Chapter 3
Digital Entrepreneurship: Insights From Online Business Communities

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ABSTRACT

Entrepreneurship has a long history. The terms entrepreneurship and entrepreneurs are defined in various ways. Entrepreneurs are considered individuals who lead innovation, show outstanding initiative, coordinate social and economic structures, convert resources and circumstances into feasible assets, and embrace risks associated with such ventures, as well as a concept in which entrepreneurs are primarily focused on the notion of profitability and opportunity identification. This chapter delves into the realm of digital entrepreneurship in the context of the UK and German online business communities.

INTRODUCTION

Entrepreneurship evolved throughout a rich heritage and has become centre to modern economic development (Hisrich, 1990; Shane & Venkataraman, 2000). One perspective characterises entrepreneurs as individuals who lead innovation, exhibit exceptional initiative, coordinate social and economic structures, convert resources and circumstances into viable assets, and assume the risks associated with such ventures (Hisrich, 1990). Another distinctive characteristic of entrepreneurship is primarily centred around the ideas of profitability and opportunity identification, where entrepreneurs recognise opportunities, establish new ventures, or redevelop existing businesses and lead to initiating and managing innovation across various sectors (Shane & Venkataraman, 2000). Similarly, digital entrepreneurship involves designing, launching, or running a business on digital systems to sell digital products and services across

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electronic networks. Technological advancements, networks, and easily accessible internet connections have leveraged entrepreneurship to an unprecedented level, merging conventional entrepreneurship with digital technology (Onuoha, 2007; Drucker, 2014).

As technology advances, further research is needed to uncover factors that nurture digital entrepreneurship and identify potential constraints and risk-mitigation opportunities (Mitchelmore & Rowley, 2010). In view of this, entrepreneurship is widely perceived to lead to open innovation, help economies overcome challenges and shape online communities (Kuratko, 2005; Lackéus, 2015). Digital entrepreneurial online communities consist of networks and actors collaborating to support innovative entrepreneurship, leading to significant economic development (Stam & Spigel, 2016). This incorporation of digital technologies has fostered innovation and the growth of digital start-ups, transforming industries and business models (Omorede, 2014). Omorede (2014) further proposed that entrepreneurship is not only based on economic benefits, but social entrepreneurship is driven by the motivation of social benefit, focusing extensively on societal contributions and developments rather than profits and growth.

The rapid growth of online start-up communities and digital ecosystems contributed to open innovation and promoted the development of digital skills among entrepreneurs (Kuratko, 2005; Lackéus, 2015). Social digital entrepreneurship, a subset of digital entrepreneurship is accordingly based on creating a positive social impact using digital technology in its business model (Omorede, 2014). While some views emphasise the economic aspects of entrepreneurship, diverse views perceive that social entrepreneurship is driven by the motivation for social benefit, focusing specifically on societal contributions and developments rather than profits and growth (Harding et al., 2002).

It is essential to consider that entrepreneurship and entrepreneurial activities are significantly influenced by an entrepreneur's individual intentions, motivations, aspirations, and goal-oriented behaviour. Consequently, entrepreneurs have been classified into two categories: necessity-based and opportunity-based, which helps identify their reasons for embarking on an entrepreneurial conduct (Harding et al., 2002). The extant literature on entrepreneurship has primarily focused on the processes of identifying, evaluating, and exploiting opportunities to develop future goods and services (Shane & Venkataraman, 2000). Therefore, more emphasis should be placed on exploring digital entrepreneurship and entrepreneurial ecosystems (Stam & Spigel, 2016). In this chapter, we aim to highlight the concept of digital entrepreneurship and the implications associated with this evolving phenomenon, that changed the ways businesses operate and opened up opportunities for growth and innovation (Drucker, 2014), hoping to pave the way for further investigation of these implications.

DIGITAL ENTREPRENEURSHIP

Entrepreneurship studies are divided and diversified, and this has been extended to the research of digital entrepreneurship (Karlsson et al., 2021). Digital entrepreneurship is an entity of the conventional entrepreneurship in which one or all segments have been digitised with the help of technologies (Hull et al., 2007). Elia et al. (2020) cited that the diffusion of digital technologies assists in creating new contexts where entrepreneurship and digital technology are giving rise to a new breed of entrepreneurs that facilitate to use of digital technology to create new ventures. Fernandes et al. (2022) cited that digital entrepreneurship creates new enterprises and digitalises existing business processes. Trongtorsak et

al. (2021) outline digital entrepreneurship as a subcategory of entrepreneurship where part or all of the traditional physical business venture has been digitalised. In this, traditional entrepreneurs should try transforming their traditional businesses, products and services into digital models. In support, Zaheer et al. (2019) define digital entrepreneurship as creating a digital start-up as a new business venture or within an established venture. Moreover, in this paper, "digital entrepreneurship" is understood as designing, launching or running a business on digital systems where it sells digital products and services across electronic networks. Moreover, digital entrepreneurship can be seen as a new way of creating and doing business in the digital era (Kraus et al., 2019).

