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Researching ICT-Based Enterprise for Women in Developing Countries: A *Gender Perspective*

Women's ICT-Based Enterprise for Development project

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Introduction

Much development work has been channelled into ICT projects and the development of ICT-based enterprises can be an effective component of such projects, including ICT-based enterprises for women.

Although there is evidence to suggest that globalisation has given some employment opportunity to skilled and educated women, the general impact of globalisation on the gender division of labour in developing countries has been negative. Women continue to be assigned those jobs with the least skilled level of work and lowest remuneration (Hafkin and Taggart 2001, Randriamaro 2002).

According to Hafkin and Taggart (2001), the United Nations places access to ICT as the third most important issue facing women globally, after poverty and violence against women. While ICTs have the ability to affect gender inequities found in many areas of development (education, health care, access to economic opportunities, etc (Gadio 2001)), failure to incorporate a gender focus in the ICT development process can have the opposite effect:

"Computer technology (like any technology) is shaped by the values, assumptions, goals and prejudices of those involved in its design, engineering and financing. Its use and influence in society is shaped by the roles, values, assumptions and goals of those who own it and those who can access it. Technologies introduced into environments characterised by inequality tend to reinforce and even exacerbate it." (Derbyshire 2003, p48)

Wood (2001) argues that if ICT projects are not sufficiently gender-sensitive they can (unintentionally) marginalise women further.

In recognition of the need to address the gender implications of ICT-based enterprises, we must examine how they affect any gender inequities in the communities involved. Adopting a gender perspective to examine the experience of such projects can help us. A gender perspective can thus be seen as either complementary to enterprise and livelihoods perspectives on ICT-based enterprise, or as an integral component of those perspectives.

To determine the scope of any analysis we need to consider what we mean by 'gender implications'. Reeves and Baden (2000) argue that **gender equality** implies equality in opportunity for women and men (a more liberal-feminist approach), whereas true **gender equity** focuses on their wider life outcomes:

"The goal of gender equity [...] moves beyond equality of opportunity by requiring transformative change. It recognises that women and men have different needs, preferences, and interests and that equality of outcomes may necessitate different treatment of men and women." (Reeves and Baden 2000, p10)

The various gender roles that are commonly associated with women's lives have been identified (APC-WNSP 2002a) as their reproductive roles (childcare responsibilities), productive roles (income-generating responsibilities) and community roles (often unpaid). The impacts of ICT-based enterprises in each of these roles of the women involved need to be considered.

This paper will begin by discussing what a gender perspective implies and various approaches that may be employed. It then outlines the Gender Evaluation Methodology (GEM) (APC-WNSP 2002a), a framework for evaluating gender impacts of ICTs and, lastly, discusses the operationalisation issues of this framework.

A. What is a Gender Perspective?

Several approaches may be taken when researching from a gender perspective.

Harding (1987) identifies three classifications of gender positions in research:

- **gender as variable** – matches a feminist empiricism view, that women are seen as a homogenous category and also that phenomena such as inequality can be explained by simply comparing men and women. More comprehensive cultural patterns and structures are not considered, placing this position in a liberal feminist view.
- **feminist standpoint** – stresses the importance of women's situation and shared experiences, and regards the "... widespread oppression and devaluation of women as central features of society and its institutions" (Alvesson and Due Billing 1997, p37). This approach embraces qualitative research methods based on the personal experiences of women to provide critical insights. Although criticised as treating women as a homogenous category, this can be 'softened' by identifying specific sub-categories of women for the subject of research. This classification fits in the socialist feminist perspective.
- **post-structuralist/post-modern/post-feminist** – questions gender categories and stresses that the "... meaning of 'woman' is not universal but varies with ... contexts..." (Alvesson and Due Billing 1997, p38). It stresses the local and avoids the universal, focussing on highly personal and individual experiences. Criticisms of this view include that it is hard to preserve analytical focus and argument (Alvesson and Due Billing 1997, p42).

Alvesson and Due Billing suggest a fourth category (1997)

- **critical-interpretive** – although it does not accept the view that 'patriarchy is universal', this approach attempts to bring forward the voices and interests of 'unfairly treated groups'. It also recognises that the expression of gender relations is context-sensitive, yet supports using 'universal categories' in a "... locally defined situation ... with the ambition of finding patterns as well as variations in the local case." (Alvesson and Due Billing 1997, p47). Therefore it sees the relevance of some quantitative data and analysis of non-ambiguous relations, while emphasising the use of qualitative approaches to capture understandings and ideas.

