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EDITORIAL PREFACE

Are We Losing Out With Digitization?

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Digital technologies are enmeshing us. Their pervasiveness in our processes, interactions, and social connections have reached a point where both people and businesses must deploy and use these technologies to survive and thrive. However, at this point, there are some fundamental questions that need to be raised regarding these technologies:

- Are these digital technologies liberating or constraining?
- Do they improve social interactions or hurt them?
- Do they improve cognitive ability or hurt it?
- Are they improving economic impact or limiting it?

While there is an obvious duality with digital technologies, we tend to accentuate the positive side of this duality.¹ In this editorial preface, I will do the opposite—focus on the negative side. In a global context, this focus is important, as a one-sided accentuation pushes the drumbeat of digital deployment in an indiscriminate fashion. This could blind us to both opportunities and constraints in the digital space. The following text argues that in addition to the evident expansion of social, cognitive, and economic capital promulgated by digitization, a nuanced view could argue for a contraction of the same. Some have discussed this as the “dark side of digitization” and have taken an anti-technology view. My perspective is pro-technology, and I make the case for caution—which I call contingent digitalization.

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¹In a recent Pew Research Center study, most polled adults feel that digitization has been beneficial to society and to individual users (Pew Research Center, 2014).

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SOCIAL CAPITAL

The decade-old social networking phenomena has obviously enhanced social capital, in quantity if not quality, of both individuals, groups and organizations, as they form coalitions on a variety of platforms and bolster both the reach and richness of their communication. This can create substantial network effects for interactions, access to information, and promotion. On the downside, privacy is the widely discussed caveat. However, I would argue that digital technologies might reduce social capital in many ways. First, the humanness of social capital, built through engagement is rarely commensurate with social media platforms that focus on snippets and short form communication. In fact, the socialization culture is changing dramatically; people are glued to their smart-devices, caught in activity traps of texting, playing games, e-mailing, surfing, listening to music, and watching video clips with little or no time for traditional face to face conversations or communications with fellow human beings or even family members (Keller, 2013). These snippets of interactions are devoid of rich human cues that firm the essence of relationships. As a consequence, social media relationships tend to be voluminous, with few strong ties and many weak ties. Also, the ease of congregation in electronic space precludes diversity of viewpoints, as “birds of a feather” assimilate . . . leading to more echo chambers and less critical thinking. Therefore the implications of digital technologies on a broader conceptualization of social capital may be indeterminate.

COGNITIVE CAPITAL

On the positive side, individuals and organizations clearly have access to a plethora of information as big data is being seamlessly captured in growing volume, velocity, and variety. Correspondingly, analytical tools are automating decisions within processes, and higher orders of intelligence are being built into systems. The bounded rationality of individuals and organizations to process, store and communicate information is expanding exponentially. However, I would argue that digital technologies may be reducing cognitive capital. Over-reliance on systems that provide information immediately as well as systems that automate, could not only lead to dependence on these systems, but also reduced cognitive ability (Carr, 2008). The shift from augmentation of human cognition to the substitution of it could be dangerous. Individuals depend on Google to piece together information on demand, and could lose the ability to think and engage in depth with that information. Importantly, they could lose the prized human ability to focus, a quality that leads to discoveries and innovation. After all, a loose fabric of superficial information with holes plugged in through searches for other information is a patchy foundation for a thesis. Similarly, over-dependence on automation could lead to deskilling of work, possibly resulting in dysfunctional effects like the inability to identify serious machine errors or even boredom. Therefore the implications of digital technologies on a broader conceptualization of cognitive capital may also be indeterminate.

ECONOMIC CAPITAL

Digitization reduces agency and transaction costs within and across firms. The positive case for economic capital at the business level is epitomized by companies such as Uber, Facebook, and

Amazon, among others, with their innovative digital processes, products, and services. The negative case is best represented by the dot.com bust in the last decade, where digitalization was considered to be utopia, and many poor business models were initially rewarded for revenue growth over profit, before they came crashing to the ground. However, I would argue that most dot.com failures were due to poor implementation. Today, despite strong implementation, it is very possible that digitalization can still lead to a loss in economic capital. Companies that digitalize and overshoot their customer base by over-automating customer facing processes can cause frustration when customers cannot interact with a real person. Closing down physical stores might cost a company dearly if its customer base values rapid physical access to products and personalized services. In some cases, putting out digital initiatives might simply signal new opportunities to competitors who can replicate, enhance and snatch away any competitive advantage (Grover & Kohli, 2013). From a macroeconomic view, the replacement of human capital with machines is having an adverse effect on the labor market (Brynjolfsson & McAfee, 2014). Therefore, the implications of digital technologies for creation of economic capital may not be as straightforward as it appears.

