK1, FK2, FK3; LKs	33	8
	Contracts	11	IK1, IK2, CS1; IK4, IK6; AK2; CK1, CK2; FK1, FK2; LKs	29	9
	Informal practices	6	IK2, CS2; IK3, IK4, IK6; FK3	25	10
	Long-term relationships	9	IK2, CS1, CS2; IK3, IK4, IK5, IK6; FK1, FK2	24	11
	Intermediaries	7	CS1; IK3, IK4, IK5, IK6; CK1, CK2	21	12
	Hands-off management	5	CS2; IK3, IK5, IK6; FK2	19	13
	Dispute resolution	7	CS1, CS2; IK3, IK4; CK1; FK2; LKs	18	14
	Buyer power	6	IK1, IK2; CS1; AK1,2; FK3	17	15
	Negotiation	5	IK2; IK6; AK1; CK1; FK2	17	16
	Personal factors	6	IK2; IK3, IK4, IK5; FK2, FK3	15	17
	Consultants	7	IK2, CS1, CS2; IK6; CK1, CK3; LKs	13	18
	China visits	6	IK3, IK4; CK1, CK2; FK1, FK2	12	19
	Chinese staff	3	IK5,IK6; CK1	11	20
	Relationships as risk management	2	AK1, AK2	7	21
	Formal power	1	IK2	7	22
	Soft skills	1	AK1	5	23
	Matchmaking	1	CK1	4	24
	Ethnic divisions	2	CS1; IK4	3	25
	Arms-length relationship	1	AK1	3	26
	Word-of-Mouth	2	CS1; CK3	2	27
	Relationship-driven supply chains	1	AK1	2	28
	Short-term relationships	1	CK1	2	29
	Mutual advantage	1	AK1	1	30
	Face-to-face interaction	1	AK1	1	31

Table 18 “Macroeconomics” Parent Theme: Sources and Frequencies

2 Macroeconomics (17; 221)					
Themes (NVivo: “Nodes”)		Source Count	Sources	Frequency	Ranking
Parent	Macroeconomics				
Child	Corruption	8	IK1, IK2; IK4; AK1, AK2; CK1, CK2; LKs	34	1
	China low cost attractive	9	IK2; CS2; IK3, IK4, IK5, IK6; FK1, FK2, FK3	25	2
	Government connections	4	IK1, CS1; IK6; FK1	25	3
	China market growth	5	IK2; CS1, CS2; IK4; FK3	20	4
	China costs rising	8	CS1; IK3, IK5; CK1, CK2, CK3; FK3; LKs	19	5
	BRICs	7	CS1, CS2; IK5; CK3; FK1, FK2, FK3	19	6
	China not unique	6	IK2; IK6; CK1, CK2, CK3; LKs	18	7
	China growth	6	IK1; CS1, CS2; IK4; CK1, CK3	16	8
	China not yet international	2	CK1; FK1	7	9
	China infrastructure	3	IK1; CS2; FK1	5	10
	China not Asian priority	2	CS1; FK3	5	11
	Emerging country threat	2	CS1; FK3	5	12
	Government double standards	1	CK1	4	13
	China stability	2	CS1; IK3	3	14
	China attraction decline	1	IK1	1	15
	Rapid China changes	1	IK1	1	16

Table 19 “Strategy” Parent Theme: Sources and Frequencies

3 Strategy (17; 1477)					
Themes (NVivo: “Nodes”)		Source count	Sources	Frequency	Ranking
Parent	Strategy				
Sub	China	17	<i>all</i>	678	1
	Risk	17	<i>all</i>	385	2
	Supplier management	17	<i>all</i>	309	3
	MNEs	14	<i>all</i>	105	4



