

The Sustainability of Small and Medium-sized Enterprises (SMEs) in A Digital Economy Era

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Abstract

In an economic downturn, the adoption of digital economy and utilization of Information Technology with Small and Medium-sized Enterprise (SMEs) seem to be increasingly important and becoming a new foundation for entrepreneurs today. These are believed to offer a number of advantages regarding the efficiency, effectiveness, and innovation across the business functions which can lead to more productivities and new opportunities in the market. This will directly induce a great number of new entrepreneurs in the market, removing market barriers and enhance the competitive advantages especially from the SMEs sector - the backbone of the economy in most countries. However, it is not a straightforward task. On one hand, myriads of new entrepreneurs are enjoying the new opportunities that their older generations never had and at the same time their customers are also adjusting their consumption behavior from the old ways to the digital ways very well. On the other hand, researches have found that most SMEs still face the problems in relation to how they can digitize their business structures and functions such as finance, marketing and human resources and above all international cooperation. Therefore, this paper aims to highlight key success factors and provide a guideline for SMEs how to start successfully in the key emerging markets as well as introduce key sustainability factors in a digital economy era. The findings of this research should prove valuable to any size of businesses and create a greater awareness of the advantages of the digital economy and business sustainability of SMEs. In sum, it was shown that SME entrepreneurs had to carefully consider the relevant organizational and individual factors as well as the degree of innovation adoption in the organization in order to warrant their business successes in this post-modern business era, the digital economy.

Keywords: Sustainability, Small and Medium-sized Enterprises (SMEs), Digital Economy

บทคัดย่อ

ในสถานการณ์เศรษฐกิจที่ถดถอย แนวคิดในการนำระบบเทคโนโลยีสารสนเทศมาใช้ในกระบวนการทางธุรกิจ ในวิสาหกิจขนาดกลางและขนาดย่อม (SMEs) กลายเป็นเรื่องสำคัญและเป็นปัจจัยพื้นฐานใหม่สำหรับการลงทุนของผู้ประกอบการในยุคปัจจุบัน เช่นเดียวกับแนวคิดการบริหารเวลาอย่างมีประสิทธิภาพและการเป็นมิตรต่อสิ่งแวดล้อม และสังคม โดยแนวคิดในการประยุกต์ใช้ระบบเทคโนโลยีสารสนเทศในเศรษฐกิจดิจิทัลของผู้ประกอบการ เชื่อได้ว่า จะนำมาสู่ประโยชน์ในการต่างๆ เช่น การเพิ่มขึ้นของประสิทธิภาพ ประสิทธิผล นวัตกรรม และโอกาสในการเข้าสู่ตลาด

ใหม่ นอกจากนี้ยังจะเป็นการเพิ่มจำนวนผู้ประกอบการใหม่ในตลาด สามารถกำจัดสิ่งกีดขวางในการเข้าสู่ตลาด และเพิ่มศักยภาพทางการแข่งขันโดยเฉพาะอย่างยิ่งในวิสาหกิจขนาดกลางและขนาดย่อม ซึ่งเป็นตัวขับเคลื่อนเศรษฐกิจหลักของนานาประเทศ อย่างไรก็ตามการเปลี่ยนแปลงวิถีเดิมในการประกอบธุรกิจไม่ใช่เรื่องง่ายและยังเป็นงานที่สลับซับซ้อน แต่ก็ยังมีผู้ประกอบการรายใหม่จำนวนมากที่สามารถใช้ประโยชน์และโอกาสใหม่ของเศรษฐกิจดิจิทัลนี้ ซึ่งไม่มีสำหรับผู้ประกอบการในยุคก่อน ในขณะที่เดียวกันกับการเปลี่ยนแปลงพฤติกรรมของผู้บริโภคในทางที่สนับสนุนการดำเนินธุรกิจดิจิทัล แต่ทว่าม้งานวิจัยจำนวนมากได้พบว่าวิสาหกิจขนาดกลางและขนาดย่อมยังประสบปัญหาจากการนำเทคโนโลยีสารสนเทศมาใช้ในกระบวนการทางธุรกิจ ด้วยเหตุผลนี้ งานวิชาการชิ้นนี้ผู้เขียนมุ่งที่จะแสดงให้เห็นถึงปัจจัยที่มีความสำคัญต่อความยั่งยืนของวิสาหกิจขนาดกลางและขนาดย่อมในยุคเศรษฐกิจดิจิทัลรวมถึงความสามารถในนำปัจจัยเหล่านี้ไปประยุกต์ใช้ในธุรกิจต่างประเภท และสร้างความตระหนักถึงความสำคัญของการนำเทคโนโลยีสารสนเทศมาใช้ในกระบวนการทางธุรกิจ โดยงานวิชาการนี้ได้พบว่าผู้ประกอบการจะต้องคำนึงถึงส่วนประสมของปัจจัยต่างๆอย่างเป็นสำคัญ เช่น ปัจจัยด้านองค์กร ปัจจัยส่วนบุคคล และ นวัตกรรมขององค์กร เพื่อที่จะสามารถดำรงอยู่ รับมือกับภาวะการแข่งขัน ในเศรษฐกิจดิจิทัลต่อไป

