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Towards a framework for better decision-making in small businesses

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Abstract

Small businesses play an important role in today's market economy. The success of small firms is largely dependent on the strategic decision-making processes that are employed. In this context, information technology (IT) has a critical role to play. It provides ready to use, end-to-end solutions and allow small businesses to focus on their core business. Recent innovations in IT have positively impacted businesses. With the emergence of web services, the convergence of telecom and computing is finally reaching maturity in a unified platform for doing business in the 21st century. Business enterprises have invested heavily in information technology and the benefits have been well documented. However, there is still a dearth in the current literature that analyzes how this digital technology can help small businesses. This paper seeks to fill this gap and proposes a framework that helps in choosing the appropriate strategic decisions for small businesses. It is essential that business processes are identified based on their cost, complexity, and criticality and then reengineered and automated based on analyzing the domain specific data.

Keywords: information technology, strategic decision-making, business process reengineering, small businesses

Introduction

Small businesses play an important role in today's market economy. The success of small firms is largely dependent on the strategic decision-making processes that are employed. In this context, information technology (IT) has a critical role to play. It provides ready to use, end-to-end solutions and allow small businesses to focus on their core business. Recent innovations in digital technology can play a significant role in spurring the growth of small businesses. Small and medium scale enterprises account for more than 90 percent enterprises in most OECD (Organization for Economic Cooperation and Development) nations and provide about 80 percent of economic growth (Scupola, 2009). Significant research shows that these businesses contribute to economic growth in multiple ways. Their presence in an economy leads to more competitive large enterprises that can outsource some of their activities to smaller firms. Compared to their relatively small sizes, they create more jobs than large firms (Passerini, 2012). Smaller size is an advantage, particularly in terms of the ability to anticipate and respond to changes and achieve a deeper and closer interaction with the customers.

Information is an important asset that gives small businesses a competitive advantage in the new economy. Information access plays a critical role in the informed decision-making process, making it easy for these businesses to make good competitive decisions (Modimogale, 2011). The ability of small businesses to survive in an increasingly competitive global environment is largely predicated upon their capacity to leverage information as a resource (Akpan, 2020). In today's fierce competitive environment, small

businesses need to be highly responsive and adaptive to demands of customers, actions of competitors, and changes in economic conditions (Rashaniphon, 2011). Digital technology is constantly evolving which raises two issues. On the one hand the small businesses need to monitor the kind of technologies that their clients are using and try to make sure that they are ready to serve them. On the other hand, the small businesses do not need to change every time there is a change in technology as this depends upon the focus area of the small businesses. The competitiveness of a small business depends on the way in which digital technology is used to support business processes. Using the appropriate digital technology depends on many factors such as the state of the competition, the type of the small business, and the business process that needs to be modified. The major motivation for this research is the need for a framework that will help small businesses choose appropriate decisions regarding which digital artifacts they have to use to improve their performance.

This paper is organized as follows. First, we briefly describe the current scenario pertaining to small businesses. This is followed by a discussion of a framework that will help small businesses to make better strategic decisions. Some relevant research findings are provided in the subsequent section. Concluding remarks form the last section.

Small Businesses

Even though the economic importance of small and medium scale enterprises has been known, they were considered comparatively unimportant during the great Internet boom during the 1990s and early 2000s (Passerini, 2012). Use of broadband information technology required extensive investment in technological assets and a long-term access to capital. Such capital requirements were not available to small businesses. Today small businesses can compete and excel due to continual improvements in Internet technology as well as breakthroughs in cloud computing and mobile connectivity.

Access to capital and an established brand name are the main advantages of large organizations. One of the greatest advantages small businesses have is flexibility. Many small businesses have a single owner who is free to change policies, and technologies (Sadowski, 2002). For example, the owner of a small grocery store can decide to use broadband to create an automatic reorder system with suppliers. Small businesses can offer new services and change internal processes without having to clear a multitude of committees that would exist in a large organization. Cloud computing, and open-source software have brought down the investment requirements and costs. This has resulted in the availability of broadband technologies to small businesses to streamline business processes, grow the customer base, and enlarge existing offerings.

Growth → / *Innovation* ↓	*Low*	*High*
High	Constrained	Glamorous
Low	Core	Ambitious

Figure 1. Kirchoff's Typology of Small Firms
[Adapted from Passerini (2012)]

According to Kirchoff's typology (Kim, 2004), small firms can be classified based on two dimensions: innovation and growth as shown in Figure 1. Core firms represent where innovation and growth are low, whereas Glamorous firms have innovation and growth at a high level. Constrained companies have low growth potential but high innovation potential. Ambitious firms have high growth potential but low innovation potential. This paper mostly focuses on Core firms. Mills (2015) classifies small businesses based on types of firms – whether they are sole proprietorships, B2B, etc. – as indicated in Figure 2. Most

of the Core small businesses are either sole proprietorships, or local businesses serving consumers and other local businesses. Lower costs of Information Technology (IT) deployment, mobility advantages supported by broadband, and an IT services support system (now directly available as-a-service) can help the more IT conservative small firms (such as 'core' as indicated in Figure 1) to transition to the new mobile apps (Passerini, 2012).

