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A Study on Effective and Efficient IT-Based Financing Decisions

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Abstract. This paper attempts to examine and describe the role of information technology in financing decisions via opportunities and challenges. The authors note the dearth of literature and studies concerning this specific issue. The role of information technology is examined relative to decision making from a dual perspective of lenders and borrowers; financing services companies and business ventures or corporations. The authors view technology in its mediating and intermediating roles as systems are developed to identify relevant data and information and to analyze and share or exchange information in determining risks for lenders and creditworthiness of borrowers in the global market for venture financing. Furthermore, technology and its platforms are seen as marketing tools for financing companies functioning and competing in a global financing market where alternatives sources of funding such as crowdfunding are being popularized through social media and other types of communications tools.

Keywords: Financial planning, Financial management, Financing, Information technology, Investors, Invisible asset.

1 Introduction

The information society with knowledge as the most important invisible asset (Drucker, 1959) as envisioned by legendary management teacher Peter F. Drucker has long been ushered in and has created numerous opportunities, transformations, and challenges across every institution of mankind and society. Technology which is the bedrock for the monumental changes we have seen in the last almost six decades since Drucker's writing of his book, *The Landmarks of Tomorrow*, has affected every aspect of management and institutions, from planning and operations to financing decisions. The intersection of information technology and its impact on modern financing in terms of opportunities and challenges has received little attention in the literature on both technology and finance. However, part of the challenges of 21st century management that Drucker (1999) communicated was how organizations

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would effectively leverage information technology systems in managerial activities, roles, and functions. As financing activities represent one of the key functional activities of management (Krajewski & Ritzman, 2001), it is reasonable to assume that the integration of information technology into organizational structure, systems, and processes would invariably affect how leaders and managers go about financing activities including financial planning, financial management, and overall financial decision making. Furthermore, it is also reasonable to assume that technology has emerged to play a key role in the dissemination and allocation of financial resources and identification of financing opportunities in the global society spawned from greater interconnectedness as a direct result of technological advances in adjoining areas such as communication, transportation, and trade.

1.1 Opportunities and Challenges of Information Technology

It is uncertain why the role of technology or information technology in financing, whether looking at challenges or opportunities, has been so under-researched and scarce in much of business and management literature. Dr. Rebecca Abraham, Professor of Finance and Economics at the Huizenga College of Business and Entrepreneurship, Nova Southeastern University, has expressed that the minimal role technology plays in financing decisions may due to the interpersonal nature of financing decisions as leaders and executive management in organizations negotiate and necessarily make decisions with information technology playing assistive rather than direct roles in many cases. That is, information technology does not make decision regardless of its contribution that has become more obvious over the last few decades. Much of the research one will encounter focuses on financing technology or venture-capital financing rather than technology's role in financing decisions; for example, Allen and Gale (1999) and Freear, Sohl, and Wetzel (2002) specifically focus on technology financing decisions in firms, and specifically related to SMEs. Whatever the reasons, information technology is often seen as a decentralizing force in organizations (Bloom, Garicano, Sadun, & Van Reenen, 2014). As such, this might deflect from the important role it plays in identification and data gathering processes prelude to financing opportunities and decision making. Effective managers and executives will utilize information as well as communications technologies in making the best financing decisions for their businesses. According to Bloom, Garicano, Sadun, and Van Reenen (2014), while information technology acts as a decentralizing force in organizations, communications technology acts as a centralizing force. This statement relates to these researchers' observation that better information technology leads to greater autonomy over organizational processes including decision making, while more or better communications technology decrease that autonomy (Bloom, et al, 2014). Deducing from these assertions, information technology plays a role in identifying, gathering, sharing, and categorizing information and data vital to making financing decisions, whether it is a lending institution making decision on financing a person or firm, or whether it is the small business owner or large corporation deciding on the best method to finance its business activities including growth and expansion plans.

1.2 Effectiveness and Efficiency Roles of Information Technology in Financing

Managerial decision making and use of organizational resources and capabilities require effectiveness and efficiency, and information technology plays a significant role in affording managers and executives the opportunity to become more effective and efficient as they meet various organizational challenges including deciding on how best to finance operations activities as well as other functional activities of business. Using information technology, managers and executives can better identify and evaluate the alternatives available to their organizations. They can use decision support and planning systems to analyze data and information, and to store and retrieve pertinent information and records vital to making the best decisions for financing operations in all areas of business.

The development of and greater access to information technology systems have allowed finance planners and managers across both small and large organizations to better understand the financial markets and environments in which their organizations function, the types of financing resources available, how to better access and qualify for these resources, and how to leverage current business resources and assets in meeting financing thresholds of various lenders and investors. Moreover, in a global marketplace, information technology has helped both lenders and borrowers; financing companies and investors and those who seek funding to have speedier interactions and decision making. Moreover, technology tools and platforms have contributed to organizational managers and decision makers more carefully identifying and accessing the right resources for their companies and to drive more efficient and results-oriented planning (Mullin, 2017). Furthermore, technology systems have helped companies to better target their prospects and expand their reach and offerings via a variety of financial products and services. Additionally, information and associated technology have helped executives and managers of financing services companies to create more focused and even more diverse programs to meet the credit and other qualifying factors and needs of companies and individuals seeking financing for their ventures and activities

