

WHAT IS THE GLOBAL FUTURE ROLE OF DIGITALIZATION FOR SMALL AND MEDIUM-SIZED ENTERPRISES? LESSONS LEARNED FROM COVID 19

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ABSTRACT

The economic shock from COVID-19 was unprecedented for organizations all over the world regardless of their sizes. The pandemic's most severe implications were for Small and Medium-sized Enterprises (SMEs). SMEs lacked the resources, sources of financing, and other means to survive until conditions stabilized from the pandemic. But for many SMEs, digital technologies (DTs) offered the timely and most cost-effective method to survive the COVID-19 pandemic. In many instances the primary DTs utilized by the SMEs were nothing more than social media sites such as Facebook, Instagram, LinkedIn, and other similar sites. Now post pandemic, digitalization continues to play a major role in the success of many SMEs. In this paper we examine the impact of DTs on SMEs during the COVID-19 pandemic. We will also examine how these enterprises have dramatically changed the manner in which they now operate, and how DTs will drive their innovation in the future. For academic researchers, DTs and their impact on SMEs are underexamined, demand numerous new and novel theories, and will offer a rich research stream for academicians across all disciplines for years to come.

Keywords: digital technologies, SMEs, social media, COVID-19, global economy, Web 3.0

INTRODUCTION

Digital Technologies (DTs) provided a lifeline for many Small and Medium-sized Enterprises (SMEs) during the COVID-19. But the lessons learned by SMEs using DTs for survival have now become key components of their business strategies and operations. In this paper we will also examine how these enterprises have dramatically changed the manner in which they now operate, and how DTs will drive their innovation in the future.

The importance of DTs for SMEs was amplified during the COVID-19 pandemic. But for SMEs, DTs were life-lines during the COVID-19 pandemic. It was a new way of conducting business that they had used only sparingly prior to the pandemic. In this paper we examine the impact of DTs on SMEs during the COVID-19 pandemic and how these enterprises have

dramatically changed the manner in which they now operate, and how these technologies will drive their innovation in the future.

For SMEs, in many instances the primary digitalization tools utilized were nothing more than social media sites such as Facebook, Instagram, LinkedIn, and other similar sites. But especially important to SMEs, these DTs did not have a steep learning curve, and most of their employees were already literate in their uses, functions and operations. Therefore, they could be seamlessly and quickly implemented and used for communications, supply chain challenges, and direct interaction with customers. The lessons learned from the utilization of digital tools during COVID-19 have dramatically changed the manner in which SMEs now operate and how they will drive business and innovation in the future.

We define DTs as electronic tools, devices and resources that generate, store or process data. The definition of DTs includes social media, videos, mobile phones, and many other internet-based tools such as Facebook, Instagram, LinkedIn, and Twitter. These are the DTs that can be used for buying, selling, and acquiring or sharing information. DTs offer 24/7/365 access and can be used by customers and organizations of all sizes (El Sawy, et al. 2010; Lyytinen and Yoo 2002; Yoo et al. 2012). The digitalization of data in print, emails, blogs, tweets, and other forms has made a wealth of data available for researchers. For example, it is estimated that 85% - 95% of all business data is unstructured and most of that is text. DTs have challenged and exceeded the ability of academic press to catch up (Gandomi & Haider 2015).

The purpose of this paper is to examine the role of digitalization for SMEs during the COVID 19 pandemic and to identify lessons SMEs learned from their use during the pandemic. But it is also important to examine how post COVID-19 SMEs are use DTs' distinct competitive advantages to successfully compete against even larger, global organizations. Finally, we discuss the future directions and implications for digitalization for SMEs in the future.