คำสำคัญ: ความยั่งยืน วิสาหกิจขนาดกลางและขนาดย่อม เศรษฐกิจดิจิทัล

Introduction

Today, there exist around 25 billion digital devices which are inter-connected across the globe and the number is likely to increase to over 50 million devices in 2020. These connected devices empower people to search information and generate and share ideas and thus create a huge opportunity as a new market platform that attracts a great number of new entrepreneurs into the economy. This promising trend is creating a great impact on most economic sectors owing to its greater competitiveness at a global scale, and it has also formed some ubiquity where geographical barriers and differences in time zones become irrelevant (European Commission, 2014). In this economic downturn, a newly remedial concept like the adoption of digital economy and utilization of the information and technology with small and medium-sized enterprises (SMEs) seem to be increasingly important and becoming a new foundation for entrepreneurs today owing to its cost and time effectiveness and innovation and other competitive advantages, whilst at the same

time remain friendliness to the physical environment and society (Consoli, 2012). These advantages can be shared by many parties in the value chain including suppliers, entrepreneurs, wholesaler, retailer and customers (Brynjolfsson & McAfee, 2012). Indeed, there have been series of transitions in the world economy starting from the term, information economy in 1970, e-economy in 1980, internet economy in 2000, and now digital economy. As it sounds somewhat more universal in its implication, it is also broad in definition. Until now there is no any single definition of digital economy, but the fundamental principles are manufacturing and offering of digital or digitized goods and services that processed by the information technology and available online and/or offline in the global market (Ciocoiu, 2011). Some researcher (Janaratne, 2014) has defined digital economy as the global network of economic and social activities that are enabled by information technologies such as social networking, website and so forth, which provide the new opportunity for entrepreneurs to increase sale, decrease cost, and

remove market boundaries and barriers. Digital economy also includes electronic goods and services that are provided by business people of which the business transactions are done through the electronic channel (Hojeghan & Esfangareh, 2011). Furthermore, digital economy is composed of the digital value creation consisting of e-commerce, online marketing, social media provider and more (Hafkesbrink & Schroll, 2010). This is likely to alter or transform many aspects and mechanisms of the global market space for consumers whose behavior will be shaped by new business models in both developed and developing economic countries. Consequently, the largest economic sector Small and Medium-sized Enterprises (SMEs) have to be prepared for the upcoming changes in the emerging markets with an ability to analyze and handle with the rapid markets and security issues (Oxford Commission, 2014; Avirutta, 2014). Many research evidences have shown a great role of Small and Medium-sized Enterprises (SMEs) entrepreneurs as the economic engine which has contributed in a great extent to the economic growth of many countries (Buculescu, 2013; Sener, Savrul & Aydun, 2014). The definitions of Small and Medium-sized Enterprises (SMEs) slightly vary between countries, but World Bank defines Small and Medium-sized Enterprises (SMEs): A small-sized enterprises would have an average number of employees less than 50, with an annual turnover of less the 3 million US dollars and total balance sheet less than 3 million US dollars, while the medium-sized enterprises would have the average number of employees less than 300, annual turnover less the 15 million dollars and total balance sheet less than 15 million dollars (Buculescu, 2013). Nev-