Le Dinh et al. (2018) claim that technological advancements, networks, and easily accessible internet connections have contributed to the phenomenon of digital entrepreneurship, thus synthesising new innovative methods of creating endeavours with a fusion of conventional entrepreneurship in the digital era. In the early stages of venture creation, it's difficult to conceptualise it (Sopjani, 2019), whilst it is unclear what level of desire is required to qualify as an entrepreneurial firm rather than a small business (Mason and Brown, 2014). The success of a recently launched enterprise can rely heavily on the support available on a digital platform (Srinivasan and Venkatraman, 2018). Zaheer et al. (2019) clarify that the 'entrepreneurial ecosystems' are unique in digital entrepreneurship. Elia et al. (2020) emphasised that the digital entrepreneurial ecosystem, which associated with four dimensions; digital actors (who), digital activities (what), digital motivations (why) and digital organisation (how).

Entrepreneurs may not follow any established principles or norms, instead, the unique experiences shape the entrepreneurial process as they embark on their entrepreneurial journey (Morris and Schindehutte, 2012). For this reason, Ghezzi and Cavallo (2020) argue that digital start-ups should continuously undergo innovation to their business model as digital entrepreneurs need to tackle internal resources to the external conditions. The findings of Ghezzi and Cavallo (2020) further confirm that the learn start-up approaches can adopt an agile method where it allows business model innovation in digital entrepreneurship. Kraus et al. (2019) state that the digital business model works differently than the traditional business models. Hence, digital entrepreneurs should be aware of the opportunities, differences and threats to mitigate the risk of failure and succeed in the digital era.

Morris and Schindehutte (2012) have explored entrepreneur's experiences based on Affective Events Theory (AET) through a unique perspective, where entrepreneur's pre-venture experience, important events, experiential processing, knowledge, affective results, and decision making have been concluded as all linked in this paradigm and collection of concepts. Not all entrepreneurs pursue the high growth or profit model when starting a business, for some, it is basically a survival tactic or additional income source (Morris and Schindehutte, 2012). The literature findings of Zaheer et al. (2019) suggest that digital entrepreneurship needs more in-depth studies of start-ups across countries, industries, and regions. The research study of Bican and Brem (2020) reveals that digital entrepreneurship plays a leading role in achieving the sustainability goals of the United Nations Sustainable Development Goals, where it contributes to solving economic and environmental issues in future. Digital business models minimise resource utilisations towards a circular economy. Soluk et al. (2021) emphasise entrepreneurship as a support factor towards solving ongoing challenges of poverty among the rural populations in developing countries. The research findings of Soluk disclose that digital technologies positively affect entrepreneurship, where digital infrastructure is strengthened to create new ventures.

SOCIAL DIGITAL ENTREPRENEURSHIP

Recently, social entrepreneurship has attracted the attention of academics, policymakers, and entrepreneurs. An emphasis on money generation, as well as a focus on social innovation and the management of social organisations, ensures the sustainability of such initiatives (Ghatak et al., 2020; Ratten, 2018). Skivko (2021) reveals that social entrepreneurship can solve social and environmental problems by creating sustainable business solutions. Sustainable business goals are difficult to achieve without digital technologies. As Kraus et al. (2019) discussed, digital technologies create more opportunities for entrepreneurs; mobile devices, social platforms, web and e-commerce are drivers for digital social entrepreneurship. These digital platforms encourage individuals to start ventures that satisfy social needs and create sustainable innovations. These business models use digital technologies to create social values and execute social missions (Skivko, 2021).

These characteristics can help the entrepreneurs and online start-up communities in supporting each other. A mix of market and non-market activities are defined as socially beneficial entrepreneurship (Haugh, 2005). It is an excellent career choice because of its relevance in the social welfare sector. Digital technology has become more widely available and more affordable, which has benefitted social entrepreneurship. Digital social entrepreneurship is the future of social enterprise (Dacin et al., 2011). It has been increasingly common to develop corporate strategies that significantly rely on digital technology in the last decade (Mubarak and Petraite, 2020; Bharadwaj et al., 2013; Kiron et al., 2016).

There is a vast amount of literature claiming that the digital environment aids entrepreneurship, and reduces barriers, however, social inequalities and hierarchies do impose further obstacles for entrepreneurs at the early stages (Dy et al,. 2017). Therefore, these barriers exist whether the entrepreneurs are offline, or online as social structures remain the same. The research gap for social digital entrepreneurs and digital entrepreneurship is expanding frequently as technological innovations are advancing on a fast pace, therefore, Kraus et al. (2019) suggests that further research can be conducted to uncover other variables that boost digital entrepreneurship in the context of identifying potential constraints, risk-mitigation opportunities, and positive facilitators.