Role of SMEs in the Global Economy

The economic shock from COVID-19 is unprecedented for all organizations of all sizes. However, it's impact has been most severe for SMEs. SMEs lack in the resources, availability of financing, and other means to survive until conditions stabilize from the pandemic over the last few years. The fear was that many of these SMEs would not be able to survive (Kalemli-Ozcan et al, 2020). Researchers (Bartik et al. 2020) in March 2020 surveyed 5,800 U.S. SMEs exploring the impact of COVID-19 on their organizations. Their results highlighted the financial fragility of many of the businesses. In fact, 2/3 of those surveyed had only enough cash to last 2 months. The researchers estimated that if the crisis would last 4 months, 32.7 million jobs would be lost. And if the crisis extended to 6 months, the job losses would climb to 35.1 million. In Canada the impact of COVID-19 on unemployment was dramatic. Seasonally adjusted unemployment as of May 2019 was 5.4%, as of May 2020 the unemployment rate was 13.7% (Statistics Canada, 2022).

SMEs represent a primary component of the global economy. In the U. S., the Small Business Administration (SBA) explains "Small firms (500 or less) accounted for 9.3 million net new private-sector jobs from 2005 to 2019, or 64 percent of the total jobs created" (U.S. Small Business 2020). The SBA Office of Advocacy's latest report explains in the U.S. SMEs employ

58.9 million people or 47.5% of the private workforce, create the greatest number of new jobs annually, and account for over 44% of the U.S. total economic activity (U.S. Small Business 2018). The European markets were one of the first to acknowledge that SMEs were in crisis as a result of the COVID-19 pandemic. In Europe 24 million SMEs represent 99.8% of total enterprises (250 or less employees), and employ 95 million people. These European SMEs contribute 60% of the overall economy (SMEunited2024 2019). In Canada, the seasonally adjusted unemployment was 5.4% in May 2019, after the COVID-19 crisis, the unemployment in May 2020 rose to 13.7%. SMEunited in 2019 published for the European Commission for SMEs a long-term EU SME Strategy with a clear vision for 2030 (SME2024 2019). But although this was report was timely, everything changed with the outbreak of the COVID-19 pandemic. The timetable for implementation was dramatically fast forwarded. As a result, SMEunited (2020) submitted a revised proposal to the European Commission for SMEs explaining that the COVID-19 had an “unprecedented impact on SMEs” across Europe. These SMEs are fighting “for their survival and fear the future of their company and their employees”. One of the major program priorities related to DTs and its need for immediate consideration.

Globally short-term financial packages, subsidies, or even grants have rolled out focused as “stop gap” measures for SMEs to weather the COVID-19 crisis. The U. S. Congress provided life support with the Coronavirus Aid, Relief, and Economic Security (CARES) Act, a \$2.2 trillion spending program in March 2020. SMEs ultimately received \$649 billion to cover payroll, rent, utilities, and other obligations (De Ruyg, 2020). The Canadian government offered a Canada Emergency Wage Subsidy (CEWS) to qualified small businesses, at a no-interest, and also a deferral of income tax payments (Canada, 2020). The European Commission has acknowledged that the SMEs need security, financial support, and practical support. Their plan is to do this through loans, guarantees, support for private capital investment, and government advisory assistance. The financial instruments offered by the European Commission for SMEs are focused on recovery and growth from COVID-19 and require a commitment to “digital transition”.

The SMEunited Social Affairs and Training Policy Director Liliane Volozinskis in their address to the European Alliance for Apprenticeships in July 2020 explained that post COVID-19 embedded digital skills for apprenticeships “now become the rule and not the exception”. Volozinskis further offered that SMEunited’s apprenticeship’s curricula thanks to the European Alliance’s financial support was prepared to provide apprentices those unique skills for digital technologies. Days later SMEunited urged genuine partnerships between membership countries, SMEunited, and the impacted SMEs. These partnerships would contribute to overcoming communication problems, promote the exchange of good practices at all levels including European, national, and regional levels (Porganyi 2020). By October, the European SME Business climate continues an unprecedented drop caused by the COVID-19 crisis. Gerhard Huemer, EU SME Economic Policy Director in his presentation explained that for recovery support measures should focus on innovation and the transition to a digital and greener economy (SMEunited2020). Working together was a vital strategy for a recovery by EU SMEs.