Table 20 “China” Child Theme: Sources and Frequencies

3.1 Strategy > China (17; 678)					
Themes (Nvivo: “nodes”)		Source Count	Sources	Frequency	Ranking
Parent	Strategy				
Child	China				
Sub	Cultural issues	17	<i>all</i>	233	1
	Manufacturing	15	CS1, CS2; IK3, IK4, IK5, IK6; AK1, AK2; CK1, CK2, CK3; FK1, FK2, FK3; LKs	148	2
	Government involvement	10	IK1; CS1, CS2; IK5, IK6; CK1, CK3; FK1, FK2; LKs	42	3
	Long-term China strategy	8	IK1, IK2; CS1, CS2; IK5, IK6; CK1; FK3	33	4
	China standards improving	11	IK1, IK2; CS1, CS2; IK3, IK4, IK5; CK1, CK2; FK2; LKs	32	5
	China office autonomy	4	IK1, IK2; CS1, CS2	26	6
	Chinese managers	10	IK1, CS1, CS2; IK3, IK4, IK6; AK2; CK1,3; FK3	22	7
	China office	5	IK2; CS1, CS2; CK1, CK2	18	8
	Human resource lag	7	CS1, CS2; IK4; CK1, CK3; FK3; LKs	14	9
	China-savvy strategizing	7	IK2; CS1, CS2; IK4; CK3; FK2, FK3	12	10
	Expat managers	4	CS1, CS2; IK5; FK3	11	11
	China as buyer	3	IK5; CK2, CK3	11	12
	Chinese ambitions	4	CS1, CS2; FK1, FK3	10	13
	Foreign company prestige	3	CS1, CS2; CK1	10	14
	China made for China market	4	IK1; IK6; FK1; LKs	9	15
	China staff training	3	CS1, CS2; IK5	8	16
	Early China entry	5	CS1; IK4, IK5; CK1, CK2	6	17
	Human capital wealth	4	CS1; IK4; AK1; CK1	6	18
	Joint venture problems	2	CK1; FK1	6	19
	Work conditions	4	IK1; CS1; IK3; CK1	5	20
	Foreign expectations unrealistic	1	CK1	5	21
	Foreign impatience	1	CK1	4	22
	Joint ventures	2	CK1; FK1	3	23
	Export model	1	FK1	3	24

Table 21 “Cultural Issues” Sub Theme: Sources and Frequencies

3.1.1 Strategy > China > Cultural Issues (17; 223)					
Themes (NVivo: “Nodes”)		Source count	Sources	Frequency	Ranking
Parent	Strategy				
Child	China				
Sub	Cultural Issues				
	Trust problems	12	IK1; CS1, CS2; IK4, IK5; AK1, AK2; CK1, CK2; FK2, FK3; LKs	51	1
	Language issues	12	IK2; CS1; IK3, IK5, IK6; AK1; CK1, CK3; FK1, FK2, FK3; LKs	44	2
	Face	6	CS1, CS2; IK4; CK1, CK3; LKs	13	3
	Good work ethic	6	CS1, CS2; IK3, IK5, IK6; FK3	11	4
	Interpersonal factors	2	AK1, AK2	7	5
	Cultural ignorance	1	CK1	7	6
	Pride	2	CS1, CS2	5	7
	Cultural learning	1	CK1	2	8

Table 22 “Manufacturing” Sub Theme: Sources and Frequencies

3.1.2 Strategy > China > Manufacturing (15; 148)					
Themes (NVivo: “Nodes”)		Source count	Sources	Frequency	Ranking
Parent	Strategy				
Child	China				
Sub	Manufacturing				
	Intellectual property issues	12	CS1, CS2; IK4, IK5, IK6; AK2; CK1, CK2; FK1, FK2, FK3; LKs	33	1
	Technology lag	6	CS2; AK2; CK1, CK3; FK3; LKs	21	2
	High tech	9	CS1, CS4; IK4, IK5, IK6; AK2; FK1, FK2, FK3	15	3
	Reshoring	4	IK5; AK2; FK3; LKs	12	4
	“Made in China” reputation	5	IK4, IK6; FK2, FK3; LKs	8	5
	Manufacturing power	2	IK3; FK1	7	6
	Highly varied products	4	CS1; IK4; FK1, FK2	6	7
	Lead time reduction	2	AK1, AK2	5	8
	Cost-cutting and fair price	1	CK1	5	9
	Product imitating	3	AK2; CK1; FK1	4	10
	Flexibility reduces risk	1	AK2	4	11
	Inventory	1	AK2	3	12
	Efficiency lag	2	CS1, CS2	2	13
	Agile	1	AK2	2	14
	One-stop 3rd party solutions	1	CK1	2	15
	Lean and agile	1	AK2	2	16
	OEM partnerships	1	CS1	1	17
	Focussed factories	1	AK2	1	18
	Just-in-time (JIT)	1	AK2	1	19
	Quality and low price	1	FK1	1	20

