

Chapter 9

Exploring E-Business in Indian SMEs: Adoption, Trends and the Way Forward



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Abstract We identify the key factors that influence the adoption and use of E-Business technologies by small and medium enterprises. Amongst the key influencers are owner-manager characteristics, technology factors, organizational factors and institutional influences. While the capabilities of technologies are an important driver, the other influencers play a key role as well. Owner-managers are the key facilitators. Organizational readiness reflects a firm's technological capabilities. SMEs also adopt technologies due to the pressure exerted by their key customers, competitors, government regulations, industry standards or suppliers. These institutional pressures are classified as mimetic, coercive and normative. Mimetic pressures cause SMEs to react to competitors' actions. Coercive pressures are those exerted by firms on which the SME is dependent. Normative pressures arise from the need to keep up with industry standards. We analyse these factors in the context of a rapidly growing E-Business sector in India.

Keywords E-Business · Institutional Influences · SME · Owner-Manager · Organizational Readiness

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9.1 Introduction

Businesses can reap significant benefits by adopting E-Business practices catalysed by modern technologies. It will help transform business models, gain competitive advantages and help reach out to a wider market. However, there seems to be little evidence that SMEs (*small and medium enterprises*) have used E-Business practices beyond basic functionalities like email. Two tectonic changes in the Indian economy will act as catalysts in the adoption of E-Business practices and technologies. One was the sudden demonetization of certain currency denominations. This caused a temporary shortage of physical currency forcing large-scale adoption of electronic payment modes (Dwivedi, 2016; Dwivedi, Slade, Rana, & Tamilmani, 2016) – almost 86% of cash in circulation was nullified (Rowlatt, 2016). The players in the mobile wallet business were the most profitable as they saw a traffic increase of 435 % and a 250 % increase in overall transactions and transaction value (Chakravorti, 2017). Second is the GST act that came into force from July 2017 with two primary intentions: to enable a transparent tax structure throughout the country and to enable seamless movement of goods and services across India (Nair, 2017). An implication of this is that a robust digital payment infrastructure must be present. It is important for SMEs to adopt E-Business technologies as digital payments can deliver a significant uplift to the profitability and growth for the sector. Improved customer service, cost reduction and the ability to service overseas markets are a few of the many benefits that the SMEs can experience with E-Business technologies.

E-Business assimilation and the resultant digitization of the economy are an important initiative in developing economies. In India, for example, SMEs contribute about 37.5% of the GDP (KPMG, 2017). The benefits of E-Business adoption and assimilation for SMEs are well known. A study of 504 SMEs (KPMG, 2017) in India found that E-Business assimilation leads to a higher profit growth (about two times faster than other SMEs who do not use E-Business), expansion across the country and city boundaries and higher rate of employment (SMEs using E-Business services employed five times more people compared to those that did not).

Even after measures to digitize India, a staggering 68% SMEs have still not adopted E-Business technologies, and these businesses are completely offline (KPMG, 2017). What plagues the adoption of E-Business technologies is a question that needs further investigation and a strong intent from the government to implement such a policy. This chapter looks into some of the key factors that influence the adoption and use of E-Business technologies amongst SMEs and the road ahead.

9.2 Small and Medium Enterprises (SMEs)

There are varying definitions of SME across the world. Definitions of SME can vary from country to country and within the same country. For instance, in a country like India as per the Micro, Small and Medium Enterprises Development Act 2006,

enterprises are broadly classified into micro units, small units, medium units and large units depending on the investment in plant and machinery (Paramasivan & Selvam, 2013).

Different countries use different measures for defining small and medium enterprises (SMEs). Criteria to define SME include employment, investment or sales (Ayyagari, Beck, & Demircuc-Kunt, 2007). Some countries use employment as the measure, and some use this criterion and an additional criterion based on either the value of the firm's assets or the size of the revenues, typically denominated in the local currency (e.g. Nigeria, European Union, India, Malaysia). A notable exception is Cambodia where the revenue is measured in US dollars. With no formal consensus or categorization of what constitutes a SME (Curran & Blackburn, 2000) and with definitions that can change over a period, SME studies have employed varying definitions including employment, turnover and assets.

9.3 E-Business and SMEs

SMEs constitute between 96 and 99% of the total number of businesses in most *Organization for Economic Cooperation and Development (OECD)* countries (Scupola, 2002). The sector is considered as an important source of flexibility and innovation (OECD, 2002). The role of SMEs is further stressed in studies by Bharati & Chaudhury (2009) and Bharati (2010) that highlight that SMEs produce more patents per employee than large patenting firms and these patents are so significant that they are likely to be cited twice as many times as those of the patents of the large firms.