ertheless, findings have been shown by many researchers (Ghobakhloo et al, 2011; Irjayanti & Azis, 2012; Sener, Savrul & Aydun, 2014) that most of Small and Medium-sized Enterprises (SMEs) still face the problems related to the adoption of digital economy, increasing global competition, technology innovation, financial, marketing, economies of scale, international cooperation, and employees. Therefore, this paper aims to highlight key success factors and provide a guideline, tentative model for Small and Medium-sized Enterprises (SMEs) so that they can cope with the emerging markets as well as highlight some key sustainability factors in the digital economy era. The findings revealed by this paper should be applicable for any size of businesses and thereby create a greater awareness of the advantages of digital economy and sustainability of Small and Medium-sized Enterprises (SMEs).

Literature review

Pros and Cons of Digital Economy to Small and Medium-sized Enterprises (SMEs)

Many literatures have shown a number of advantages when adopting the concept and approach of digital economy. In a digital economic market, a lot of cost and time effectiveness involved in the business processes and these helped entrepreneurs to lower their marginal cost, fixed cost, and also minimize the barriers of entering into the market. This, in turn, helped increase the number of the entrepreneurs in the market because there were, as a result, more job creation and higher employment rate and thus helps promote the distribution of income in the economy. In

addition, this even encouraged some larger size companies to downsize their businesses and processes - that is, more flexible and less hierarchical. Moreover, it could support the general public to start up some low cost businesses as an alternative to their full time jobs which helps generate more incomes and revenues. With the digital platform, the entrepreneurs can work at their convenience in terms of location and time. It has broken away from the traditional business norm because the businesses in the digital economy is virtually borderless because it allows to collaborations in different continents, and ubiquitous environments. Accordingly, the digital economy will continue to transform the economy in terms of productivity and connectivity, especially for Small and Medium-sized Enterprises (SMEs) (European Commission, 2014). The adoption of digital economy has not only interested the young generation of entrepreneurs, but also the older ones. These was supported from the study of Akhtar, Azeem and Mir (2014) who have shown that Small and Medium-sized Enterprises (SMEs)'s business processes and decisions become positively affected by the Internet and Information Technology adoption; it could also provide an opportunity to Small and Medium-sized Enterprises (SMEs) by bridging the gap among different markets, industries, competitors and partners in an economical way. Moreover, it poses some significantly positive impacts on the product development, market development and market penetration strategies for Small and Medium-sized Enterprises (SMEs). It was revealed that the was some positive impacts on business process in the sale, marketing, advertising, manufacturing and customer support sections (Jahanshahi et

al, 2011). Although businesses in the digital economy were less in visibility and tangibility, it is increasingly constructing a huge amount of support to the economy, hence Small and Medium-sized Enterprises (SMEs) could create countless new ways of running a business in the economy (Brian, 2011). However, every coin has two sides. Moving to the new digital economy era could create major opportunities, but also represented the major risks for those who do not adopt and cope with the change in many aspects such as business processes (the Laggards as defined by Kotler and Keller (2015)). On the other hand, digital economy adoption could increase a significant growth in the productivity because the entrepreneurs could achieve the same level of outputs from fewer parties and people: that is, more efficient and competent. This implies that workforce in the digital economy will have to be internet and digitalization literate, should they not wish to be obsolete from the digital economy era (Brian, 2011). But still, employment opportunities and income would also become more unequal because technological advances have favored some skill group of employees over others. In this regard, a person's technological skill, information technology literacy and organization have to keep up with the rapid change in information technology (Brynjolfsson & McAfee, 2012). Although many jobs may disappear due to the automation of routine jobs done by modern machines, technologies and certain skill groups may be favored over others. Subsequently, there has been an increase in information technology investment because firms believe that they can benefit from scalability and cost reduction ability that the technology can offer. However, although

the digital economy will create new potential for economic growth, research also showed the side effect on social and economic situation that there would be an intense increase in competition to traditional businesses. Moreover it could create the social problem through digital divide, social isolation, and privacy (Marzangouet et al, 2014).