Table 23 “Risk” Child Theme: Sources and Frequencies

3.2 Strategy > Risk (17; 358)					
Themes (NVivo: “Nodes”)		Source count	Sources	Frequency	Ranking
Parent	Strategy				
Child	Risk				
Sub					
	Quality	17	<i>all</i>	222	1
	Supply chain	11	IK2; CS2; IK3, IK4, IK5; AK1; CK3; FK1, FK2, FK3; LKs	56	2
	China-specific risks	3	CS1; AK2; FK3	10	3
	China Easy for Business	4	IK6; CK1,2; LKs	9	4
	Risk planning	1	AK2	7	5
	Disintermediation	3	IK6; CK2; FK2	5	6
	Extended supply chain risk	1	AK2	5	7
	Risk spreading	2	AK2; CK1	4	8
	Resilience	1	AK2	3	9
	Other China risks	2	IK2	2	10
	Risk limitation by design	1	AK2	2	11
	Buying on price	1	AK2	2	12
	Customs problems	1	CK1	2	13
	Environmental issues	1	IK1	1	14
	Expat flight	1	IK1	1	15
	Risk management team	1	FK1	1	16

Table 24 “Quality” Sub Theme: Sources and Frequencies

3.2.1 Strategy > Risk > Quality (17; 222)					
Themes (NVivo: “Nodes”)		Source count	Sources	Frequency	Ranking
Parent	Strategy				
Child	Risk				
Sub	Quality				
	Quality failure	10	IK1, IK2; CS2; IK4, IK5; AK2; CK1; FK2, FK3; LKs	41	1
	Unsophisticated work	7	CS1, CS2; IK4, IK5; CK1,3; FK2	30	2
	QC visits	9	IK2; CS1, CS2; IK4, IK5, IK6; AK1; CK3; LKs	23	3
	Quality (positive)	10	IK2; CS1, CS2; IK3, IK4, IK5, IK6; CK2; FK2, FK3	22	4
	In-house quality standards	7	IK1, IK2; CS1, CS2; IK3, IK5; FK2	22	5
	Quality standards	11	IK1, IK2; CS1, CS2; IK3, IK4, IK5; AK1, AK2; FK2, FK3	21	6
	On-site QC people	8	CS1, CS2; IK3, IK4, IK5, IK6; CK2; FK2	21	7
	China quality ahead of ROTW	6	IK3, IK4; CK1, CK2; FK1, FK2	11	8
	QC by Specs	5	CS1, CS2; IK4, IK5, IK6	10	9
	Quality (general)	5	IK1; CS2; CK1; FK1, FK2	8	10
	Global QC practice	4	IK1, IK2, IK4, IK5	4	11
	Reworking outside China	4	IK2, IK4, IK5; FK2	4	12
	China quality is mixed	2	IK2; CK1	2	13
	QA companies	1	CK1	1	14

Table 25 “Strategy” Child Theme: Sources and Frequencies

3.3 Strategy > Supplier Management (17; 309)					
Themes (NVivo: “Nodes”)		Source count	Sources	Frequency	Ranking
Parent	Strategy				
Child	Supplier Management				
Sub					
	Suppliers	17	<i>all</i>	214	1
	Ownership	10	IK1; CS1, CS2; IK3, IK4, IK5; CK1; FK1, FK2; LKs	38	2
	Supplier control	5	IK1; CS2; IK3, IK4; AK1	14	3
	KPIs	2	IK2; AK1	7	4
	“Integrator”	2	CS1, CS2	7	5
	Adversarial supplier management	1	AK1	5	6
	Supplier push	2	IK4; FK2	4	7
	Iceberg costs	1	CK1	4	8
	Customer pull	2	IK4; AK2	3	9
	Supplier opportunism	1	AK2	3	10
	Overseas supplier visits	1	AK1	3	11
	Demand risk	1	AK2	2	12
	Decoupling	1	AK2	2	13
	Supply chain resilience	1	AK2	1	14