Impact of DTs post COVID-19 on SMEs

Bernd Schmitt (2019) explains that just as the Industrial Revolution resulted in technology-driven economic transformation; we are now seeing another major transformation to DTs. These DTs are dramatically changing and adding value to the consumers buying experiences. Schmitt states that DTs offer a rich new research agenda for the future as the next phase of the digital transformation occurs. He further states that DTs require new methodologies for analyzing digital content. The methodology he proposes is “sentiment analysis” which refers to the use of text mining including natural language processing “to extract consumer attitudes and affective states from digital content”.

DTs are expected to continue to drive dramatic innovation in the future. Baskerville et. al. (2020) suggests that “digital technologies are now creating and shaping physical reality”. They feel there is an ontological reversal where first the digital version is created and then the physical version is created, if needed at all. Research also proposes using both unstructured text and visual data for new deep learning methods (Donghyuk Shin et al. 2020).

In fact, DTs continue to “revolutionize the delivery and consumption of information” across businesses and industries (Shivendu & Zhang 2020). For example, a publisher can now offer content in digital media versus physical products, reducing costs and offering digital-savvy consumers their preferred medium of information. Fernandes et al. (2022) explain that DTs have an enormous impact on entrepreneurs across the world. Just as social media sites such as Google, Facebook, Apple, and others have changed the business world, DTs are expected to have the same impact on future entrepreneurs.

The International Institute of Management Development (IMD) released its 2022 World Digital Competitiveness Ranking (World Digital Competitiveness 2022). IMD feels that digital technologies will be key economic drivers for businesses, governments, and society as a whole, regardless of location. Their rankings help businesses and governments to understand where they can strategically allocate resources are most needed.

But just as DTs offer methods of innovation and cost savings, they too have their challenges. As SMEs offer new DTs based products and services, they must be careful to ensure that the digital technology components create value (Lehmann et. al. 2022). Each venture operates using its own unique business model and just using DTs without added value will not be well-received by their consumers. SMEs function in a global economy. But digital infrastructures are often country specific and do not always work well from country to country. Successful SMEs will carefully review and understand the moderating effects of their DTs as they move from country to country (Shade & Schuhmacher 2021).

George et al. (2021) sees digital entrepreneurship as transforming organizations approach to sustainable development. Traditionally, innovation for sustainable development was done by the State, “now, entrepreneurial start-ups, nonprofit ventures, and incumbent organizations engaging in digital sustainability activities are tackling problems” normally done by governments, NGOs and international agencies. They feel SMEs, through the use of DTs, will develop business models and theories to address problems in sustainable development. SMEs are providing sociological value, but they are doing this with a focus on developing an economic proposition.

In addition to the large-scale social media sites such as Google, Facebook, Instagram, and others, many SMEs are creating self-developed applications (apps). Fan et. al. (2021) suggests this has created dynamic entrepreneurial ecosystems. These “apps” offer great opportunities for cognitive knowledge, although its value may be temporal. The impact of DTs has been destructive across industries. Those SMEs that have embraced DTs in their overall activities have increased their intangible values versus those firms that haven’t embraced DTs (Rahmati et. al. 2021).

Straková et al. (2022) concluded while there were great DTs opportunities for SMEs in the future, there were challenges to maintain the balance “between main value-creating processes and supporting processes”. Where many SMEs used DTs post COVID-19 for survival, supporting DTs business models must be developed to ensure profitability and competitiveness. The DTs process has certainly had a dramatic impact on SMEs, but in the short-term there may be a period of slow advancement until DTs business models are developed.