Social, digital entrepreneurship uses digital technology in its business model to make a positive social impact (Ghataka et al., 2020). Martin and Osberg (2007) have described social entrepreneurs as individuals working to improve the lives of marginalised groups and society as a whole by bringing positive change to the institutions in which they operate. The interaction between entrepreneurial activity and social structure within online communities generates networked resources recognised as social capital (Lin, 2002). Social capital in the context of online communities can be described as a sort of goodwill that is developed through the network of community interactions (Adler and Kwon, 2002). Economic sociology has consistently established that social capital within online communities can be managed and generated by knowledgeable individuals i.e., entrepreneurs, and this is consistent with conventional social capital literature (Bourdieu, 1986; Bourdieu 2011; Lin, 2002; Burt, 2000; Wellman and Wortley, 1990). A new age of social and entrepreneurial connections is emerging in online communities, in which many entrepreneurs can share resources and operate under new provisions and methods, however, the communities can lack imperial objective or aptitude (Lin, 1999). According to Wellman et al. (2003), there is minimal social management in online communities since entrepreneurs may easily quit communities with restrictive limitations or lack of resources.

Entrepreneurship and Open Innovation

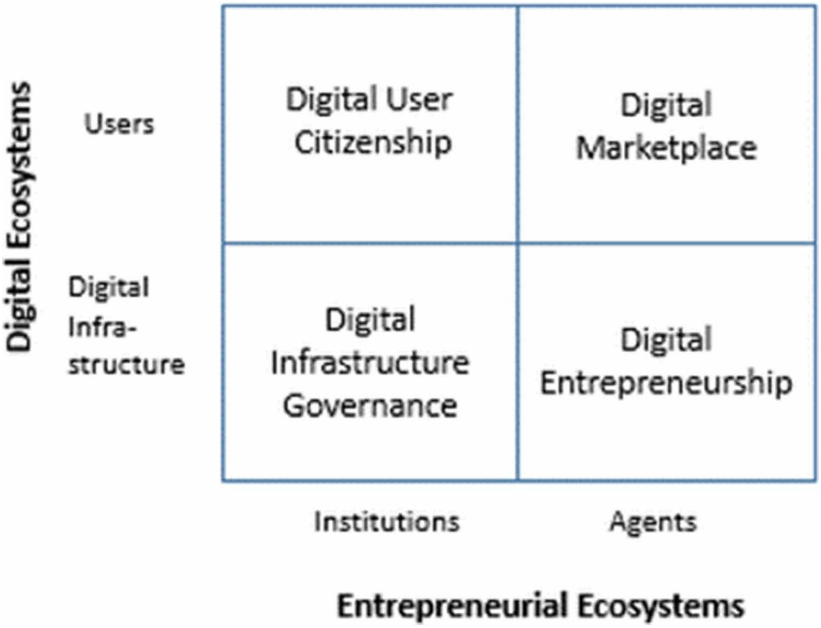
Entrepreneurship has led to open innovation and assisted disintegrating economies overcome challenges; however, the growth of the entrepreneur innovation can be limited by lack of core knowledge and external sources (Eisenhardt and Schoonhoven, 1996; Presutti et al, 2011). Open innovation helps influence and shape online communities through recognition of opportunities and technology (Chesbrough and Bogers, 2014; West and Bogers, 2014). Open innovation facilitates access to new knowledge through networking, providing development of new strategies on online community platforms that can be suitable for acting in response to volatile conditions that present in global marketplaces (Chesbrough, 2007). To generate innovation, the online community platforms rely heavily on entrepreneurial user ecosystem, hence, the platform success is dependent on user innovation and networking (Gawer and Cusumano, 2002; Eisenmann et al., 2009; Kenney and Pon, 2011). By regulating the flows of innovation-related knowledge and technology beyond organisational boundaries, open innovation entails harnessing external knowledge and commercial and economic prospects (Chesbrough and Bogers, 2014; West and Bogers, 2014). The online platforms that embrace open innovation ecosystems can also enhance their platform value through technology dynamics and resource availability (Gawer and Cusumano, 2014). Abbate et al. (2019) suggests that further research can highlight how platform users (i.e., entrepreneurs) are connected to the platform (e.g., online start-up community) to analyse the activities, resources, technology, and services to strategize using open innovation approach.

Digital Entrepreneurial Ecosystems

The digitalisation of almost every industry has led to remarkable growth in software-driven digital start-ups and supporting communities. This can create significant economic development; however, the software-propelled digital trade can also diminish the traditional high street organisations (Schroeder, 2013). The digital entrepreneurs and the online start-ups operate in the entrepreneurial ecosystem/system or the entrepreneurship's regional system. Within the entrepreneurial ecosystem, the actors' networks can function under the institutional infrastructure. The regulations can support the online start-ups by offering financial incentives and tax benefits or the low number of rules that the online start-ups should comply with (Nordina et al., 2019). The supportive culture improves the rewards for the online start-ups to take the risk that thinks creatively and the behaviour opportunities. The online start-ups conform to norms, and the values presented in institutional infrastructure gain legitimacy.