Types of Firms	Number of Firms	Description
Non-Employee Business	23 million	Sole proprietorships
Main Street	4 million	Local businesses
Suppliers	1 million	Suppliers to other businesses
High-Growth	200,000	Fast-growing, innovation-driven businesses

Figure 2. Types of Small Businesses [Adapted from (Mills, 2015)]

There is a lack of knowledge about the potential benefits of information technology and strategies to support small businesses in achieving their business objectives. Small businesses face the challenge that generally they are owner managed and the owner makes all or most of the decisions about the business (Fillis, 2004; Spencer, 2006). Unfortunately, owner-manager's limitations become limitations of the business. Information technology needs to be considered a key player for the small business in reaching its goals. As information technology is perceived to be expensive by small businesses, they often do not budget for it. The other problem with regard to the cost of IT is that small businesses may invest in unnecessarily big solutions due to sales pitches, hype of specific products or market patterns without considering their real need (Grandon, 2004).

With reference to small businesses, applications suitable for blockchain technology can be studied under the following three categories: 'Creating Unbreakable Contracts,' "Safer Data Storage for an affordable Price,' and 'Reduced Complexity in Supply Chains' (TechHQ, 2019). Businesses deal with contracts on a daily basis. Blockchain can fill up this part of business by creating smart contracts. As the name suggests, smart contracts are self-executed, coded agreements that deliver guaranteed outcomes if the predetermined conditions are met. The significant difference from paper contract is that smart contract is digitized and that it cannot be tampered with in any way because it is in a blockchain.

A Framework for Better Decision-Making

We propose the following integrated framework for better decision-making in small businesses consisting of the following four steps:
Step 1: Business Process Reengineering
Step 2: Focus – Dominance Modeling
Step 3: Problem Variety – Solution Process Analysis
Step 4: Integrated Approach

Step 1: Business Process Reengineering
A key component of strategic decision-making in small businesses is the ability to correctly evaluate the need for making changes in the existing business processes. Business process reengineering (BPR) began as a private sector technique to help organizations to fundamentally rethink how they do their work in order to dramatically improve customer service, cut operational costs, and become more competitive (Bogdanoiu, 2014). A key stimulus for reengineering has been the continuing development and deployment of sophisticated information systems and networks. BPR involves changes in structures and in processes within the business environment. Redesign, retooling, and re-orchestrating form the key components of BPR that are essential for an organization to focus on the outcome that it needs to achieve. These stages

have key steps as indicated in Figure 3. The BPR technique implements organizational change based on rapid change, employee empowerment, and training and support by information technology.

REDESIGN	RETOOL	REORCHESTRATE
●Simplify ●Standardize ●Empower ●Measure	●Networks ●Intranets ●Extranets ●Workflow	●Processes ●Information Technology ●Human Resources

Figure 3. The 3 Rs of Reengineering

The entire technological, human, and organizational dimensions may be changed in BPR. Information technology plays a major role in business process reengineering as it provides office automation, it allows the business to be conducted in different locations, provides flexibility in manufacturing, permits quicker delivery to customers and supports rapid and paperless transactions (Dowson, 2015). In order to implement BPR to an enterprise, the following key actions need to take place:

- Selection of the strategic processes for redesign,
- Simplify new processes – minimize steps – optimize efficiency – modeling,
- Organize a team of employees for each process,
- Organize the workflow – document transfer and control,
- Assign responsibilities and roles for each process,
- Automate processes using information technology,
- Train the process team to efficiently operate the new process,
- Introduce the redesigned process into the new organizational structure.

Here are some guidelines that are especially relevant to small businesses (Mansar, 2007):

- Read the market for your business clearly by SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis,
- Develop a strategy that optimizes cost, quality, time, and flexibility,
- Execute the developed strategy by strengthening the processes identified for reengineering and without interfering unnecessarily.

Step 2: Focus – Dominance Modeling

Strategic Focus → *Customer Dominance ↓*	*Cost*	*Value Added*
Low	Coordination	Repositioning
High	Efficiency	Collaboration

Figure 4. Focus-Dominance Model
[Adapted from Levy (2001)]

Small businesses can leverage information technology (IT) in two different ways. One way is to enhance operational support and transaction processing activities. Small businesses adopt and use simple IT innovations without any form of planned strategy to integrate other aspects of business (Qureshil, 2009). In this approach, any form of IT-based competitive advantage is accidental rather than planned. The second way is typically taken to use IT to improve interaction and relationship with customers. A majority of small businesses depend on a small number of customers who purchase large amounts of goods and services. These major customers influence the price of goods and services provided by small businesses. Close relationships among small businesses and customers enable these businesses to respond quickly to any change in customer requirements.