Table 26 “Suppliers” Sub Theme: Sources and Frequencies

3.3.1 Strategy > Supplier Management > Suppliers (17; 214)					
Themes (NVivo: “Nodes”)		Source count	Sources	Frequency	Ranking
Parent	Strategy				
Child	Supplier Management				
Sub	Suppliers				
	Supplier selection	10	IK1, IK2; CS1, CS2; IK6; AK1; CK1; FK1, FK3; LKs	44	1
	Transparency	12	IK1, IK2; CS1, CS2; IK3, IK5; AK1, AK2; CK2, CK3; FK2, FK3	40	2
	Unethical practice	10	CS1, CS2; IK5; AK1, AK2; CK1, CK2, CK3; FK3; LKs	32	3
	Strategic management	7	IK1, IK2; CS1, CS2; IK3, IK6; AK1	13	4
	Monopoly supplier	3	IK2, CS1; AK1	13	5
	Supplier power	5	IK3, IK2; AK1, AK2; FK2	12	6
	Strategic acquisition	3	CS1, CS2; FK1	10	7
	Supplier monitoring	4	IK1, IK3, IK4; AK1	9	8
	Supplier investment	6	CS1; IK4, IK5, IK6; AK1, AK2	8	9
	Collective bargaining	3	IK1; AK1, AK2	7	10
	Regional variance	4	IK2; CK1, CK3; LKs	6	11
	Tier 2 involvement	2	CS2; AK2	6	12
	Reverse marketing	3	CS1; AK2; CK3	5	13
	Specialist suppliers	3	IK1; IK3, IK5	4	14
	Selective suppliers	2	CS1; AK1	2	15
	Mutual visibility	1	IK2	1	16

Table 27 “Supplier Management” Sub Theme: Sources and Frequencies

3.3.2 Strategy > Supplier Management > Ownership (10; 38)					
Themes (NVivo: “Nodes”)		Source count	Sources	Frequency	Ranking
Parent	Strategy				
Child	Supplier Management				
Sub	Ownership				
	Wholly owned	5	IK1; CS1, CS2; IK3; CK1	20	1
	Joint venture	2	FK1; LKs	2	2
	Shared factory	2	IK4; CK1	2	3

