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We've got work to do!

Enabling the COVID-19 recovery digitally

Keynote Talk

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Abstract

Given the accelerated adoption of technology during coronavirus pandemic (COVID-19) and the emergence of new needs in terms of new products and services, new business models, and new ways of organizing, the question of how digital technology will impact the recovery after the pandemic is highly salient for scholars of strategy, management, and information systems (IS). This paper attempts to interpret the progress, direction, and purpose of the current research related to digital transformation—the process of digital technology enabled changes. It highlights the importance of taking stock of what we know about digital transformation and shedding more light on what is unique about the post-pandemic recovery phenomenon. Then, the article illustrates the implications for future research at the crossroads between the COVID-19 recovery and digital transformation across multiple levels of analysis, including individual, organization, and society.

Keywords

Digital technology, digital transformation, crisis recovery, COVID-19 recovery

Introduction

The COVID-19 pandemic shocked the world and placed enormous pressures on the health care, travel, retail, food services, and entertainment industries, among many others. Many governments around the world responded by issuing different degrees of mandatory lockdowns and quarantines requirements, fearing infection simply from being near other people. During that period, homes became multifunctional refuges and transformations took place in the way people interacted with loved ones, did work and learn, got medical care, spent leisure time, and conducted many of the routine transactions of life. Companies improvised and found different means of conducting work, staying relevant, and continuing to operate.

While it was not a welcomed shock to the world, the COVID-19 also proved digital technology's potential as a great enabler. The world witnessed an increased digitization, manifested in the extensive reliance of societies, businesses, and individuals to much of their activities throughout the pandemic. Online shopping, contactless payments, and robotic deliveries kept many consumer businesses afloat. Remote work and learning—and telehealth in some countries—became widespread. Online entertainment and gaming also gained significant traction. Individuals and companies moved more starkly than ever to embrace both the virtual and physical work arrangements. In addition, these technologies enabled quick creative innovations to secure digital access to products and services across different sectors from banks to grocery stores to gymnasiums and art performances. Some trends that were expected to unfold over several years took hold in a matter of weeks. Digital and alternative fulfillment models (such as curbside pickup, automated deliveries, contactless payments in the retailing sector), which were previously viewed as experimental, suddenly became must-haves. These changes accelerated the migration to digital technologies at stunning scale and speed, across every sector vaulting at least five years forward in digital adoption, according to some estimations (Baig et al. 2020).

It would be a huge mistake, however, to think that the COVID-19 pandemic was the end of the traditional, non-digital-enabled fabric of our society. Nonetheless, it showed that pre-pandemic practices, processes, and structures were designed to support business-as-usual and were not suited for dealing with the

emergency situations like this one. At the same time, we must be aware that much of the use of digital technologies during COVID-19 involved improvisation, and temporally relaxed some trends (such as the previously rising privacy and security concerns). Although it is too early to estimate which of these temporary digital shifts will hold, it is likely that digital will play a defining role in the pandemic recovery—and will even become catalyst to longer-term changes. Even for industries and companies that were able to survive the downturn, including those that were vital to our economic system during this period, will face a critical period of adjustment before the changes made during the pandemic become the new business-as-usual. This is exactly what happens every time there is a major crisis: a period of *creative destruction*, as called by economist Joseph Schumpeter. This is the cycle where a crisis causes declining industries and marginally successful business models to disappear faster than they would have if the economy had continued to grow. As Stanford economist Paul Romer reminds us, however, “a crisis is a terrible thing to waste.” This moment gives the opportunity to shift and reset our strategy. Every company and its leaders will have to reflect on how to survive, stay relevant, and grow in the post-pandemic era. In fact, as lockdowns and quarantines lifted and many companies started returning to business, inconsistencies were encountered in demand for their products and services, customers who suddenly preferred digital interactions, and faster organizational metabolisms enabled by remote work.

Therefore, given this accelerated adoption of technology during COVID-19 and the emergence of new needs in terms of new products and services, new business models, and new ways of organizing—that may have a long-lasting impact beyond COVID-19—the question of how digital technology will impact the recovery after the pandemic is highly salient for scholars of strategy, management, and IS. The aim of this article is to interpret the nature of this acceleration and effects of technology on individuals, businesses, and societies. The good news is that while individuals, businesses, and societies had to be inventive and adaptive in their responses during the pandemic, we are not moving into entirely uncharted territory. In fact, even before COVID-19, many companies worldwide had shifted in order to better compete in a business landscape characterized by strong customer-centricity, complexity, dynamic, and technology. In that process they embarked in digital technology-enabled changes, a process termed “digital transformation.” During the pandemic, many more companies joined them, and more will continue to do so in the post-pandemic years. Our cumulative experience of what makes a digital transformation succeed and what gets in its way can offer valuable insight at these challenging times. The lessons from the past—on how to acknowledge and balance the roles of technology, social needs, work arrangements, and personal preferences—are of crucial importance to us now. The importance of taking stock of what we know about digital transformation and shedding more light on what is unique about the post-pandemic recovery phenomenon—underscores the need to expand the research agenda on digital transformation.