When researching ICT-based enterprises targeting women, these various positions on gender would direct the research in different ways. For instance, a "gender as variable" approach might focus the research very much on a comparison of the participation and experience of women directly affected with those of men. Taking a "feminist standpoint" perspective might attempt to consider factors impacting on the women affected (and perhaps those missed) by their cultural environment's views on gender. A more post-structuralist approach might focus very much on the individual

experiences of women involved and aim to 'give them a voice' rather than attempt to generalise their experience to other women.

A1. Gender and Development

In looking particularly at development from a gender perspective, Rathgeber (2000) identifies three early theoretical approaches:

- **women in development (WID)** – rooted in a modernisation theory of development this approach targets the individual as the catalyst for social change. It has been criticised (eg. Visvanathan et al 1997) as being implicitly gendered and detrimental to 'third world women', with the focus on western values.
- **women and development (WAD)** – an attempt by Marxist and dependency theorists to examine structural and socio-economic factors within which gender inequalities are embedded (eg. Banderage 1984). This is criticised (Visvanathan et al 1997) as being so radical and rigid in ideological view that it restricted involvement in official efforts to address the needs of 'third world women'.
- **gender and development (GAD)** – a holistic approach, drawing on the limitations of WID and WAD, emphasising gender relations in the labour force and in the reproductive sphere (eg. Wallace and March 1991, Cleves Mosse 1993). "Focuses on the socially constructed basis of differences between men and women and emphasises the need to challenge existing gender roles and relations." (Reeves and Baden 2000, p33). This has been adopted by many NGOs.

Visvanathan et al (1997) add the following more recent perspectives:

- **women, environment and development (WED)** – attempts by ecofeminists to draw parallels between male control over nature with that over women (eg. Harcourt 1994). This approach emphasises protecting the traditional cultural heritage of 'southern communities', and on changing the discourse of development to incorporate contextual considerations, gender relations, political ecology, etc.
- **southern theoretical perspectives** – since the end of the UN Decade for Women, this is an attempt by women of 'the south' themselves to focus on and highlight their own agenda, hear their voices, their perspectives, their experiences etc.

We can see here that once again, approaches range from those focussing on individual participation such as WID (in line with the 'gender as variable' position), to those taking a wider scope and looking more to the context in which women (and the development project) exist. In researching ICT-based enterprises for women, this would raise questions of whether one should focus on women engaged in the enterprise alone, or should also look at the wider socio-economic, political and cultural factors affecting them to consider more far-reaching change.

A2. Gender and ICT

In considering the impacts that ICTs may have on gender inequities, several gender perspectives of technology have been suggested. These have included, the "**women in technology**" approach of Henwood (1993), which took a gender-neutral view of technology and focussed on increasing female participation with technology. Henwood later extended the view to see technology as a cultural product

("technology as culture") and argued therefore that women need to be producers of the technology (cited in APC-WNSP 2002b) as well as users. This approach is still restrictive in scope (more a liberal feminist view), largely ignoring the wider factors in society and focussing on women's participation alone (as users and as producers). As Rowbotham explains (Rowbotham 1995, p65),

"... a gender lens alone becomes insufficient: other forms of social exclusions [...] have to be considered."

Cockburn's "**gender & technology as socially defined**" perspective (Cockburn 1985) and Mitter & Rowbotham's "**experience of daily life**" (Rowbotham 1995) recognise the non-neutral view of technology and the interrelation between technology and gender relations in society.

"ICT usage represents a social reality [...] Addressing these realities (including gender imbalances) creates a space for social justice [...] We need to ask: Who controls the mouse?" (Wood 2001, paragraph 5.7)

Whilst it is well recognised that access to ICT resources is important, addressing access alone is insufficient to avoid a gender gap in ICT engagement. The importance of the involvement of women in making decisions about the development of the new technologies is recognised by the United Nations and others (Gadio 2001, Tshukundu 2002, Hafkin and Taggart 2001). Yet out of 201 senior government officials in charge of ICT in developing countries, only 11 (5.5%) are women (Hafkin & Taggart 2001).