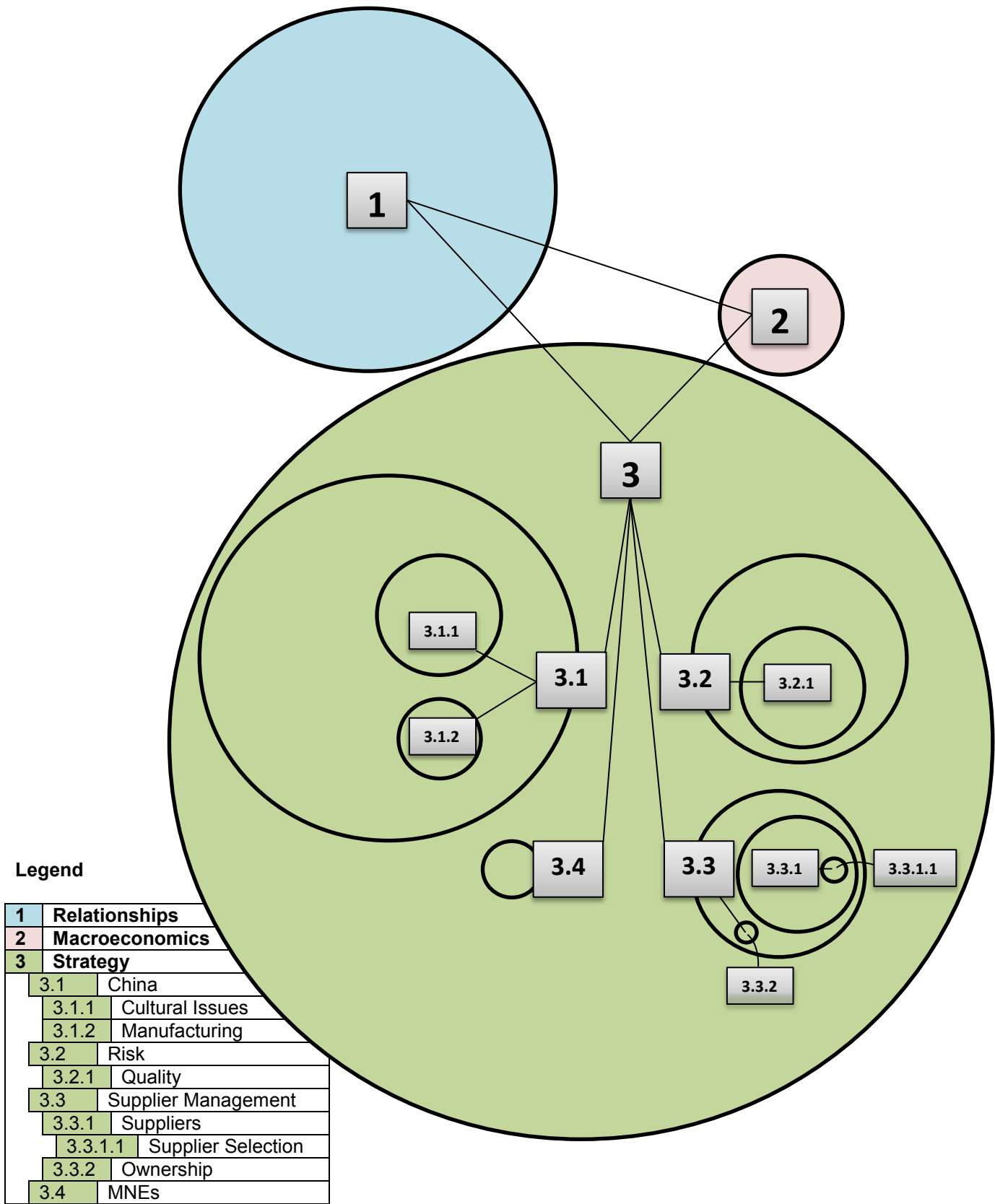
Table 28 “Supplier Selection” Sub-sub Theme: Sources and Frequencies

3.3.1.1 Strategy > Supplier Management > Suppliers > Supplier Selection (10; 44)					
Themes (NVivo: “Nodes”)		Source count	Sources	Frequency	Ranking
Parent	Strategy				
Child	Supplier Management				
Sub	Suppliers				
Sub-sub	Supplier Selection				
	Supplier background checking	1	CK1	4	1
	Supplier auditing	2	IK6	2	2
	“Due diligence”	1	IK1; AK1	2	3

Table 29 “MNEs” Child Theme: Sources and Frequencies

3.4		Strategy > MNEs (14; 105)				
Themes (NVivo: “Nodes”)						
Parent	Strategy	Source count	Sources	Frequency	Ranking	
Child	MNEs					
Sub	Global practices & standards	10	IK1, IK2; CS1, CS2; IK4, IK5, IK6; AK2; FK2, FK3	32	1	
	Corporate culture	2	IK1; AK1	21	2	
	HQ authority	3	IK2; CS1, CS2	8	3	
	Global markets	5	CS1, CS2; IK5; FK1, FK3	7	4	
	Local compliance	4	IK1, IK2; CS1; CK1	7	5	
	Local procurement	3	IK1, IK2; CS1	5	6	
	Design services	3	IK3, IK2; FK2	4	7	
	Ethical business policy	1	IK1	4	8	
	Highly global presence	2	CS1; IK4	3	9	
	Global procurement model	1	IK2	3	10	
	Importers	1	CK1	3	11	

Figure 3 Relative Thematic Dominance – All Sources: By Frequency of Code



NB. In this figure, relative thematic dominance is represented by circle size (millimetres diameter):

### 7.3 Most Frequent Codes by Sources

The following tables report the five most frequently occurring codes according to the various sources.