Vavura (2022) is concerned about the existing gap in the digitalization of SMEs between the European Union and the United States. From their perspective, SMEs in the United States were more prepared for the digital economy. In March 2021 the committee on Industry, Research and Energy (ITRE) commissioned a study (Codagnone et al. 2021) on “Europe’s digital decade and autonomy”. The purpose of this study was to establish a successful digital transformation of Europe by 2030. Based on the conclusions and recommendations from this study, the European Commission will begin legislation and other initiatives to provide educational and financial support for the advancement of digital technologies in SMEs in Europe.

There has been a dramatic growth in the use of DTs (social networking platforms Facebook, Instagram, etc.) among buyers and sellers across international markets (He Huang et al. 2022). He Huang et al. (2021) reflect that “sales from products sold through social networks are projected to reach \$36.09 billion in 2021, up roughly 35% from 2020, and the number of U.S. consumers buying through social networks will grow by 12.9% to 90.4 million in 2021 from 80.1 million in 2020”. With the acceptance of doing business online, SMEs are now using social media and search engines to drive down their costs for advertising and promotion. But some major social retailers such as Amazon have opened their platforms to 3rd party sellers (Chen & Guo, 2022). The 3rd party sellers get exposure to Amazon’s 208 million unique monthly visitors while Amazon gets a commission on each product sold. In some cases, Amazon offered the same products as the 3rd party sellers. But sometimes Amazon and the 3rd party seller are selling the same products and Amazon is both selling and getting commissions on both. Future trends show many SMEs using social media platforms will sell directly to their customers, by passing traditional advertising and arrangements with others like Amazon (Barnhart 2022).

Concluding Thoughts

Others too have questioned the direction of strategic management research. Drnevich et al. (2020) suggest a refocusing of management research “based on the logic of discovery of real-world phenomena and strategic problems”. The question becomes whether longitudinal research studies will produce the seminal works and business models necessary to deal with a digital

technology driven world. Can SMEs take advantage of the opportunities available in DTs, while waiting for academic researchers to create models and theories to support their efforts?