2 Types of Information and Technology Systems in Financing

While companies or organizations seeking financing opportunities leverage and use technology in an intermediate and mediating role, McWaters (2015) points to how banks and other lending and financial institutions are leveraging technology as marketing tools in their financing functions and operations. According to McWaters (2015), the diversity of funding and financing tools and activities via new social media have created challenges for banking and other financing institutions. For example, crowdfunding, peer-to-peer lenders, mobile payments, bitcoin, robo-advisers (McWaters, 2015) and the like have called for traditional financing entities to become more innovative and to leverage technology more effectively in maintaining and promoting their presence in the globally expanding market for capital (Adelman & Marks, 2016; Berk & DeMarzo, 2011; Bekaert & Hodrick, 2011). This has led to financing institutions – lenders and investment companies to rethink their business models. Business models describe how companies capture, create, design and deliver value to their customers (Osterwalder & Pigneur, 2010; Amit & Zott, 2010; Osterwalder, Pigneur & Tucci, 2005; Hedman & Kalling, 2003). Financial institutions or companies are now developing more user-friendly and customer-focused business models that align more with the varying needs of their diverse customers in the post-recessionary market where financing business operations, whether start-ups or existing businesses, has become more challenging due to decrease in creditworthiness and the resulting credit-crunch from the 2007-2008 global financial and economic crisis.

McWaters (2015) suggests that technology and its usage by diverse stakeholders and businesses in the financial services industry have led to "disruptive innovation in financial services" (p. 1) in several ways:

(1) Technology has led to innovation resulting in the deployment of highly focused products and services that appeal to today's more tech-savvy and price-conscious customers, especially small business entrepreneurs.

(2) Technology usage and application in financing services and industry have led to the automation and commoditization of high-margin processes as "Innovators are also using their technical skills to automate manual processes that are currently very resource intensive for established players" (McWaters, 2015, p. 1).

(3) Information and associated technology have led to both financing institutions and lenders, as well as borrowers using data more strategically as lenders and investors are making lending and financing decisions based on credit scores, organizationally salient performance indicators including accounting-financial ratios and other market-based objective values.

(4) Technology has facilitated financiers becoming more platform-based and capital-light as lenders are now able to facilitate increase financing or lending, without putting any of their own capital at risk. Instead, they have provided a place where borrowers looking to get a better rate can meet with lenders (both individuals and a range of institutions such as hedge funds) who are eager to invest their money (McWaters, 2015, p. 1).

(5) Lenders and investors are collaborating with incumbents: "Smart investors have realized that they can employ bifurcated strategies to compete with incumbents in the arenas of their choosing while piggy-backing on their scale and infrastructure where they are unable to compete" (McWaters, 2015, p. 1). The collaboration between existing and incumbent financing institutions or entities create opportunities for realizing new segments and targets, as well as new methods and innovation in the industry and business.

The above are only some of the ways in which technology has created new platforms that change the approach to financing needs and demands in today's competitive marketplace. Furthermore, information technology has led to the development of broad networks for exchanging, sharing, and accessing information, and in an age of homeland security and terrorism, has created greater focus on lending policies and procedures across the board for many companies engaged in the financing of startups and existing ventures in a global marketplace where regulation is still a major challenge. More than anything else, the Internet has revolutionized financing through access, reach, speed and automation, and by linking lenders and borrowers, investors and entrepreneurs over wide areas and markets. Technology has globalized financing, and social media platforms have served well in advertising products and services to small and large firms alike seeking to make decisions on where to acquire funding for their operations and other activities (Mullin, 2017). This points to the role that technology and particularly information-based platforms have played in competition in the market and industry for financing services.

Financing services have used and are using accounting and technology information systems to access and gather data from corporate reports and financial statements on companies' debt ratios and other important assets and resources in making decisions on whether or not to finance corporations (Beattie, Goodacre & Thomson, 2006). For example, some lenders target certain debt ratios, while others look at leverage ratios and combination of several ratios and performance indicators from accounting systems and other financial market data in order to make decisions or lend or not to lend, to finance, or not to finance, as well as how to better manage and diversify risks

3 Conclusion

When it comes to financing decisions, Beattie, Goodacre and Thomson (2006) have found that firms tend to be heterogeneous in their capital structure policies with nearly 50% of firms seeking to maintain a target debt level, consistent with trade-off theory, while about 60% of firms claim to follow a financing hierarchy. Despite the competitive nature of the market for financing services, firm-specific expectations and requirements in financing compared against the requirements and offerings of financing ventures and institutions constitute the market for financing organizational and entrepreneurial activities and programs. This market is growing exponentially (Adelman & Marks; Bekaert & Hodrick, 2011), and technology has played an important role via communications and information in the expansion and processes operating in this market. Firms are using technology systems to access data, analyze data, and to share and exchange this data and information internally and externally as they seek capital, and financing services companies and investors are using information technology to access, identify, store and retrieve data on existing and potential borrowers not limited to credit scores and other ratios that are relevant in communicating corporation health and lending and default risks. Thus, information technology has been playing a most critical role in 21st century corporate financing.

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