Levy (2001) has proposed an analytical framework that incorporates both forms of strategic focus. In this Focus-Dominance Model (Figure 4), customer dominance is compared with strategic focus. This framework provides four different strategies to IT adoption. The "Efficiency" quadrant consists of small businesses that exploit simple systems such as word processing and spreadsheets. The "Coordination" quadrant consists of small businesses that have a need to increases market share and their customer base. The "Collaboration" quadrant indicates those small businesses that attempt to incorporate emerging technologies to manage relationships with major customers. The "Innovation:" quadrant consists of those businesses that actively seek to adopt new IT innovations to achieve competitive advantage.

In a follow-up study, Levy (2002) investigated 43 small businesses to observe their positions in the Focus-Dominance Model. The results revealed that most of the small businesses make only one move, from "efficiency" to "coordination" or from "efficiency' to "collaboration." Small businesses taking either one of these paths tend to avoid losing control and stay within their current markets. It was also observed that only 17 out of the 43 small businesses wanted to move to the "innovation" quadrant perhaps due to environment scan that indicated possible business growth.

Step 3: Problem Variety – Solution Process Analysis
Andersson and Sandlund (2010) have characterized the decision-making process based on problem variety and solution process as indicated in Figure 5.

Problem Variety → / *Solution Process* ↓	*High*	*Low*
Unanalyzable	(4) Construct	(2) Judgment
Analyzable	(3) Program	(1) Routine

Figure 5. Characteristics of Decision-Making Process
[Adapted from Andersson and Sandlund (2010)]

Decision-making to solve problems at the operational level, where problem structuredness is high and problem variety is low, are represented in Quadrant 1. Quadrant 2 indicates problems that can be easy to recognize but have a rather difficult solution process. These problems are not easy to analyze, and solution is based on judgment of the decision maker. There are other types of problems where the solution process can be broken into subprocesses and be analyzed. Such problems are represented in Quadrant 3. In addition to these three types of problems, we also encounter problems that exhibit a high degree of variety and not easy to analyze. These are grouped in Quadrant 4.

Step 4: Integrated Approach
The results of the analysis done in the three previous steps are integrated in this step. Strategic decisions that are required to be taken in small businesses are viewed through the three different lenses as indicated in the earlier steps and then, optimal decisions are taken.

Research Findings

In this section, we summarize the results of two business surveys conducted by the U.S. Chamber of Commerce in January 2018 (U S Chamber, 2018). The first survey consisted of a national poll of 1,000 small businesses and 50 state-level polls of 100 small businesses. The second survey was a national consumer poll of more than 5,000 adults on the perceived benefits of digital platforms. Examining the use of digital platforms as a whole in the United States, the national survey finds that the use of digital platforms by small enterprises is ubiquitous:

- 84% of small enterprises are using at least one major digital platform to provide information to customers;
- 80% are using at least one major platform to show products and services, as well as to advertise;
- 79% are using digital tools to communicate with customers and suppliers, and
- 75% are using tech platforms for sales.

The national survey also revealed the importance of digital skills to managers in small businesses when hiring:

- 62% of small businesses surveyed stated that digital and social media skills are an important factor when hiring; a higher proportion reported this as a more important consideration than where a candidate attended school.

Even in a country with nearly universal Internet access, American businesses still view the cost of Internet services as a constraint to building an online presence: 55% reported that the cost of Internet and connectivity is a challenge. On the skills side, 57% of small businesses surveyed said that lack of familiarity with the digital tools available is a challenge. This finding suggests that even if a business obtains Internet access, it can be hard to know which tools to use. Recruiting skilled employees is a challenge for 61% of small businesses surveyed by the U.S. Chamber of Commerce in January 2018. Even when owners are able to successfully launch their businesses, they still have difficulty finding employees to expand operations.

One advantage to digitization is the ability to buy and sell across borders at a low cost. Of the small businesses surveyed, 27% reported selling goods or services to another country, a substantially higher proportion than the national proportion of U.S. firms that export. Yet, many small businesses are reluctant to trade internationally. When asked whether they think export activity is an important business activity, less than half of respondents stated that they believe that it is important to sell to other countries. Looking only at businesses that do not report exports, 43% said that they do not think there is demand for their goods and services in other countries, and 40% said that international exporting is too expensive.

Conclusion

Small businesses can benefit from using techniques made available by emerging information technologies. New technologies are paving the way for new market creation. As a direct result of this, we have seen new small businesses emerging to cater niche markets as an alternative to impersonal commercial companies. Business process engineering and business data analytics have been used successfully in the corporate world. However, using these techniques for small businesses poses some problems. The basic building blocks of IT implementation consist of digitized versions of interactions among various business processes.

In this paper, we have presented a framework that can identify and categorize the different types of business processes/transactions and provide a framework for better decision-making. Restructuring these processes and then automating them in a systematic way as suggested in this paper affords a practical approach to leverage information technology. Monitoring the critical success factors will help in evaluating the success of these measures. Future work in this area focuses on developing a comprehensive framework that will enable entrepreneurs and researchers to point out the potential priority areas that need to be automated first and also yield a realistic estimate of resources needed to achieve such transformation. In addition, such an approach will also help in giving a better insight into process restructuring.

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