*Table 30 Most Frequent Codes: All Sources (n=17)*

Sources: CS1, CS2; IK1, IK2, IK3, IK4, IK5, IK6; AK1, AK2; CK1, CK2, CK3; FK1, FK2, FK3; LKs						
Theme	Relationships	Macroeconomics	Strategy			
Rank			China	Risk	Supplier management	MNEs
1	Cooperative working	Corruption	Cultural issues	Quality	Suppliers	Global practices & standards
2	Key China person	China low cost attractive	Manufacturing	Supply chain	Ownership	Corporate culture
3	Trust (positive)	Government connections	Government involvement	China-specific risks	Supplier control	HQ authority
4	Communication	China market growth	Long-term China strategy	China easy for business	KPIs	Global markets
5	China presence	China costs rising	China standards improving	Risk planning	"Integrator"	Local compliance

*Table 31 Most Frequent Codes: Case Studies Only (n=2)*

Sources: CS1, CS2						
Theme	Relationships	Macroeconomics	Strategy			
Rank			China	Risk	Supplier management	MNEs
1	Long-term relationships )	China market growth	Cultural issues	Quality	Suppliers	Global practices & standards
2	Dispute resolution	Government connections	Manufacturing	Supply chain	"Integrator"	HQ authority
3	Hands-off management	BRICs	China office autonomy	China-specific risks	Ownership	Global markets
4	Cooperative working	China growth	China standards improving	Dis-intermediation	Supplier control	Local compliance
5	Intermediaries	China costs rising	Long-term China strategy	Expat flight	KPIs	Highly global presence

*Table 32 Most Frequent Codes: All Industry Key Informants (n=6)*

Sources: IK1, IK2, IK3, IK4, IK5, IK6						
Theme	Relationships	Macroeconomics	Strategy			
Rank			China	Risk	Supplier management	MNEs
1	Trust (positive)	Corruption	Cultural issues	Quality	Suppliers	Global practices & standards
2	Communication	China low cost attractive	Manufacturing	Supply chain	Ownership	Corporate culture
3	Informal practices	BRICs	Long-term China strategy	China easy for business	Supplier control	Local procurement
4	Contracts	Government connections	China office autonomy	Other China risks	KPIs	Ethical business policy
5	Cooperative working	China market growth	China standards improving	Dis-intermediation	Supplier push	Global procurement model

*Table 33 Most Frequent Codes: All Other Key Informant Sources (n=9)*

Sources: AK1, AK2; CK1, CK2, CK3; FK1, FK2, FK3; LKs						
Theme	Relationships	Macroeconomics	Strategy			
Rank			China	Risk	Supplier management	MNEs
1	Key China person	China not unique	Cultural issues	Quality	Suppliers	Corporate culture
2	China presence	Corruption	Manufacturing	Supply chain	Ownership	Global practices & standards
3	Cooperative working	China low cost attractive	Government involvement	Risk planning	Adversarial supplier management	Global markets
4	Relationship building	China costs rising	China standards improving	China easy for business	Iceberg costs	Importers
5	Business networks	BRICs	Human resource lag	China-specific risks	Supplier opportunism	Local compliance



*Table 34 Most Frequent Codes: Case Study and MNE Key Informants (n=4)*

Sources: CS1, CS2; CM1, CM2						
Theme	Relationships	Macroeconomics	Strategy			
Rank			China	Risk	Supplier management	MNEs
1	Trust (positive)	Corruption	Cultural issues	Quality	Suppliers	Global practices & standards
2	Long-term relationships	Government connections	Manufacturing	Supply chain	Ownership	Corporate culture
3	Contracts	China market growth	China office autonomy	China-specific risks	Supplier control	HQ authority
4	Informal practices	China growth	Long-term China strategy	Other China risks	"Integrator"	Local compliance
5	Cooperative working	BRICs	China standards improving	Expatriate flight	KPIs	Ethical business policy