As depicted in Figure 1, the topic can be explored further by combing the two crucial factors: digital and entrepreneurial ecosystems; and how the collaboration of institutions and agents helps to create a perspective on consumer and social behaviours (Sussan and Acs, 2017). As shown in Figure 1, there are four components of the digital entrepreneurial ecosystem that can be used as a theoretical framework to grasp the understanding of the topic and explore the propositions at hand (Sussan and Acs, 2017). In determining the benefits of the online start-up communities, it is crucial to understand that one should fulfil the online start-ups for success. Some of those criteria have been related to the individual entrepreneur using the literature on entrepreneurship as described.

Figure 1. Digital entrepreneurial ecosystem
Source: Sussan and Acs (2017, pp. 55-73)

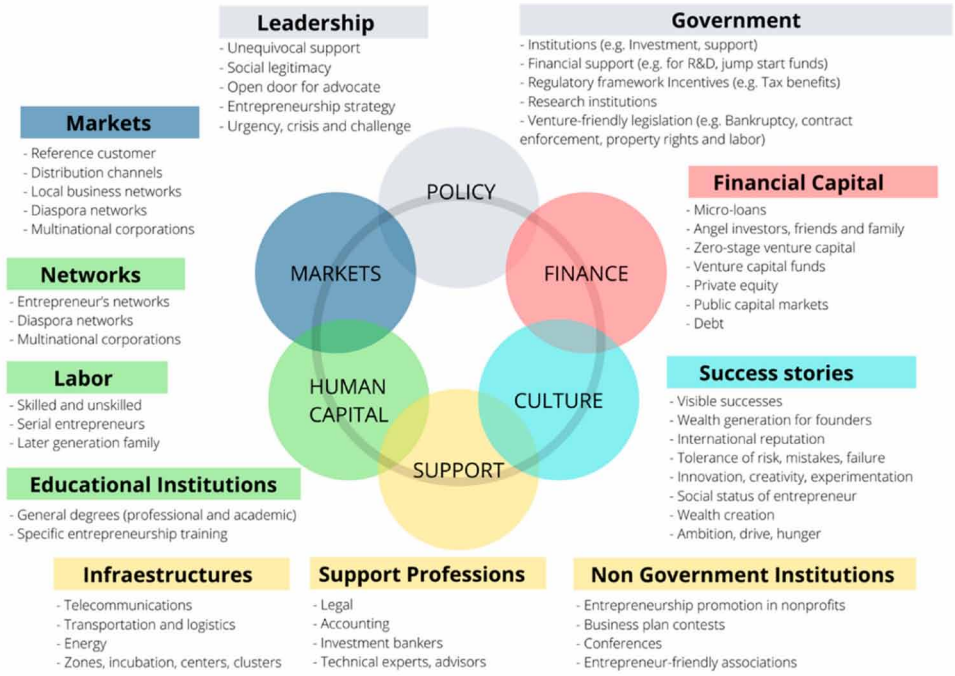


Entrepreneurial ecosystem is defined by Prahalad (2005) as a structure that encourages entrepreneurs, businesses, and communities to work together to create economic progress and success. Entrepreneurship can be an efficient way of introducing diverse and sustainable growth on online community platforms through its ecosystem, interactions, and social capital resources (Youssef et al., 2018). A sustainable entrepreneurial ecosystem requires several crucial elements to thrive and expand such as formal networks, informal networks, specialist support services, universities, government, investment services, and talent pool (Cohen, 2005). According to Tiba et al. (2020), start-ups perform exceptionally well in areas that have a high concentration of entrepreneurial activity, also recognised as entrepreneurial ecosystems. Although 'Silicon Valley' has always been viewed as the greatest global entrepreneurial ecosystem, however European entrepreneurial ecosystems, especially in Berlin (Germany), London (UK) and Tallinn (Estonia) have outgrown Silicon Valley with a higher number of start-ups (Tiba et al., 2020).

The Isenberg entrepreneurial ecosystem can be described with 6 factors that can interact with other various components and create a complex strategy for analysis. The correlated factors can be explained well through the illustration above (see Figure 2). The quality of the new venture can be directly affected by the availability of funds as shown in Figure 2. The government and its policies intend to offer equal opportunities and funds to all new ventures, however, not all projects can utilise the resources (Isenberg., 2011). The resources may also feel wasted on some projects where novice entrepreneurs can be on a test and trial approach and taking unnecessary risks. To equalise the resources the policymakers can be encouraged to identify the worthy and non-worthy enterprises, rather than providing a blanket of safety with favourable regulations. If a worthy enterprise can meet the necessary requirements, it can create a support system to self-fund future ventures (Isenberg, 2011). The circumstances and influencing factors can be hard to identify, however, under the right conditions, the online start-up communities can provide many benefits to the entrepreneurial ecosystem, the individual digital entrepreneurs, and the start-ups

(see Figure 3). Therefore, if these requirements cannot be balanced, start-up communities can lead to the malfunctioning of online communities and may create risks (Ngoasong, 2018). The main benefit of entrepreneurship can be that the successful entrepreneurs can reinvest their finances, capabilities, knowledge, and time in to support new ventures; thus, increasing the prospects of more successful enterprises (Mason and Brown, 2014). Successful entrepreneurs can engage in more projects and even make them venture junkies, where they can start treating entrepreneurship as a hobby, thus the experience creates a sustainable ecosystem that can maximise capital gains and reduce risks related to the early stages of new ventures (Isenberg, 2011).