Participation in the *decision-making and control* of ICT deployment are as important as *access*; as are:

- the design and use of the hardware and software components – as noted above (Cockburn 1985, Rowbotham 1995), some research highlights the inherent gender bias of science and technology as a major barrier to women's engagement with ICTs. Wood argues (2001, section 6.3) that women's participation is evident in the "IC" of ICTs but not necessarily in the "T". Effective deployment of the technology by all requires that women be active in the design of the technology.
- the design and form of the information content – many (eg. Chapman and Slaymaker 2002, NEPAD 2001), recognise the need to develop 'local content' based especially on the local cultural legacy rather than depending on western-designed content. Again, women need to be involved in the design of the type and form of the content.
- the training and education programmes available for technology users and designers – to be part of the ICT professions, women need to move into more technically and cognitively oriented, better-paying jobs which rely heavily on an educational background in science and technology (Hafkin and Taggart 2001). Yet, female participation in science and technology world-wide is lower than males at all levels¹. The nature of the education and training programmes is the subject of research to identify whether a gender bias is evident. Equally, positive action initiatives targeting women have been introduced in many countries, with mixed success.

¹ This is not a problem peculiar to developing countries: in the US, Computer Science is the only undergraduate subject where female participation has decreased over time – from 37% in 1984 to 28% in 2000 (Derbyshire 2003).

- the employment conditions and opportunities available – much research is taking place into the reasons for the poor participation of women in the ICT professions both in the developed world and the developing world. Reasons cited include reduced access to education in general, socio-cultural norms discouraging women from studying science and technology, and the feminisation of the ICT jobs that women hold (Hafkin and Taggart 2001). The image of the world of computing and the kind of work culture women can expect there is an important factor to address.

Such issues cannot simply be measured in quantitative terms but require deeper analysis to determine social and cultural factors at play. Clearly, once again, the researcher could take the approach of focussing on individual participation of women as users (the 'women in technology' approach) and producers (the 'technology as culture' approach). It has been shown here however that to analyse the deeper issues affecting women's engagement with ICTs we need to take a wider scope, such as the 'gender & technology as socially defined' and 'experience of daily life' approaches.

A3. Scope of a Gender Perspective and Analysis Issues

It is clear from this overview that a gender perspective may take several forms varying from those focussing primarily on the **individual** as the means to bringing about change, to those taking a wider scope and attempting to transform the **society** and **culture** in which women are living. In taking Reeves and Baden's definition of gender equity and the wider issues concerning women's engagement with technology, it is clear the latter approach is needed if we are seeking to seriously address gender impacts of ICT-based enterprises.

In summary, in adopting a suitable gender perspective for researching ICT-based enterprises the following need to be accommodated:

- the non-gender-neutral nature of technology,
- ICT engagement going beyond mere participation,
- engagement with ICTs appearing to be universally gendered (ie. women globally appear to share a marginalised position), and
- gender relations that are embedded in their environmental context

In considering the scope of a gender perspective, it is also important to identify what type of gender needs any analysis attempts to consider. Moser (cited in Reeves and Baden 2000) categorises the gender needs of women as falling into two types:

- their more immediate interests can be referred to as their **practical needs**:
"... needs identified by women to assist their survival in their socially accepted roles, within existing power structures." (Reeves and Baden 2000, p14)
- the political interests of women are described as their **strategic needs**:
"... needs identified by women that require strategies for challenging male dominance and privilege" (ibid).

A gender analysis attempts to examine information on gender differences and social relations to identify (and redress) any gender inequities. Such analysis can address

either or both of these types of gender needs. By examining the gender impacts of ICT-based enterprises, we can determine to what extent the practical needs of the women involved are being addressed. Examining the more transformative effects of such enterprises on inequities in the community is harder to carry out but may enable the more strategic needs of the women affected to be evaluated.

Gender indicators are "signposts that capture and measure the status of gender equality in a given context" (Wood 2001, section 4.5). Some official indicators exist (eg. Human and Development Index, Gender Development Indices, etc) but it is important for any project evaluation to determine specific indicators for the context of the project. Typical gender indicators are participation rates (eg. in specific jobs or in decision-making), salary levels, average working hours, etc., all aggregated by gender. However, for more qualitative information, gender indicators may be evidence of positive action in policy, perceptions on male/female job roles, etc.

A suitable framework needs to be selected to guide research into ICT-based enterprises, that addresses these aspects of a gender perspective. One such framework is the Gender Evaluation Methodology (GEM) developed by The Association for Progressive Communications (APC). The next section presents the framework and considers its suitability in light of the discussion on gender perspectives presented here.

B. The APC-WNSP GEM Framework

B1. Gender Perspective

The Association for Progressive Communications (APC) attempts to adopt a gender perspective on using ICTs as a tool to bring about social justice, with the aim to transform unequal power relations between men and women (APC-WNSP 2002d). They stress an awareness that ICTs can be used to transform or exacerbate these relations, and recognise the importance of ICTs to development.