*Table 35 Most Frequent Codes: UK SME Key Informants (n=4)*

Sources: IK3, IK4, IK5, IK6 UK SME Industry Key Informant Sources Only (n=4)						
Theme	Relationships	Macroeconomics	Strategy			
Rank			China	Risk	Supplier management	MNEs
1	Communication	China low cost attractive	Cultural issues	Quality	Suppliers	Global practices & standards
2	Trust (positive)	China costs rising	Manufacturing	Supply chain	Ownership	Design services
3	Key China person	Government connections	China standards improving	China easy for business	Supplier control	Highly global presence
4	Cooperative working	China growth	Long-term China strategy	Disintermediation	Supplier push	Global markets
5	Informal practices	China market growth	China as buyer	Expatriate flight	Customer pull	Local procurement

*Table 36 Most Frequent Codes: Academic Key Informants (n=2)*

Sources: AK1, AK2						
Theme	Relationships	Macroeconomics	Strategy			
Rank			China	Risk	Supplier management	MNEs
1	Cooperative working	Corruption	Cultural issues	Quality	Suppliers	Corporate culture
2	Buyer power	China costs rising	Manufacturing	Risk planning	Adversarial supplier management	Global practices & standards
3	Relationships as risk management strategy	China growth	Human capital wealth	China-specific risks	Supplier opportunism	Highly global presence
4	Business networks	China not Asian priority	Chinese managers	Extended supply chain risks	Overseas supplier visits	Global procurement model
5	Trust (positive)	China market growth	China office	Supply chain	Supplier control	Global markets

*Table 37 Most Frequent Codes: Consultant Key Informants (n=3)*

Sources: CK1, CK2, CK3						
Theme	Relationships	Macroeconomics	Strategy			
Rank			China	Risk	Supplier management	MNEs
1	China presence	Corruption	Cultural issues	Quality	Suppliers	Importers
2	Key China person	China growth	Manufacturing	Supply chain	Iceberg costs	Local compliance
3	Intermediaries	China not unique	China as buyer	Dis-intermediation	Ownership	Highly global presence
4	Valuable expertise	China costs rising	Chinese managers	China easy for business	Supplier control	HQ authority
5	China visits	Chinese not yet international	China standards improving	Risk spreading	KPIs	Global procurement model

*Table 38 Most Frequent Codes: Firm Comparator Key Informants*

Sources: FK1, FK2, FK3						
Theme	Relationships	Macroeconomics	Strategy			
Rank			China	Risk	Supplier management	MNEs
1	Relationship building	China low cost attractive	Cultural issues	Quality	Suppliers	Global practices & standards
2	Key China person	BRICs	Manufacturing	Supply chain	Ownership	Global markets
3	Business networks	Government connections	Government involvement	Dis-intermediation	Supplier push	Design services
4	Valuable expertise	China market growth	JV problems	China-specific risks	Customer pull	Highly global presence
5	Trust (positive)	China not Asian priority	Human resource lag	Expatriate flight	Supplier control	HQ authority

*Table 39 Most Frequent Codes: LinkedIn Discussion Key Informants\**

Source: LKs						
Theme	Relationships	Macroeconomics	Strategy			
Rank			China	Risk	Supplier management	MNEs
1	Key China person	China not unique	Cultural issues	Supply chain	Suppliers	Highly global presence
2	Communication	Corruption	Manufacturing	China easy for business	Ownership	HQ authority
3	Valuable expertise	China costs rising	Government involvement	Quality	Supplier control	Global procurement model
4	Business networks	China growth	China standards improving	Dis-intermediation	KPIs	Global practices & standards
5	Dispute resolution	China not Asian priority	Human resource lag	Expatriate flight	Integrator	Global markets

\*This collective source was an online discussion started by the research author. All participants were supply chain and procurement professionals active on an access-restricted Linked-In forum. The topic of the discussion was China supply risk. The number of participants was 27. Three participants sent extended, highly detailed responses by e-mail. These were included in the analysis.

## **8. Interviewee Details**

With the exception of authors and academics, all names in this thesis have been changed. Non-anonymized exchanges occurred in online forums. Case study and key informant company names have also been changed.