What We Know About Digital Transformation

“Digital transformation” was a buzz phrase prior to the coronavirus crisis. It was already occurring but not universally. A survey in October 2018 found that 85 percent of respondents wanted their operations to be mostly or entirely digital but only 18 percent actually were (McKinsey and Company 2018). Companies that had embarked on digital transformation intelligently, however, were seeing benefits in productivity, quality, and end-customer connectivity. Similarly, according to research by International Data Corporation (IDC), in 2019 companies spent nearly \$1.2 trillion on digital transformation. Yet, only 13 percent of leaders believed their organizations were truly ready to compete in the digital age (IDC 2019). Since the COVID-19 pandemic, digital transformation is becoming a reality in many cases—and a necessity for all.

It is important to note that the term “digital transformation” has been miss- and over-used. Leaders in various industry circles use that term inconsistently to describe various strategizing and organizing perspectives. These perspectives range from a focus on choosing an appropriate mix of technologies and integrate them across channels, to digital customer engagement, to new digital business models and more. Here, we follow Tabrizi et al. (2019) who argues that “digital transformation is fundamentally not about technology, but about strategy”, meaning that senior leadership teams must find ways to capitalize on new and unexpected business model innovations that create, deliver, and capture values in today’s dynamic business environment. We identify digital transformation as “a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies” (Vial 2019, p.118). A recent review of the emerging

literature on digital transformation by Gregory Vial provides an initial integrative understanding of digital transformation (Vial 2019). This review and synthesis of knowledge that has been accumulated thus far is a useful point of departure for conducting further work at the intersection between the COVID-19 recovery and digital transformation.

The existing literature stream on digital transformation has clarified the unique characteristics and properties of digital technologies, their flexibility, malleability, and so on (e.g., Kallinikos et al. 2013, Gregory et al. 2019). It has also identified how digital technologies through these unique properties offer new opportunities for the creation of new infrastructures, products, and business models (Andal-Ancion et al. 2003, Henfridsson and Bygstad 2013, Lyytinen et al. 2016, Montealegre et al. 2019, Nambisan et al. 2017), reshaping ways of organizing for innovation along the way (Yoo et al. 2012). At the same time, digital technologies not only provide new opportunities for innovation but also impact societies, organizations, and individuals more directly than ever before (Cascio and Montealegre 2016). They have become significantly more affordable and accessible to everyone, embedding themselves into society and changing consumer behaviors and expectations (Gregory et al. 2018). Furthermore, the blending of digital technologies within firms' settings (Woodard et al. 2013) produces constant changes not only in customer expectations but also in the competitive landscape as entry barriers are lowered and new platform business models rise (Hansen and Sia 2015, Huang et al. 2017, Sia et al. 2016). Scholars across multiple disciplines have shed light on new ways of organizing, new business models, and a new generation of digital technology that in many ways has enabled and stimulated these developments (Yoo et al. 2012). In turn, these new developments have started to put firms across a variety of industries (e.g., media and entertainment, banking and finance, automotive, retail, and education) under pressure to renew themselves as their external environment has started to be characterized by even greater velocity of change, uncertainty, complexity, and ambiguity than ever before.

In the post-pandemic era, the phenomenon of digital transformation is no longer just associated with the “new” (new products and services including digital-first experiences, new business models including platform businesses, new enabling digital technologies, new ways of organizing, etc.) that emerges outside the realm of influence, control and immediate relevance for traditional industries. Instead, digital transformation is also associated with the “renovation” of the “old” (e.g., established hierarchical structures, established organizational cultures, established competencies and sets of enabling resources) inside firms as they embrace innovation and renovation (Gregory et al. 2019). In sum, digital transformation post-pandemic means more than the emergence of “the new” that has been extensively studied over the past decade.

At the center of this era is the accelerated adoption of digital technology, manifested in consumers, employees and citizens across all demographics and sectors worldwide embracing an array of digital activities and technologies throughout their personal and professional lives. A process that, as prior research has found, triggers significant pressure on firms to transform their organizational structures and legacy systems, overcome structural inertia, and reinvent their models and approaches to value creation and capture (Bharadwaj et al. 2013; Sebastian et al. 2017, Gregory et al. 2019). An important consequence of this post pandemic digital environment is enhanced autonomy, that is, the practical capacities of individuals to do more for and by themselves, in loose commonality with others, and without being constrained by traditional hierarchical models of social and economic organization.

The importance of taking stock of what we know about digital transformation and shedding more light on what is unique about the COVID-19 recovery phenomenon—underscores the need to expand the research agenda on digital transformation. There are at least four key questions that as strategy, management, and IS scholars, we need to pay more attention to and investigate:

1. Why does the post-pandemic era trigger digital transformation in firms?
2. What are the key drivers of this digital transformation in firms' immediate environment?
3. How might these drivers alter the structure, strategy, culture, competencies, skills and technology platforms of firms?
4. As well as several open questions related to the trajectories of digital transformation journeys inside firms.