With the Indian economy expected to emerge as one of the leading economies in the world (expected to become a \$5 trillion economy by 2025), there have been a number of initiatives by governments and associations alike to strengthen the backbone of the economy – the SME sector. The sector is touted to be a \$ 25 billion market for emerging technologies by 2020. The SME council set up by NASSCOM and several policy interventions by the government are examples of initiatives to improve the business environment for the sector.

Much of the technology advances in the last two decades have been in the ability to process information and integrate business processes with the help of Internet and web-based technologies (Chen & Dwivedi, 2007; Chen, Papazafeiropoulou, & Dwivedi, 2010; Dwivedi & Papazafeiropoulou, 2009). Technology associated with E-Business practices in particular has enabled e-commerce practices such as online procurement and selling. It is viewed as an important tool in cost reduction, increasing customer satisfaction and building good relationships with business partners. Despite the many benefits, technology penetration has been low in the SME sector. This is particularly true of the Indian SME sector where less than 2% of the small-medium businesses are digitally engaged¹ (KPMG, 2017). E-Business capabilities across the four main aspects of business – communication, intelligence, commerce

¹Digitally engaged: small and medium businesses using digital technology actively to enable business online by either selling on e-commerce websites or advertising online or listing on third-party portals.

and collaboration (Raymond & Bergeron, 2008) – can help reap maximum benefits for the firm.

- “E-communication” refers to the use of Internet and E-Business technologies to promote the firm and its products/services and includes online catalogues and websites designed to communicate amongst employees or with customers, suppliers, vendors and other business partners.
- “E-intelligence” refers to the ability by which the firm can scan its business environment to explore new product-market opportunities and to improve its operations and decision-making.
- “E-commerce” refers to the activities that are transactional in nature, i.e. encompassing all the activities of buying and selling via Internet and web-based technologies.
- The fourth form of E-Business capability is “e-collaboration” that helps the firm to link with its upstream and downstream business partners. It enables the firm in exchange of information with its trading partners and business partners to collaborate in the design and development of products and services through the different stages of their life cycle.

In general, organizations realize increased benefits with higher levels of integration (Daniel & Grimshaw, 2002) because of increased assimilation of E-Business technologies. Limited use or penetration prevents organizations from reaping the full benefits of an innovation, particularly true of E-Business (Eikebrokk & Olsen, 2007). Staged models of adoption of innovations suggest that the organizational assimilation of E-Business technologies follows a sequence of stages that begin with email for communication and progress through transactional processing for online banking and online buying, e-commerce and finally transformation of the organization. Contingent role models have been viewed as a better alternative to staged models and have been used to study technology adoption. Contingent role models are of the premise that E-Business can be approached in many ways depending on the specific business processes as required by the organization (Alonso-Mendo & Fitzgerald, 2005). This perspective assumes that an organization determines the combination of applications that best suits its particular business context and strategy (*ibid*). Such approaches see change as a reaction to market demands and external pressure and not as a predetermined end point as viewed by the staged models.

However, the adoption of E-Business does not guarantee continued deployment or mean widespread or intense use across different business functions of the organizations. SMEs tend to leap over one or several stages in e-commerce adoption (Lefebvre, Lefebvre, Elia, & Boeck, 2005), and some abandon following a short period of adoption despite growing functionality and benefits (Molla et al. 2006). This raises the question if technology adoption follows a linear fashion and affirms that these models do not take into the account the heterogeneity of the sector. It is worth noting that in the context of SMEs, many firms do not progress beyond the initial levels.

The true potential of E-Business technologies can be realized only when firms recognize the need for business transformation and understand all the benefits that E-Business practices can bring about. In the context of SMEs, the owner-manager plays an important role in technology adoption decisions, in addition to forces external to the organization. Increased levels of assimilation are also largely associated with the strategic intent of the firm (Ramsey & McCole, 2005). SMEs may be expending their limited resources to implement applications without a complete understanding of strategic role of the technology within their organizations (Chong & Pervan, 2007). Opportunities for E-Business transformation must be within the context of long-term vision for improved business performance.

9.4 Influencing Factors

A range of factors may affect SMEs' decisions to invest in E-Business technologies. Implementation and successful management of technology and progression occur with the appropriate combination of both exogenous and endogenous factors of the firm (Ramsey & McCole, 2005). Adopting of E-Business practices largely depends on the support provided by the owner-manager of the firm. This support is not merely an approval for adoption or implementation of new technologies but an active support with a long-term vision that will transcend throughout all levels of the firm. The influence from the external environment on E-Business decisions cannot be underestimated. It is imperative that studies include a combination of factors including owner-manager characteristics and technological, organizational and environmental characteristics to investigate the drivers and inhibitors of E-Business in SMEs.