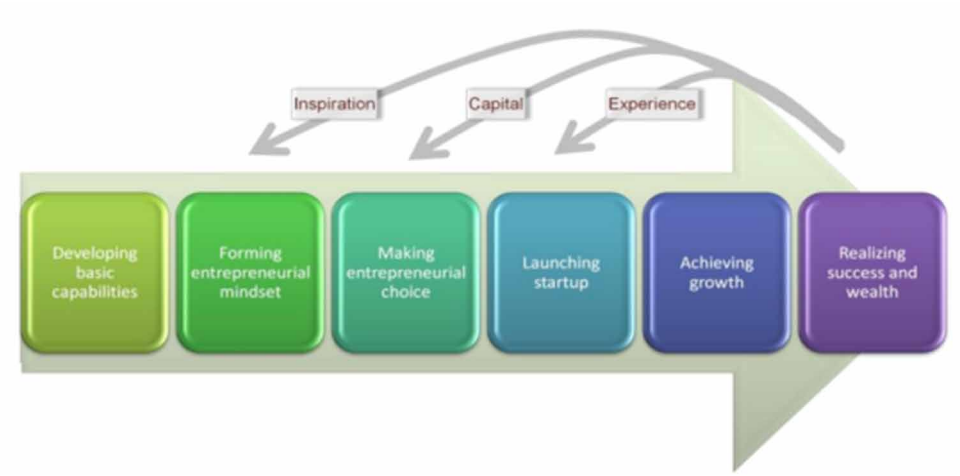
Figure 2. The Isenberg entrepreneurial ecosystem
Source: Isenberg (2011, p. 7)



Entrepreneurship ecosystem can be described as is a collection of mutually reliant actors and factors that work together to support innovative entrepreneurship (Stam, 2015). The actors can be defined as advisors, entrepreneurs, workers and mentors and factors can be identified as networks, research and development systems, policies, strategies, and cultural viewpoints (Acs et al., 2014; Autio and Levie, 2017; Stam, 2015). Mason and Brown (2014) and OECD (2010) emphasise that researchers have widely concentrated on high-growth entrepreneurship models and networks as it provides economic growth, job opportunities, drives employment throughout developing and established economies. Therefore, a literature gap can be identified in start-up or emerging entrepreneurship models and networking platforms to address open innovation. The shifts of innovation and economic benefits attract policymakers to entrepreneurial ecosystems (Mason and Brown, 2014; Spigel, 2017). The entrepreneurial ecosystems do not necessitate investments for physical infrastructure; however, they intend to establish an active

community of entrepreneurial actors who can assist creative new businesses start and expand by co-creating the support they need (Feld, 2012). Entrepreneurial ecosystems' composition and continuing relationships among the components that make them up are not static, rather they develop as biological ecosystems do (Autio et al., 2014; Hayter et al., 2018), It has been suggested, further research is required to apply a dynamic approach to understand the evolving factors that influence the entrepreneurs and online start-up communities.

Figure 3. Sustainable entrepreneurial ecosystem
Source: Isenberg (2011, p. 4)



ROLE OF TECHNOLOGY IN DIGITAL ENTREPRENEURSHIP

A plethora of research has been second steered to investigate and find the options to address the issues of entrepreneur uncertainty. Flexible boundaries, as well as the outcomes, are two imperative considerations, where arrival of technology has helped entrepreneurship in addressing the uncertainties, improving the processes, and enhancing the results (Muñoz and Kibler, 2016, Tomy and Pardede, 2018). Digitisation has opened new horizons in entrepreneurship in a more than ever connected world (Hisrich and Soltanifar, 2021), led to an enhanced exchange of knowledge as well as introducing new methods of business procedures and development. Novelty in the utilisation of resources (Marchant et al., 2008), collaborations, production, and financial dealings are an advantage of technology in entrepreneurship (Tony, 2012).

Integration of digital technologies-led digital entrepreneurship has been a source of innovation as well as many diverse startups (Szalavetz, 2020; Gregori and Holzmann, 2020; Sussan and Acs, 2017). Digital start-ups have seen a rise recently due to the COVID-19 circumstances and enhanced accessibility of the technology. Entrepreneurs see this opportunity of using digital technologies based on the prospects as mentioned in the social cognitive theory (Oppong et al., 2020). Opportunities in the digital world are quick to appear as well as disappear and there is a lot of competition due to the time factor (Rathee and Rajain, 2017). The novelty of every business model is at stake until pursued and testing and validation becomes an imperative aspect of digital startups (Vang et al., 2021).