Small and Medium-sized Enterprises (SMEs)'s sustainability factors

As aforementioned earlier, in the digital economy era, the information system has become an integral part of SME's operation which can increase the new opportunities to create new products and services. To go about this, entrepreneurs have to consider some key sustainability factors in using the strategies for their businesses, keeping track and monitoring all of their organizational resources and business activities. There needs to be some plan that can effectively allow quick and smart decision making: this is the primary concern for SME businesses. The information technology could satisfy this requirement and act as a spawning ground for innovative strategies that enables the businesses and thus keeps up with the fast changing business in the dynamic market situation (Nowduri, 2014). There have been many small and medium-sized enterprises (SMEs)'s influential factors on the entrepreneur's success and sustainability. These may be classified into the following categories: entrepreneur characteristic, strategy, management and know-how, business process, products and services, customers and markets, resource, finance, external factors and technologies. On the other hand, the significant failure factors have been: lack of managerial

expertise and inadequate employee, quality failure, shortage of financial resource, poor economic conditions, lack of institutional support, lack of co-operation and networking and lack of technical competencies (Ensari & Karabay, 2014). There is a support by the research in the European Union that survival determinant depends upon scale (size and growth), financial (cash flow, debt and risk), economic situation (interest rate and GNP) and technology intensity (R&D) (Nunes & Serrasqueiro, 2012). This is in line with a research in Thailand: Although Thai SMEs account for more than 70 percent of total companies establishments, they still face many challenges and constraints: (1) difficulties in obtaining necessary funding from financial institutions and government agencies and most of them are still granted with relatively high interest rate, (2) lack of human capital especially professional and competent workforce, (3) high level of competition from multinational corporations (MNCs) and countries with high level of economies of scale like China, (4) lack of access to update technology for more efficient and productive business operation, and (5) lack of financial transparency and R&D. It is premised that these might be solved by considering an implementation of new networking, forming strategic alliance, or counter trade as an option (Chittithaworn, Islam, Kaewchana & Yusuf, 2011).

Organizational Factors

Although information technology has become undeniable for small and medium-sized enterprises (SMEs) daily operation of organization, there still exist failure and dissatisfactory support for SMEs regarding poor organizational structure and cooperate culture, budget lim-

itation, limited entrepreneurial strategies, and insufficient knowledge and skill (Ghobakhloo et al, 2011). Even SMEs has contributed a great deal to the economic development, they still face a lot of unique challenges which are uncertainty, rate of innovation and adoption, order situation, law, financial constraint, taxation, employee's issues, lack of experiences and lack of coordination. Another important concern is the lack of research capability to take substantial risk and other advantage of expansion to commercialization (Katua, 2014). For entrepreneurs, it was very important to acquire knowledge about peculiarities and adjust to digital economy's market behavior of different generations of consumers and/or end-users, should SMEs wish to operate successfully in the digital economy market. They also need to understand the changes and challenges in the foreseeable future of the digital economy. The entrepreneurs have to understand profoundly about the social, communication and business platforms together with the digital economy's business model which may be composed of the market, customer, service and cooperate organizations (Sceulovs & Gaile-Sarkane, 2014). Nevertheless, some SMEs are becoming more aware of and have basic understanding about the social networking technology. They anticipate likely a huge impact on entrepreneurship, initiative, innovation, change of attitude, and culture. Social networking technology could create brand awareness, develop initial level of trust, increase sales revenue, influence customer purchase decision an increase profit (Kadam & Ayarekar, 2014). The information technology adoption of SMEs manifests its necessity amongst SMEs that it would generate an economic growth and also increase

the complexity of the production process that could increase functional complexity of enterprises and thereby makes it more competitive and adaptable in the context of digital economy era. Furthermore, the adoption and development of information technology enables enterprises to overcome many obstacles and sustainable economic development (Martin, Ciofica & Cristescu, 2013). There are also outside threats faced by entrepreneurs that have not been very manageable. This was evident in some research that SMEs faced many business barriers which were competition barrier, financial accessible, price of energy, change in technology, fluctuate production cost, economic factors, management skill, business process, limitation of sales and raw material. Therefore, many solutions are being expected by SME entrepreneurs and these solutions should be provided by the stakeholders especially the government in order to increase their competitive advantages in the global market (Irfayanti & Azis, 2012). Both organizations and individuals are required to have some competences which are skills, experiences and capabilities. In addition, organizational readinesses which are opened culture, effective process and structure, collaborative capability both inside and outside should be integrated (Hafkesbrink & Schroll, 2010).