9.4.1 *Owner-Manager Characteristics*

Organizations that scan their business environment for technology-related practices are more likely to adopt and try out innovations. For many SMEs, decision to exploit a new technology is dependent upon how well the owner-manager is aware of the changes that happen in the industry, captures the demands of the customers and interprets and reacts to signals from the technological as well as environmental contexts (Uwizeyemungu & Raymond, 2011). This requires two enabling conditions to exist:

1. Hashim (2007) opines that the decision to adopt technologies earlier or later depends mostly on the IS knowledge of the owner-managers. Owner-managers may not be keen on adopting sophisticated technologies if they are unfamiliar with the basic ones (Reynolds & Bopaya, 1994). Also, their levels of knowledge and experience of IS have a positive impact on perceptions, attitudes and behavioural intentions that would provide the needed push to make use of the technology (Mao & Palvia, 2008).

2. The willingness of the owner-manager to make available financial resources, technical support, employee training, and removal of any other barriers is key to promoting organizational capability. Organizational capability is found to have a significant effect on E-Business implementation success (Lin, 2008), and this wholly depends upon the owner-manager who should develop and nurture a climate that is conducive to learning so that E-Business activities that are initiated can get routinized and accelerate further development.

In short, it is the owner-manager that provides and ensures the “facilitating conditions” (Uwizemungu & Raymond, 2011) for technology adoption and use.

9.4.2 Technological Factors

Technological factors are considered important for assimilation of E-Business technologies. Diffusion of innovation theory (DOI) (Rogers, 1995) identifies five factors as influencing the rate of diffusion of an innovation. They are:

- The relative advantage over present ways of meeting the need
- Its compatibility with the current practices and values
- Its complexity (the degree to which the new technology is easy to use and learn)
- Its trialability referring to adopting the technology on a trial basis if it can be tried out before the actual commitment and implementation
- Its observability indicating as to how well the features of the technology including its benefits can be communicated

All of these five factors have been studied extensively in E-Business studies as the DOI framework encompasses innovations, adoption decision-making processes and the social context in which adoption occurs (Parker & Castleman, 2009).

Since E-Business is a type III innovation (Swanson, 1994), considered to be a continuous process of incorporating e-enablement of business activities thereby bringing organizational transformation, organizational and environmental factors cannot be ignored (Lee & Cheung, 2004). Focusing only on the technological features of an innovation may not be sufficient to explain subsequent assimilation and continued use, especially in the case of E-Business technologies.

9.4.3 Organizational Factors

For an innovation such as e-enabling of businesses, it is important that the organization has the necessary attributes to ensure sustained use after initial adoption. Organizational factors include financial readiness, technological readiness and external support. E-Business technologies provide a wide range of functionalities from online business processes to sharing databases with external partners. Assessing an organization’s readiness becomes much more important when firms

plan to implement E-Business technologies to link with its customers and business partners. Organizational readiness reflects a firm's technological capabilities and is a significant influencer of assimilation of E-Business technologies and practices (Alam, Ali, & Jani, 2011).

9.4.4 Institutional Influences

The influence of the macroenvironment should not be underestimated. Environmental uncertainty does exert some pressure on SMEs to e-enable their business functions. Most SMEs adopt technologies due to the pressure exerted by their key customers, competitors, government regulations, industry standards or suppliers (Chwelos, Benbasat, & Dexter, 2001).

It seems rational to believe that organizations exert influences on each other as they operate in the business environment consisting of other entities (e.g. trading partners, vendors, suppliers, customers, agencies, governments). This is especially true of SMEs that are forced to comply with demands of their larger partners who may pursue different strategies to induce adoption of E-Business technologies.

The three types of isomorphic pressures exerted on organizations are, namely, coercive, normative and mimetic pressures. Mimetic pressure can be attributed to competitors in uncertain environments (Basaglia, Caporarello, Magni, & Pennarola, 2009). Organizations react to competitors' actions to survive and maintain competitive advantage. Mimetic pressures cause the structures and actions of an organization to change over time and adjust to the structures and actions of other organizations, which are at a similar position in the common environment. Competitive pressure has been found to be a significant predictor of adoption of E-Business practices and technologies in both developed countries such as the UK (Daniel & Grimshaw, 2002) and South Korea (Joo & Kim, 2004) and developing countries such as Vietnam (Van Huy, Rowe, Truex, & Huynh, 2012), Thailand (Lertwongsatien & Wongpinunwatana, 2003) and Brunei (Looi, 2005).