Multiple strategies, for example, lean startup approaches and lean startups have been used to validate the business models. The validation strategies usually rely on the principles of breaking out of the structures, minimum viable product, verified learning, quick iteration, and pivot if required (Ries, 2011). The incorporation of digital technologies has not only led to the start of digital startups, but also digital transformation is on its way in recent times (Hilbert, 2022). New business models, innovative solutions, and unprecedented involvement of the customers have seen the rise (Spremic, 2017). The digital transformation era has also brought forward the need of equipping the existing initiatives to come up with digital transformations through which they will be able to survive in emerging landscapes (Berger et al. 2021; Kraus et al., 2019). Digital revolution has been found to depend on digital organizational setup, digital institutional organizations, and digital established structure (Hinings et al., 2018). Digitization has also enhanced the opportunities for entrepreneurs (Samara and Terzian, 2021), providing the startups with a variety of business models, new products and increased their preferences for collaborators, outlets and theoretical frameworks (Ali, 2019, 2020; M. Ali, 2019a, 2019b, 2021; Ali, 2022; Ali & Abdel-Haq, 2021; Ali & Edghiem, 2021; Ali et al., 2022; M. B. Ali, 2021; Ali et al., 2020a, 2020b; Recker and Von Briel, 2019).

The technology, however, has also brought up some problems in entrepreneurship for example many of the startups, as well as business models, no longer fall under the domains of local regulations so there has been an institutional conflict with many new initiatives (Chambers and Munemo, 2019). Similarly, accountability in an online sphere or with the novel entrepreneurs' projects has been a very difficult job alongside a lack of monitoring of the cash flows (Hanna, 2018). Likewise, the new instances of the shared economy as well as the platform revolution have led to unparalleled scalability (Acquier et al., 2019).

Among other issues at the intersection of technology and entrepreneurship is the limited availability of diverse information technology skills; which have seen an increase due to the extensive integration of technology in entrepreneurship (Amjad et al., 2020). Similarly, rising matters of cybersecurity, data analytics, and dynamic business models are among the issues that need to be resolved (Bianchini and Michalkova, 2019; Plachkinova and Pittz, 2021). The effectiveness of digital transformation might also be obstructed by outdated organizational structures, inefficient procedures, and restrictive leadership styles (Cinnioğlu, 2020) and this has been more evident since the pandemic started (Feghali et al., 2022). COVID-19 has also directed to people relying extensively on their laptops and smartphones, and as a result, clients are pickier and demanding than they have ever been (Thukral and Ratten, 2021). Another issue that occurs when an entrepreneurial venture doesn't have a defined approach to create or keep a budget, and as a response to modification requests and changing client demands, a scope deviation can be projected (Qermane and Mancha, 2021). Similarly, one of the cornerstones of digital transformation is handling customer data, and in recent times, it might be tough to process the data with outdated systems (Denoo and Yli-Renko, 2019). The technology helps create a digital competitive online environment for budding entrepreneurs and expand into international ventures (Rathee and Rajain, 2017). This can also provide a wide range of resources, knowledge, opportunities, and ease of digital funding to entrepreneurs of all ages on an online start-up community platform (Rathee and Rajain, 2017).

Traditionally, the technology entrepreneurs faced a crucial decision dilemma on whether to licence their technology to avoid copyrights, or to fully develop the technology to capture the commercial product value (Gans and Stern, 2003). However, the modern digital technology entrepreneurs engage themselves in an interlinked platform systems and network to take advantage of commercialising their solutions to aid other products (Srinivasan et al., 2004; Kyprianou, 2016), emphasising that platforms and networks are correlatedly linked. Giones and Brem (2017) indicate that further research can highlight how plat-

form dynamics can influence the entrepreneurs' activity in an evolving and developing ecosystem, also indicating how the user activity on a platform can help generate new open innovation. The research can help expand on the growth patterns studied by Hesse and Sternberg (2017) on the topic of technology entrepreneurship. The authors indicate that future analysis should focus on how the user activity on a community can help generate new open innovation, and exploration of growth patterns on the domain of technology entrepreneurship (Hesse and Sternberg, 2017).