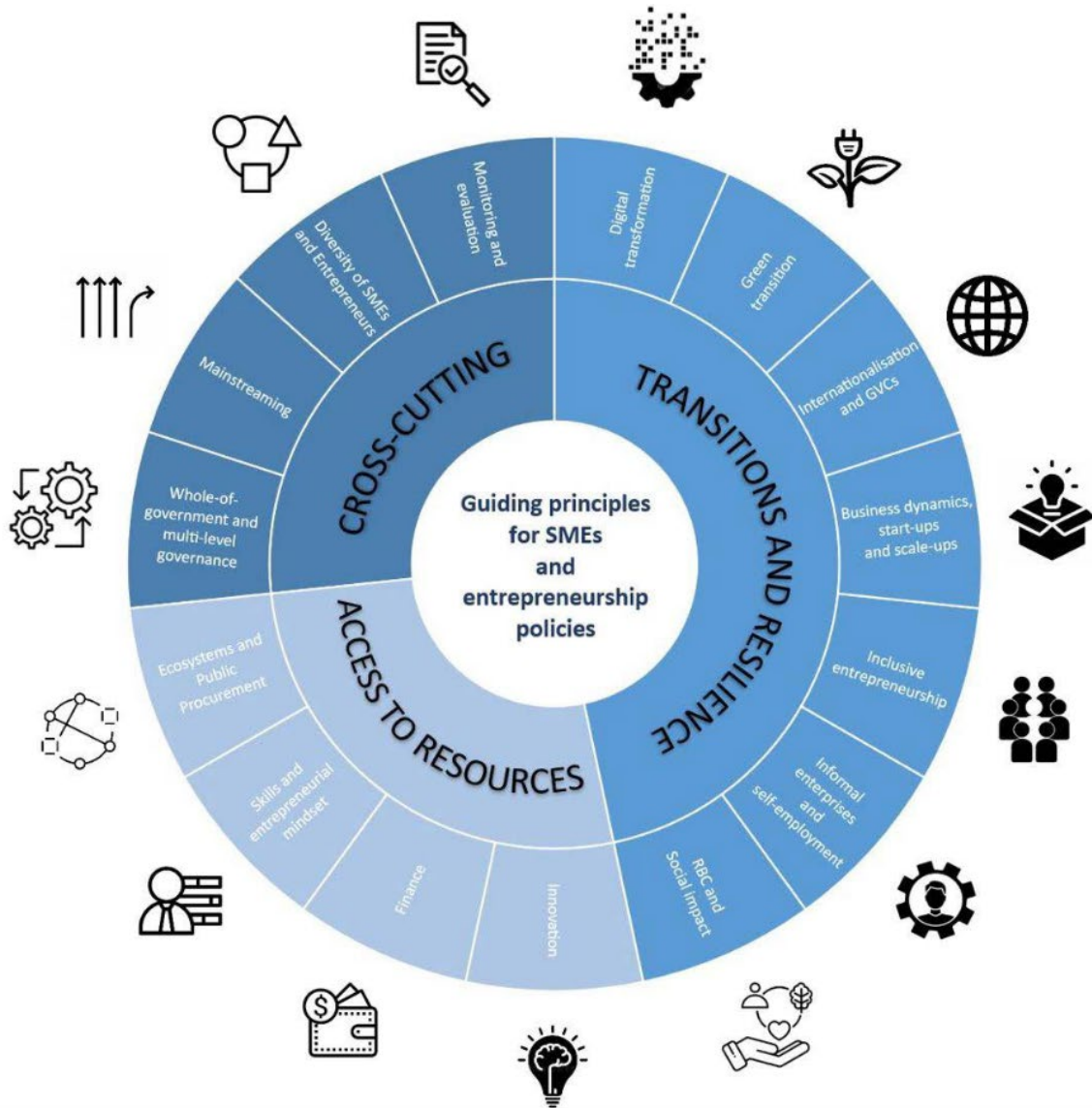
It is expected that DT driven business models for SMEs will become pervasive and can be expected to drive disruption of existing legacy and operational models. They will continue to spur innovation and disconcert existing business models (Khurana et al. 2022, Silva et al. 2022). Empirical research by others (Rupeika-Apoga et al. 2022) recognize that in the digital transformation for some SMEs there is a “knowledge gap” that exists and offers great opportunities for research. This lack of focus by academic researchers offers a great opportunity for the development of new digital technology theories (Xin et al. 2022).

In June 2022, the Organization for Economic Co-operation and Development (OECD) outlined principles for effective, efficient and coherent SME and entrepreneurship policies (OECD 2022). The OECD is an international organization that offers advice on public policies to SMEs to “better prepare the world of tomorrow”. From their perspective, “SMEs and entrepreneurs constitute the backbone of economies in OECD countries and beyond”. Recognizing the challenges that SMEs and entrepreneurs face post COVID-19, they have released the “OECD SME and Entrepreneurship Strategy” (See Table 1). A core component of this report is the need for Digital Transformation by SMEs and entrepreneurs. In their opinion, this digital transformation is necessary to ensuring open and well-functioning markets across global economies. The OECD’s latest offering highlights their acknowledgement of the role of SMEs in the global economy and digitalization’s place in it.

In dire straits during and after the COVID-19 pandemic, DTs offered a lifeline to SMEs. The lessons they learned using DTs to survive will continue to drive their organizations into the future. The traditional business models for every SME, regardless of industry, have been transformed by the COVID-19 pandemic. Whether it is for marketing, operations, manufacturing, or any other activity, new technology innovations continue to offer alternate ways of doing business. For those SMEs operating in the global environment, they will use DTs to sell, produce, and collaborate with others worldwide.

For academic researchers, DTs and their impact on SMEs are underexamined, demand numerous new and novel theories, and will offer a rich research stream for academicians across all disciplines for years to come.

Table 1
OECD SME and Entrepreneurship Strategy



Source: <https://www.oecd.org/cfe/smes/Guiding-principles--SMEs.pdf>

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