Their Women's Networking Support Programme (WNSP) began in 1993 to address basic access and connectivity issues for women and awareness raising. By 2000 they became more focussed on the importance of women's involvement in the "definition, design and development of new technologies" (APC-WNSP 2002d). They identify the following areas as critical in achieving gender equality:

- access and control (to resources)
- education, training and skill development
- industry and labour (employment in the industry)
- content and language (of information resources)
- power and decision-making (over the resources)
- privacy and security (of Internet use)
- trafficking, pornography and censorship (affects of Internet)
- putting ICTs to strategic use (for social action)
- right to communicate (access and use of Internet and electronic communication)

This change in emphasis from 'women as users' to 'women as producers' of ICTs fits well in examining ICT-based enterprises run by women, where one would expect to find women designing and developing ICT solutions.

The Gender Evaluation Methodology (GEM) they have developed is grounded in the view that any gender analysis should (APC-WNSP 2002a, p1-2):

- "include an examination of economics at the micro-, meso- and macro-levels and across a range of institutional contexts (households, communities, markets and states)"
- "consider how ICTs interact with women's triple roles and examine changes brought about by the new information economy on women's and men's gendered roles."
- assess the extent of response to both practical gender needs and strategic gender interests
- trace the factors that govern ICT production, consumption, distribution and appropriation (to determine gender equity in access, control and decision-making)
- address to what extent women participate in knowledge creation regarding technology (definition, making meanings and creating technological culture)
- determine what gender-transformative strategies are evidenced (to mainstream the concerns of women)

This perspective appears congruent with the transformative gender perspective (such as 'feminist standpoint' and GAD/WED approaches) and the 'gender & technology as socially defined' approach of Cockburn and Mitter & Rowbotham, and can therefore be seen as appropriate for examining ICT-based enterprises for women.

B2. Focus and Features of GEM

The Methodology provides a framework to evaluate an ICT project from a gender perspective. It focuses on:

"examining how an ICT intervention has affected changes at an individual, organisational, community and broader social level from a gender perspective." (APC-WNSP 2002c, p2)

Features of the framework include the fact that it:

- focuses on both self and social change: addressing the relationship between the ICT initiative and the way the "self" (individual, organisation and/or community involved) operates, and also the relationship between the ICT initiative and the broader context (social, political, economic, cultural)
- incorporates a gender analysis of relevant data: using suitable gender indicators to analyse resource access, control and decision-making
- incorporates both qualitative & quantitative data analysis: while some statistical or numerical data can be used to measure gender indicators (eg. labour statistics), more qualitative data needs to be included for determining aspects such as women's sense of personal empowerment, meanings associated with technology, etc.
- encourages learning by doing (by stakeholders): involvement of stakeholders as evaluators

- is linked to action: findings should be used to initiate/suggest change (ie. learn from the evaluation)
- is participatory (by all stakeholders): involvement of all types of stakeholder in the evaluation process, particularly at the grass roots level, and support for accountability
- is critically reflexive (by stakeholders): critical reflection enables learning
- is sensitive to bias: all stakeholders and evaluators have their own biases and these need to be recognised honestly
- is context sensitive: full dynamics of the context (social, political, cultural, etc) of the initiative should be considered, and investigating those not reached by the initiative as well as those reached should be included (if realistic).

B3. Process of GEM

The framework sets out four elements/stages to the evaluation:

- i. setting the evaluation approach – identify the purpose and goals of the evaluation and the general approach to be used
- ii. integrating gender analysis into the evaluation – identify the stakeholders to be participants in the evaluation, document the environment/context to determine gender equality and ICT for social change issues, and establish evaluation indicators
- iii. designing the methodology – identify suitable data and data collection methods, carry out the data collection, analyse the data and reflect on the findings, produce an evaluation report
- iv. putting the evaluation results to work – identify recommendations for action and develop a dissemination plan to share the results.

The next section discusses some practicalities in using the GEM framework to research ICT-based enterprises for women.