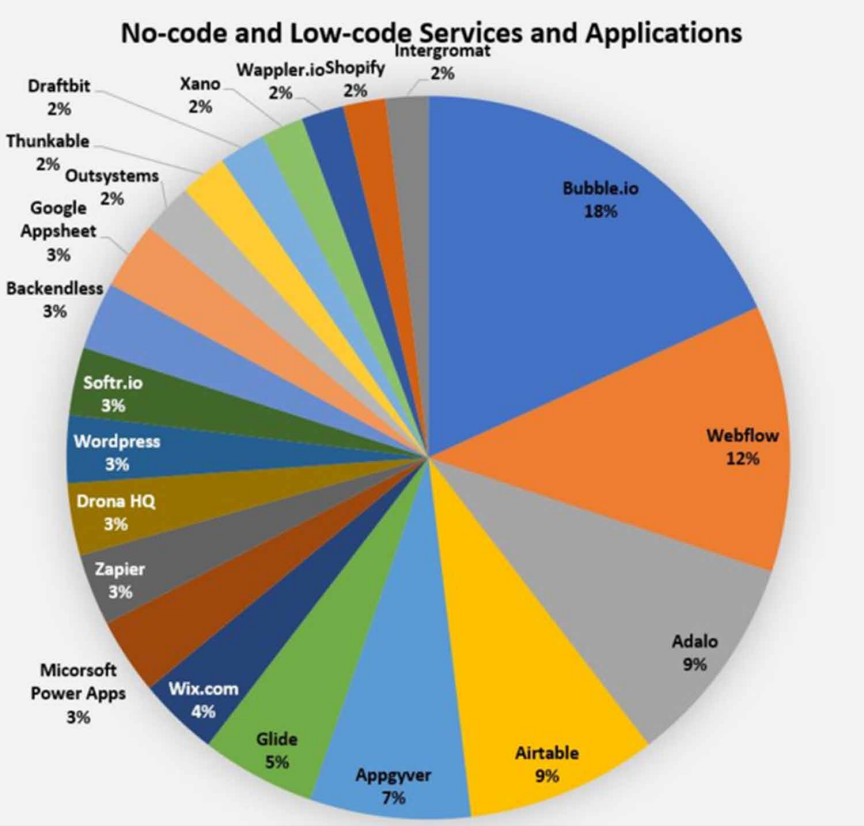
Digital Innovation and Entrepreneurship

A relevant theoretical framework for discussing the nature of digital entrepreneurship is provided by the rising debate on digital innovation and digital artefacts. Previously non-digital artefacts in an industrial environment have been heavily documented in several studies on the digital invention (Yoo et al., 2010). Whereas digital innovation and digital entrepreneurship have certain similarities with Shumpeter (1942) and Schumpeter (2017)'s four additional categories of innovations-new manufacturing methods, innovative foundations of source, manipulation of fresh markets, and a new way of managing business-they are also distinct from one another. Digital innovation is characterised by re-programmability, consistency of data, and self-referentiality (Yoo et al., 2010; Kallinikos et al., 2013). The convergence and generativity of these features have opened up previously unimaginable prospects for inventors and businesses. As a result of convergence, formerly distinct infrastructures, services, and appliances may now be combined (Tilson et al., 2010a).

Due to being purposefully unfinished and hence flexible, digital technology is characterised by its ability to stimulate future inventions and may be combined in many different ways (Fenwick and Edwards, 2016). However, digital artefacts are challenging to regulate because of their dynamic nature. According to the study, while being objects, they lack the wholeness and solidity of traditional products and gadgets (Kallinikos et al., 2013). The idea of a generative matrix is born out of this understanding of digitalization as a continual evolution of technology (Kallinikos, 2012). A substantial reallocation of resources as well as a reorganisation of routines, market connections, and patterns of goods and services flow emerged as a result of this opportunity (Bughin and Van Zeebroeck, 2017). Businesses are reorganising their strategy to take advantage of market possibilities because of the rising digitization; as growing digitization changes the value of knowledge assets, which in turn decreases the value of some legal protections and raises the value of new techniques for deploying information in creative ways (Atanasova, 2019). It is necessary to modify the incentives for innovation and creativity (Peukert, 2019; Atanasova, 2019).

Also, digital infrastructure has an auto-emergent, recursive nature, and different components of the system contribute to its continued growth (Henfridsson and Bygstad, 2013). Because the system may be reconfigured very quickly, this indicates the flexibility of digital infrastructure (Tilson et al., 2010b). However, because digital infrastructures are self-emerging, the system is subject to drifting. During the growth of infrastructure, there are often unintended side effects, unintentional consequences, and unanticipated uses (Ciborra et al., 2000). Digital innovation and technology have supported entrepreneurs and online start-up communities in identifying challenges and converting them to opportunities during unprecedented times of the covid-19 pandemic (Chen and Roldan, 2021). As demonstrated in Figure 4, there are several popular services and applications that have been introduced to the digital market as a result of the no-code and low-code innovation within the digital entrepreneurship (Luo et al., 2021).

Figure 4. No-code and low-code services and applications
Source: Adapted from Luo et al. (2021, p. 5)



Digital Start-Ups (DSS)

Entrepreneurs create entrepreneurial ecosystems that are specifically focused on digital start-ups that use digital technology to create innovative business models. These digital start-ups are quite diverse in their nature. Small and medium-sized enterprises (SMEs) with low-to-medium tech manufacturing and so-called high-tech new enterprises that specialise in translating scientific breakthroughs into marketable products and services make up this technology-intensive sector. Digitization-based start-ups, as a category of new enterprises, are not tied to any one industry or technology. The innovative business models they conjure can target clients in nearly any sector (Basu and Fernald, 2007). Digitization has made it possible to integrate any corporate resource with a digital interface since digital technologies and infrastructures are flexible and adaptable. Service and business model innovations are more important to digital start-ups than technology, product, or innovation strategy as the primary source of chances for start-up and scale-up. Entrepreneurship refers to the design and development of innovative organisational architectures that coordinate and utilise demarcation interactions for value co-creation. It is defined as "the execution of non-trivial modifications to at least two business model elements resulting in a new business strategy design for the organization's industry and market" (Bock and George, 2017).