Personal Factors

In the future, the majority of business transactions will be performed electronically which may offer companies all necessary marketing and communication tools, though not all the companies can leverage on these availabilities to increase competitiveness and productivity (Sceulovs & Gaile-Sarkane, 2014).

In particular, Small and Medium-sized Enterprises (SMEs), when the competition, market, customers and suppliers put more pressure on entrepreneurs hoping to change the organization's existing core procedures, entrepreneurs often initiates some information technology projects as a first option to deal with the situation. The most important factors deal with knowledge, adequate experience, skill, confidence and motivation to move towards the digital environment. Many research evidences showed that suitable and skilful use of modern technologies can contribute to a significant development of SMEs (Haug, Perderson & Arlbjorn, 2011), it was also supported form a research in Belgium that lack of knowledge, skill, time, and effort does matter with regards to the adoption of digital economy. Research from Vongchavalitkul, Singh and Neal (2003) who studied the role of individual and organizational factors in the adoption and use of new technology in Thailand, has shown that personal's level of computer literacy, perception and attitude towards the new technology have significant positive relationships with the adoption and use of new technology. Although the information technology are advanced in the pattern, recognition and complex communication, humans still hold a solid ground in many physical, semi-skilled, or unskilled jobs, whereas upcoming jobs would require many advanced mental abilities as well as the need to create some relationships with their partners. As a result, SMEs' employee skills must be developed and supporting organizations will have to work hard to keep up with latest technological employment (Brynjolfsson & McAfee, 2012). This is related to an individual learning mechanism and effective

use of knowledge which involves the ability to recognize and process knowledge applicable to the commercial end and thus would help entrepreneurs emerge into the digital economy market (Hafkesbrink & Schroll, 2010). To achieve this, the development of technology, especially information and communication technology (ICT), would require an appropriate level of quality, qualification and ability to adapt to change in human capitalization. For the quality and qualification to cope with the globalization, each individual is required to have the following factors which are: knowledge of foreign languages, knowledge of relevant computer application, and creativity and ongoing education. These should supported by the organizational policy, structure, culture and technology. Thus, the development of human capital is inseparable from the development of digital economy (Ghobakhloo et al, 2011; Czarniewski, 2014).

Innovational Factors

The competition in this digital economy is innovative in nature rather than price-centric (European Commission, 2014). With the rise of the new economy's business model, allocation of resources are prioritized for innovative enterprises than previous recipients. The important key drivers of the stock price, revenue and profit increases of these companies are the type of innovation that could produce higher-quality and lower-cost products (Lazonick, 2010). Since entrepreneurs are the ones who offer products and services to the market, they should bring about changes through various innovative ways particularly the new development or refinement including products and services innovation, marketing innovation, organizational

innovation and innovation of the technology. This requires creativity and knowledge which may be driven by academic institutions, innovative enterprise and government (Kruja, 2013). The solution may involve some organizational innovation: co-inventing the organizational structure, process and business models, and investment in complementary human capital such as education and skill required (Brynjolfsson & McAfee, 2012). Innovation needed to be equipped with necessary knowledge and skill to address complex issues forthcoming in the next century with special reference to digital economy. Innovative entrepreneurs are mostly needed because they can recognize, draw attention and ensure the effective utilization of novel products and the ideas that can play an important role in the fluctuating economic situations (Mayhew et al, 2012). The individuals' attitudes towards changes and perceived benefits of innovation in relation to organizational structure, financial resource, technology resource and external pressure from competitive pressure are the importance factors that influence the organizational innovativeness (Oliver & Martin, 2011). This was supported by the study of Gallardo and Scammahorn (2011) who studied the difference between innovative and non-innovative entrepreneurs across USA in Arkansas, Louisiana, and Mississippi. They discovered that there was a significant relationship between educational level and innovative entrepreneur, of which the relationship was positive with innovative entrepreneurs and negative with non-innovative entrepreneurs: a higher educational level was important for innovative entrepreneurs due to the nature of their businesses while a higher education may not be needed for non-innovative entrepreneurs

(Gallardo & Scammahorn, 2011).