Coercive pressure is the pressure exerted on the organization by those on which the firm is dependent. This includes government, professional regulatory agencies (Harcourt, Lam, & Harcourt, 2005), governmental entities, suppliers (Zorn, Flanagan, & Shoham, 2011), customers, parent corporations and other key constituents (Teo, Wei, & Benbasat, 2003). The regulatory environment is one of the important factors of e-commerce adoption in developing countries (Zhu, Dong, Xu, & Kraemer, 2006). The role played by the government and the support extended by governments have been found to significantly influence E-Business technology adoption in developing countries (Sanayei & Rajabion, 2009; Van Huy et al., 2012).

Trading partners could be a dominant customer or a supplier pushing the firm to implement or increase the use of relationship-specific information systems. Adoption of ERP in many manufacturing companies across India and China stands as evidence to pressure from trading partners/parent body. Larger organizations or parent body can exert pressure on its smaller suppliers to follow a specific technology for increased efficiency and to streamline operations. The small sector may become

marginalized and lose business if they do not keep pace with the changes in technology. With suppliers or trading partners already using E-Business practices, there is motivation for the SME sector to make adequate investments needed for adoption and continued use. The impetus for adopting E-Business-related technologies is a combination of choosing to be innovative while maintaining competitive advantage.

Normative pressure can stem from the need to keep up with industry norms, competitor's moves and the fear of being "singled out" amongst peer firms. The need to follow the other firms that use E-Business practices and the need to have a cutting-edge image in front of its competitors and stakeholders push the organization to adopt E-Business technologies. Researchers have termed these phenomena as bandwagon theories (Abrahamson & Rosenkopf, 1993) and theories of fads (Abrahamson, 1991). In short, the need to maintain legitimacy and stakeholder support can lead organizations to adopt E-Business technologies. However, this copying or imitation does not seem coerced by any larger organization or superior power, nor is it conscious. Attitudes, behaviours and practices demonstrated for a long time by most actors in the same social context become so legitimized as the "right" way things are done that individuals often come to believe that these practices and behaviours indicate the "only" way to do things (Jan, Lu, & Chou, 2012).

The decisions of SMEs to adopt E-Business technologies are also largely dependent on the benefits they might obtain. It is important for the user to feel that the technologies are essential to complete a particular task and appreciate the benefits from using them. In addition to the owner-manager being a prime driver, other potential influencing factors are the customers, suppliers, competitors, government and regulatory bodies.

9.5 Lessons for SMEs and Researchers

For technologies to be adopted and diffused, determinants and barriers of technology adoption have to be well understood not only by the owner-managers of firms and governments but also by those who innovate, make and implement such technologies (Oliveira & Martins, 2008). First, the owner-manager of the firm is the driver of change and has to champion adoption of E-Business practices. Second, the greatest benefits of adopting E-Business practices come with a strategic intent that views technologies as an investment rather than a cost.

New research will help shed light on the current E-Business practices, particularly in emerging markets such as India, and provide guidelines on the future development of E-Business technologies. Studies on how E-Business assimilation will help the governments and SMEs to understand barriers of such technology adoption and help understand ways in which such barriers can be removed to pave the way for complete digitization of the economy in the long run. Such studies will help the SME sector to make informed decisions about the "combination" of E-Business applications that are appropriate for them and will help the supply side of E-Business technology companies to customize products to better suit the specific context and business needs of the sector. While noting that there is a significant opportunity in

adopting E-Business technologies by the SME sector, further collaboration is needed amongst researchers, policy makers, supply side of the technologies, SMEs and industry practitioners to bridge the gap. It is also important to explore what role is played by adoption of new technologies and applications such as social media and social commerce (Abed, Dwivedi, & Williams, 2015a, 2015b; Abed, Dwivedi, & Williams, 2016) on E-Business and e-commerce adoption and use by SMEs.

9.6 Conclusion

SMEs form the backbone of a country's economy, especially the emerging economies. A research report published by McKinsey & Company suggests that digital finance alone, which is just one element of E-Business technology, can increase the GDPs of all emerging economies by 6%, which amounts to \$3.7 trillion dollars by the year 2025 (Manyika, Lund, Singer, White, & Berry, 2016). The non-participation of SMEs in e-finance, for instance, results in expensive and scarce credit sources. This affects SMEs' performance and that of the economies that they are a part of. Financial non-inclusion makes the economy as a whole suffer.

One positive sign for assimilation of E-Business practices in the emerging economies is that governments of these countries are now using interventions to expedite the adoption of E-Business and digital technologies using both mandatory and persuasive methods. In India, the government is implementing mandatory and voluntary efforts to digitize businesses especially in the SME sector. Amongst the non-mandatory procedures are training students in digital and E-Business skills, awareness campaigns and easier tax filing procedures, thus making it easy to access government services.

As SMEs begin to see the benefit from this initiative, the adoption of such practices and technologies will only accelerate.

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