DIGITIZATION AND SOCIAL, COGNITIVE, ECONOMIC CAPITAL

So, what does this all mean? There seems to be a subliminal thesis at play in both research and practice that correlates digitization and progress. The thesis interprets digitization to be beneficial for society—socially, cognitively, and economically. The thesis if articulated might go something like this:

Digitization working over an infrastructure increases [technological affordance] that thereby increases [individual, group or organizational ability] leading to [greater value (social, cognitive, economic)]

So, by converting images, text, video, software, voice, documents, sensors, and clicks, for example, to the electronically represented digits of 0 and 1, and allowing them to flow over networks and platforms—we can increase our individual and collective propensity to do things (ability) through technology features (affordances) and improve our individual and collective value. This thesis is manifest in practice where vendors push new technologies, companies deploy digital initiatives in an attempt to reduce costs, stay in business, or get ahead, and individuals come to rely on digitalization for their education, communication, access to public services and generally getting things done.

IMPLICATIONS FOR RESEARCHERS

More pertinent to us, as a community of researchers, we see this thesis manifest in most of our codified work. Typically, we draw our abstract theory from a reference discipline, and apply it to a digital technology related phenomena by creating a mid-level causal model. This model is tested through our data. Often the digital technology constructs are exogenous to our model and treated as drivers or moderators that improve the relationships. So, digital technology (constructs) might be hypothesized to directly or indirectly improve supply chain integration, corporate profitability,

market efficiency, communication transparency, processes efficiency, decision-making effectiveness, and customer satisfaction, among others. The vast majority of these hypotheses represent the thesis described above. Very limited work focuses on the other side of the duality. Even in examining case studies, we more often than not illustrate exemplars from which we can derive positive prescriptive implications for digital technologies.

My aim in this editorial preface is simple. I believe that the alternate (negative) view of digital technologies is important too. To say that digital technologies decrease social capital, cognitive capital and economic capital sounds blasphemous in today's environment. However, such outcomes are both plausible and feasible. By not focusing on them, we exaggerate the effects of one-sided hypotheses and lose our propensity for a more balanced view of digital technologies. By illuminating a blind spot, I think we can enhance and expand our understanding of how digital technologies are truly changing the value proposition of society.

Let me hasten to add that I am not suggesting that digital technologies are bad—but only that they could be bad under certain conditions, and we need to develop models that also understand these contingencies. By doing so, we will develop different (and more refined) conceptualizations of outcomes. For example, in understanding social capital, we can delve into the nature and benefits of relationships promulgated by social media. We can study how likeminded congregation can limit creativity. We can examine how constant electronic communication might affect physical communication, particularly as more of the population becomes digital natives. In understanding cognitive capital, we can delve into questions of automation—and its deskilling and boredom effects. We can examine how digital technologies change the nature of information access and its implications for problem solving and decision-making. We can also examine if there is a certain complacency that sets in with search engines and apps—that do so many different things for people. Finally, in understanding economic capital, we can examine cases where digitalization failed to improve economic outcomes, not because of poor deployment, but because it was the wrong thing to do. We can correspondingly examine cases where the best equilibrium for success, given the customer base and environment, was to have lower levels of digitalization.

Some of these questions are being studied today—but I would argue inadequately and not in enough depth. There is the chorus that promotes digitization as the inevitable catalyst that will transform the way we work, play and do business. Perhaps this is inevitable, in the long run. However, I would argue that in a free society, not to digitize remains a choice that could yield a viable equilibrium for companies and individuals. Even if it is not viable due to economic and network effects, the implications of digitization for people and companies are not inevitably positive—and we need to recognize and understand this if we are to design interventions, before it is too late.

CLOSING REMARKS

Let me close by reiterating that I am not anti-technology. In fact, I have made a career extolling the virtues of digital technologies. However, I believe that we are at a point of inflexion in the transformation of society through digitization. I believe in the thesis, but I fear that by focusing too much on the positive side, we might get desensitized to its caveats. I also fear there is value in humanness that might need to be carved out as a niche in this enmeshed digital space. Perhaps, digitization will eventually create a good substitute for humanness—but I think we are far from

that point. Any digitization suffers from the limitations of its creator, and such limitations can get compounded in our interconnected world.

So, the implications of driving people and businesses into greater digitization under all contingencies might close off a more nuanced understanding of when to undertake digital initiatives. The presence of digitization being subject to such contingencies are very apparent to me when I am unsuccessfully navigating through a plethora of robotic voices on a customer service link—longing to talk to a human voice.

CONTRIBUTOR

Varun Grover is the William S. Lee (Duke Energy) Distinguished Professor of Information Systems at Clemson University. He has published extensively in the information systems field, with over 200 publications in major refereed journals. Ten recent articles have ranked him among the top four researchers based on number of publications in the top information systems journals, as well as citation impact. His h-index is 68 and he has over 20,000 citations to his work. Dr. Grover is Senior Editor of *MISQ Executive* and Section Editor of the *Journal of the Association for Information Systems (JAIS)*. He is Senior Editor (Emeritus) for *MIS Quarterly*, the *JAIS*, and *Database*. He is recipient of numerous awards from USC, Clemson, AIS, DSI, Anbar, PriceWaterhouse, etc. for his research and teaching, and is a Fellow of the Association for Information Systems.

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