C. Operationalising the GEM Framework for Women's' ICT-Based Enterprises

In taking a gender perspective in evaluating ICT-based enterprises that are set up to target women in developing communities, we need to identify and consider impacts the enterprise has made to address gender equity. As we have seen, this involves going beyond looking merely at participation in and access to ICTs by individual women, but should consider many aspects to their engagement and involvement, particularly concerning decision-making and control issues. It should also investigate how the enterprise has impacted on their multiple gender roles and contributed more strategically to their general empowerment in their community. To evaluate fully, this would not only involve focussing on the impacts on the individual women directly affected, but should also analyse the more transitive effects on the community as a whole. This would involve including other community stakeholders in the evaluation, such as women not included in the enterprise, men, etc, and input from other groups in the socio-economic environment (eg. state, market, community).

The feasibility of the scope of such evaluations is dependent on the project under consideration. Regardless of the scope, however, the GEM approach appears to offer a useful framework.

By following the suggested process, the evaluation facilitator(s) can begin by clearly identifying the scope and priority focus of their evaluation. For instance, it may be more feasible to focus in depth on input from the women directly affected by the enterprise under study, and to limit analysis of impacts on other groups to a control group (of women not employed by the enterprise).

Participatory evaluation is a key element to GEM, which means that suitable stakeholders need to be identified to be closely involved and have direct input into the remit of the exercise. One example would be formation of a focus group consisting of members from each enterprise under study to guide the researchers in documenting the environmental context and determining gender equality and ICT for social change issues to be addressed. They can also assist in identifying which gender indicators will be useful to achieve this. This could potentially be a cause of tension for the researcher between attempting pre-hoc to identify questions and indicators for the study, yet at the same time be open to participatory suggestions about issues and indicators.

Table 1 sets out an example of the kind of issues and indicators that may be used for projects concerning ICT-based micro-enterprises for women, considering the two categories of gender needs (see section A3).

Data collection would entail gathering some quantitative data (from secondary sources such as organisation and state-level reports and from primary data such as questionnaires) and also some qualitative data. Such qualitative data may be found in organisation and state-level reports (such as policy documents, minutes of meetings, etc) but much would come from primary sources such as individual stakeholders themselves (via interview). Since the nature of the more qualitative data concerns meanings, understandings, views, perceptions and experiences of women involved in the enterprise and issues that may be very sensitive, it would be more beneficial to study a small sample of individuals in-depth than to conduct a broad but more shallow study.

Analysis of the data using the gender issues identified as themes should then be possible. Reflection and identification of action for change may then follow. Although using a small in-depth sample can be criticised as difficult to generalise from, this is conducive with a feminist standpoint and critical-interpretive gender perspective. Recommendation may be possible for the enterprises under study, but the experience of the stakeholders involved should additionally be an important contribution to the body of knowledge informing other similar ICT-based enterprises.

D. Conclusion

This paper has attempted to describe the form that a gender perspective to research into ICT-based enterprises for women should take. While approaches to researching gender aspects in development and in ICTs may vary in scope and emphasis, it is

clear that there is some consensus in all these disciplines that to seriously research gender inequity a wide scope must be taken, that incorporates the society and culture in which the women under study are living. The GEM framework has been presented as a tool to assist in the evaluation of such ICT initiatives from a gender perspective, and issues concerning its use have been discussed.

Table 1: Sample Gender Issues and Indicators Framework for ICT-Based Enterprise Research

Aspects	Questions to ask	Gender indicators
<i>Gender Practical Needs:</i>		
Gender division of labour	What jobs are women being involved in (and which are they not), what jobs do they want, why are they getting/not getting these jobs	Employment statistics and details Job applications and results Stakeholders' views
Access to technology	What education/training is being offered to these women, what education/training would they like/do they need, do they have access to information they need	Education and training records Stakeholders' views
Control of resources & empowerment	Are women having an (equal) share in decision-making powers (eg. deciding which contracts to take)	Membership on decision-making bodies Job descriptions
	Are women having an (equal) share in strategy and policy development (eg. regarding the direction of the organisation)	Membership on policy-making bodies Job descriptions
Gender & technology	What are women's use & understanding/meaning of the technology (eg. what are their perceptions of technology, gendered professions, etc)	Stakeholders' views Evidence of women-led initiatives
Gender roles	What is the interaction between the technology and women's triple gender roles (eg. how have their roles been affected)	Productive: earnings, hours worked, career aspirations of stakeholders Reproductive: childcare changes, views on family roles of stakeholders Community: evidence of change in community tasks/involvement
<i>Gender Strategic Needs:</i>		
Gender inequities	What are the transformative effects on the society & inequities (eg. is there evidence of change in the community's views/treatment of women)	Evidence of gender policy formulation/change (eg. at state level) Evidence of change in role in household/community

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