Some Guidance for Researchers

The accelerated adoption of digital technologies during the COVID-19 and the circumstances surrounding the post-pandemic recovery provide the need as well as the opportunity to understand and learn about how individuals, organizations and societies will transform digitally. As researchers approach such investigation, this section offers some important guidance. First select your philosophical stance. Is the purpose of the research to study the dynamic interactions between people, organizations, or societies, and technology over time? This is Orlikowski's (2009) *emergent-force* perspective. Or is the purpose to focus on how technology is intrinsic to everyday activities and relations in the post-pandemic era (Orlikowski's *entanglement-in-practice* perspective)? In either case, be clear about your conceptual guidance. Make sure that you have covered and reviewed the relevant literature. Define the boundaries of your study (even if you have no framework, no variables, no hypotheses). Clearly state your research question even if it is rather large. It is also crucial to provide a sensible theoretical basis even if you "preserve a high degree of openness to the field data and a willingness to modify initial assumptions and theories" (Walsham 1993). Finally, I also caution researchers not to seek individuals, companies, and societies that simply are looking for the latest hot technology offering a quick payback. Instead, they should be committed and thinking about the broad strategic direction and how digital technology can help solve problems.

Another consideration is research methodologies. For those interested in studying the effects of technology on individuals, work systems and social structures, role theory may be especially useful. Role-based studies of how technologies alter work systems usually involve studying *in situ* performance. Cascio and Aguinis (2008) defined this construct as the specification of the broad range of effects—situational, contextual, strategic, and environmental—that may affect individual, team, organization, or society. Thus, it provides a richer, fuller, context-embedded description of the outcomes that researchers wish to predict, as well as insights about who interacts with whom, and potentially about what (Barley 2015). To study how people play their roles, researchers need to document repetitive patterns of typical encounters. A method that facilitates this is dramaturgical analysis (Goffman 1959, 1983). Relying on observations rather than interviews, dramaturgy highlights roles, scripts, interactions, and role relations, including those with whom users interact regardless of whether they also use the technology. Dramaturgy asks a simple question, namely, has the technology shaped role relations within the work system in which it resides? The combination of role theory and dramaturgical analysis allows researchers to address holistically yet systematically both social as well as material features of technology-based changes in work systems.

An additional methodological alternative for studying how technologies alter work systems is experience sampling (Beal 2015). Experience sampling methods (ESM), a family of approaches, attempt to capture a wide range of each individual's experiences as they occur in daily life, as close to the moment that they occur as possible. Typically, ESM designs involve intensive, repeated assessments with brief intervals (e.g., several hours to a day, or even 1-2 weeks). Because ESM attempts to capture fluctuations in one's daily experiences, it is clearly a within-person process, but Beal (2015) has shown that ESM can also link to higher levels of analysis that are aggregated versions of individual-level variables, such as customer service or store sales per work hour.

In thinking about methodological alternatives, however, researchers might have to adapt the ways in which they do research, with some traditional ways of accessing and analyzing data becoming complicated or being closed off. In my own work, I have replaced on-site field study with digital diaries, video walk-throughs, and social media communications. Questions of interest that the researcher needs to ask her/himself include, but are not limited to: How could I apply the tools and techniques traditionally used in my research to the current circumstances? How can tools and techniques used in crisis research be applied in the post-pandemic era to generate novel insights? How can I, whose research was interrupted by COVID-19, pivot toward new opportunities for the data already collected? How did this pandemic affect availability and quality of data? What of reliability, validity and generalizability? How can future research accommodate data collected during COVID-19? How do common social and economic responses to COVID-19 influence data collection and analysis? What opportunities emerge from these changes? Which past crises can we learn from and extrapolate data from to facilitate the COVID-19 recovery?

Conclusion

This paper offers three main contributions. First, it presents an up-to-date characterization of the accelerated adoption of digital technology that has taken place during the COVID-19 pandemic. To deal with the crisis, individuals, organizations, and societies relied and developed digital solutions quickly. However, they also adapted their behaviors, operating models, and delivered product and services to customers, employees, and citizens. Second, it interprets the progress, direction, and purpose of the current research related to digital transformation. Third, it illustrates the implications for future research at the crossroads between the COVID-19 recovery and digital transformation across multiple levels of analysis, including individual, organization, and society. Ultimately, the crucial issue to consider is not technology in and of itself; rather, it is how to create and use theory and research to deepen our understanding about the impact and implementation of new developments in the post-pandemic era. The objective is clear: Maximize the positive consequences for individuals, organizations, and societies and minimize the negative effects. This will be a stimulating and ongoing challenge for the field of strategy, management, and IS.

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