As a foundation of competitive benefit, digital start-ups look to ecosystem architecture for support (Rosenstand, 2021). The success of these start-ups is highly dependent on cheap costs or distinctiveness, or both, according to Porter's value chain and strategy for competitive advantage (Porter, 1980). As a competitive environment, their strategies presume a modular vertical value chain structure, in which they attempt to position themselves relative to complementary assets (Teece, 1986). The digital start-ups, on the other hand, work in an architecture of layers and modules in which digitalization takes a horizontalizing impression on the organisation of value-generating activities. Start-ups that are digitally enabled are important vehicles for converting digital technologies into economic and societal advantages (Faludi, 2020). These enterprises are also more likely to expand up and become high-growth businesses. Start-ups are important drivers of an economy's innovation process and can provide ideas for existing businesses (Steiber and Alänge, 2020). Steiber and Alänge (2020) also indicate that innovative goods and fresh ideas are not just popular among start-ups, but also provide a vital impetus for older firms' digitisation efforts. Digital start-ups can also directly assist established businesses with their innovation and commercial operations. Interactions between existing firms and digital start-ups can have consequences in the development of novel business models in established industries, or start-up business models might function as digitalisation drivers (Margiono, 2020; Steiber and Alänge, 2020). Creative solutions and technology supplied by start-ups can help established firms become more competitive. Start-ups that employ big data and smart data solutions may assist established firms in making better use of their current data and reducing the increasing complexity of a linked and digitised environment. By providing innovative consumer interfaces, start-ups may dramatically improve customer interactions and communication for established businesses (Oppong-Tawiah and Bassellier, 2017; Danarahmanto et al., 2020). By collaborating with established businesses, start-ups can benefit from increased sales and corporate growth. For example, a start-up can benefit from improved reputation, higher awareness, and improved business image, as well as extended sales techniques and a larger target audience (Beisheim and Langner, 2021). As digital start-ups may take use of digital affordances, they are unique from traditional new enterprises. A digital firm follows a certain operational logic to develop its business model, which is based on a variety of management guidelines. They require different structural components, resource dynamics, and management techniques in order to create and utilise a common information and resource base at the landscape scale to serve this aim (Bashir et al., 2016). The digital start-ups can also have an advantage due to their vast resource dynamic, support available through the online start-up community, strong personalities, and information base (Autio and Cao, 2019)

CONCLUSION

Digital entrepreneurship has been a prominent phenomenon due to its enormous benefits not only for entrepreneurs and organisations, in the form of higher profits and improved product and services, but also for the society as a whole by ensuring the attainment of sustainable growth and development goals. This chapter intended to draw readers' attention to this distinctive construct and highlight the current paucity in the literature to provide better understanding of the key co-dependent actors and factors that have influence on digital entrepreneurship, online platforms, and entrepreneurial ecosystems by synthesising the literature on digital entrepreneurship and then bringing together key relevant themes as explained in the extant literature.

The diffusion of digital technologies brings in new entrepreneurial phase which has evidently preceded and altered the traditional ways of searching for entrepreneurial opportunities. This digital transformation resulted in initiating different institutional provisions, setting off unique structures, practices, and values, challenging existing logics and influenced the standards of conventional business.

Consequently, entrepreneurs have to incorporate new proficiencies of digital nature including both hard and soft skills, which make them able to retain, undertake, lead, and develop digital technologies and their innate knowledge for online networking, problem solving, and a positive socio-economic impact. For this purpose, the establishment of digital ecosystems may facilitate the successful development and growth of digital startups, as ecosystem links the entrepreneurs to a network of highly capable and specialized actors having diverse knowledge, skills and abilities, and in this way digital ecosystems ultimately foster open innovations. The focal point of an ecosystem is not a particular venture or individual, instead it focus on the development and opportunities for the entire region and community, thus it is connected to whole external environment with a view to construct a bridge among various actors by establishing firm and effective connections among them in order to institute entrepreneurial networks and best practices communities.

Moreover, the development of a thriving ecosystem is determined by industry conditions and innovations diffusion (i.e. more disruptive technological discontinuities often result in prime opportunities). Therefore, it has become obligatory for enablers of entrepreneurship to connect the entrepreneurial ecosystem to the innovation dynamics and digital technological transformations. To reap the maximum benefits of digital entrepreneurship through the adoption of online platforms and the development of prospering ecosystems, the entrepreneurs and organizations have to build high levels of intellectual (i.e. organizational, relational, and human components) as well as social capital. To sum up, the ways how the businesses are conducted by the entrepreneurs today have been shifted drastically due to digitalization and online networking platforms, and resulted in remarkable growth in software-driven digital start-ups and supporting communities in almost every industry. Through online communities, entrepreneurs can share resources and operate under new provisions and procedures, however, the communities can lack imperial objective or aptitude. Thus, this chapter has highlighted the underlying themes, changes, and challenges to unveil the importance of digital entrepreneurship as an emerging line of extreme significance and also provide directions to facilitate more research in the field of digital entrepreneurship.

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