In 2013, the study conducted with Small and Medium-sized Enterprises (SMEs) in Spain showed that there was a positive relationship between innovation and economics situation both expansion and recession. This implies that it is very important for SMEs to incorporate innovation into their organizational strategies in their companies. In this light, entrepreneurs who adopt innovation are likely to have better market positioning, competitive advantages and better financial performance, also better in investing on the delivery of new products and services and are more likely to achieve sustainable success in the market (Tripathi & Siddiqui, 2012; Guijarro, Lema & Auken, 2013). However, a qualitative research from Australia showed that level innovation could increase by using external source knowledge, but most of SMEs did not fully embrace the advantage of using technology to import new knowledge from external environment. The main reason is that there was a lack of technical knowledge and skills due to shortage of trainings provided for SMEs and, as a result, innovation could not be fostered (Bosua, Evans & Sawyer, 2013). An innovation can enable SMEs to respond to opportunities presented by the digital economy, but there is a growing gap between innovation expectation and performance of Small and Medium-sized Enterprises (SMEs). This gap results in the potential for reduction of performance and less sustainable competitiveness in the digital economy (Janaratne, 2014). To overcome this, SMEs must embrace open innovation and develop their organizational competence in order to achieve competitive advantages. SMEs could grow faster and succeed in the

digital economy, if they devote themselves to developing their innovation capabilities by creating new business models addressing new opportunities.

Other Related Factors

The study from Botswana has revealed that, on one hand, the majority of entrepreneurs have adopted the digital economy: they would like to gain competitive advantages after having faced some outside pressure from the customers and suppliers. On the other hand, the majority of entrepreneurs have not yet opted to digital economy because they do not consider that digital economy suits the nature of the firm's business and the question of innovation usually derives as time goes by within the firm and also a bandwagon effect rather a butterfly effect. At its infancy stage, most of Small and Medium-sized Enterprises (SMEs) enjoy the advantage of digital economy for online payment, advertising, communication and servicing their customers but sale and delivery of digital goods are not widely used and offered by SMEs, and yet the obstacles are security challenge, risk, slow internet speed and implementation cost (Olatokun & Kebonye, 2010). Support from another researcher shows that SMEs have embarked on the digital economy platform particularly on the e-commerce platform involving e-SMEs and e-banking providers whose business transactions and telecommunications are well supported by service providers with a good network infrastructure at reasonable prices (Astuti & Nasution, 2014).

Furthermore, personal level of trust was also another important role that positively attracted the adoption of the digital

economy. Most of the customers may not purchase unless they trust the seller in the digital market. On the other hand, they will become the potential buyers if they trust and have established some positive relationship with the sellers. Entrepreneurs can increase the trust of the customer by giving clear and accurate information of products in order to clear the customer's confusion and ambiguity in the information; also to protect the customer's confidential information (Abbasi, Bigham & Sarencheh, 2011). Another study in Tanzania has shown that, beside the national policy that significantly has an effect on both perceive ease of use and usefulness, technology infrastructure also has the significant relationship to trust that is very important to decision to involve in a digital economy transaction (Makame, Kang, & Park, 2014).

Conclusions and Discussions

Achieving sustainability of small and medium-sized enterprises (SMEs) in a digital economy era would depend upon various factors which are organizational factors, personal factors, and innovation and external threats that cause some difficulties and unmanageable challenges. These influential sustainable factors were also evidence for many researchers in many countries. Information technology readiness of companies, proactive role and support of government, perceived benefit of information technology and external pressure, are raising consumer expectation. These factors can pose as a set of emerging pressures to the SMEs and thus they have to start innovating and quickly respond to the economic situation as well as trends and changes. For Thai SMEs, since the government of Thailand provides-

many supports for SMEs sectors by providing a seed funds for the start-up businesses, set up many incubator projects and simplifies the regulatory (Rojsurakitti, 2015). Thus, these could create a good spawning ground for new SMEs and reducing administrative and financial burdens. Therefore SME entrepreneurs need to select and set their priority factors to manage changes and take advantages of new opportunities and sustainable success in the digital economy era.

For further study, it is interesting to apply the sustainability factors studied in this research to some start-up companies in the University Business Incubators (UBI) in order to identify some significant factors from the students who would like to set up their businesses and propensity to become an entrepreneur rather than a full time employee in the company.

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