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Munir Mandviwalla

Dinesh Desai

Linda Descano

Larry Dignan

Chris Kearns

*See next page for additional authors*

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## Guest Editorial: An industry perspective on major post-pandemic issues

### Authors

Munir Mandviwalla, Dinesh Desai, Linda Descano, Larry Dignan, Chris Kearns, and Raghu Sankaran

## EDITORS' COMMENTS

### Special Issue Editorial: An industry perspective on major post-pandemic issues<sup>1</sup>

#### Fast-forwarding change

This editorial provides current implications and recommendations of senior industry experts about the state and future of digital transformation, business value, data centrality, business continuity, remote work, workforce, and the increasing digitally enabled societal role of businesses.

The challenges of the Covid-19 pandemic are myriad, impacting society, academia and business.<sup>2</sup> In this editorial, we focus on the economic, social, human, and organizational capital implications for organizations. The underlying issues are well known, for example, revenue has dropped in many industries, markets are closed or limited, service providers are constrained in their ability to engage at scale, and some key employees are less available. Still, like any crisis, the pandemic has also fast-forwarded changes that will likely have long-term benefits. The implications of these changes are discussed next.

#### Implications and recommendations

##### 1. Is the digital transformation sprint sustainable?

The pace of digital transformation has dramatically increased globally.<sup>3</sup> "Go digital or go home" is the catchphrase today. Fortunately,

the building blocks were already in place. For example, because Scholastic invested in the cloud in 2014, it was able to transform many of its operations to online during the pandemic. Similarly, Home Depot was able to leverage its prior investment in digitalizing operations to offer curbside pickup. NBC quickly adopted remote camera technologies, even though in-person activities such as video production were considered outside the scope of digitalization. In general, the consensus is that investment in SMAC – social, mobile, analytics, and cloud – technologies<sup>4</sup> provides firms with the infrastructure, people, and resources to accelerate transformations, and increase their resilience.<sup>5</sup> Further, the increased consumer acceptance of SMAC has also increased the ability of digital transformation consultants such as Emtec to support clients that are in consumer facing industries (e.g., Zillow).

In addition, the improvement, accessibility, and availability of these SMAC technologies over the last 5 years, enabled small businesses to relatively easily adopt and scale up digitalization.<sup>6</sup> For example, more than 5,000 smaller firms adopted Amazon Web Services in April/May 2020 to setup up call centers that apply Amazon's machine learning to scale up customer service. The digital transformation sprint also increased investment in technologies such as warehouse automation and point of sale systems that integrate self-checkout and contactless payments. Prior to the pandemic, these technologies were on a much slower cycle of development. Further, new categories of software have emerged such as workforce management tools that support oversight and incentivizing of remote workers. In all, we expect that the combination of new pandemic inspired R&D investments, and

<sup>1</sup> The EIC and two editorial board members reviewed this guest editorial.

<sup>2</sup> See Watson, R., Ives, B., & Piccoli, G. "Guest Editorial: Practice-Oriented Research Contributions in the Covid-19 Forged New Normal." *MIS Quarterly Executive*, 19(2), 2, 2020, and Mooney, J., Ives, B., Agarwal, R., Fitzgerald, B., Massey, A., Sambamurthy, V., & Soh, C. "Business school deans and institutional leader perspectives on the impacts and implications of the COVID-19 pandemic for the IS field and academic community" (2020). *Forty-First International Conference on Information Systems (ICIS)*, 3, 2020.

<sup>3</sup> Nadella, S. "Crisis requires coordinated digital response." *Financial Times*, Retrieved April 30, 2020, <https://www.ft.com/content/b645d2f8-89f9-11ea-a109-483c62d17528>.

<sup>4</sup> Rouse, M. "SMAC (social, mobile, analytics and cloud)." SearchCIO, December 2017. Retrieved December 26, 2020, <https://searchcio.techtarget.com/definition/SMAC-social-mobile-analytics-and-cloud>.

<sup>5</sup> Autio E, Mudambi R, Yoo Y. Digitalization and globalization in a turbulent world: Centrifugal and centripetal forces. *Global Strategy Journal*, 1–14, 2021.

<sup>6</sup> Mandviwalla, M. & Flanagan, R. "Small Business Digital Transformation in the Context of the Pandemic." Forthcoming in the *European Journal of Information Systems*, 2021.

prior R&D investments that have now proven their value, will likely sustain the pace of transformation.

Still, given the uncertainties, many firms tabled larger digital transformation and platform modernization projects. There was a “hunkering down” into survival mode including reallocating resources and budget to support business operations. Further, the rush to transform may also be slowing investment in and integration of infrastructure technologies such as blockchain. Finally, the success rate of transformation is uncertain and estimated by some to be only 1 in 8.<sup>7</sup> Therefore, beyond the marquee examples, it is unclear which firms and industries are doing well, how it is spreading, who is falling behind, and most importantly what factors underlies digital transformation success and failure. Emtec’s digital transformation consultancy experience provides a few initial clues, observing that successful projects consider data as the primary business driver and differentiator, operational tools are often the driver of innovation, and everyday incremental changes are as important as the quest for disruptive transformations.

Recommendations:

- Right size timelines into short, middle, and long-term bets, especially since most digital transformation projects during the pandemic were largely short-term and focused on survival.
- Enable everyday innovation and democratization by sharing critical performance data with employees.
- Employ prototyping labs to test out new ideas, and accelerate the shift from proof of concept (POC) to minimum viable product (MVP).
- Scale up (and down) quickly using cloud vendors.

## 2. Business valuation of IT must shift assumptions

The pandemic changed organizational thinking on the business value of information systems. Traditional approaches to valuing IT investments will need to review prior assumptions. Investments that were

questionable earlier or far over the horizon, suddenly were at center stage delivering immediate, even survival value. The IT function become even more critical in certain industries (e.g., financial), while dramatically increasing its role in other industries (e.g., television production). Further, new variables became much more important including workplace safety, and the mental and physical wellbeing of employees. Remote work showed firms how to reduce space costs; its success will mean that remote or virtual operation will become an important variable in future IT investments.

CEOs could now enact new societal norms, such as social distancing enabled through technology (e.g., curbside pickup, virtual housing walk-throughs). In general, the trend over the last decade for firms to consider societal and local community impact in addition to functional product benefits accelerated. Future decisions on the business value of IT will need to factor in the societal and local impact.

Recommendations:

- Identify metrics that incorporate new or previously underappreciated aspects of IT that the pandemic brought to the forefront.
- Gauge digital transformation returns on real metrics such as revenue, new businesses, and cost savings. For some, the real value of digital transformation is in driving significant operational efficiencies.
- Realize digital transformation value through cross training and up-skilling employees.
- Leverage IT’s newfound capital to drive more projects.

## 3. Data is now even more central to business models

Given the dramatic ongoing shifts in consumer, supplier, and employee behavior, we believe that the importance of data in adapting business models will only increase. The pandemic showed that firms with good data processes were able to adapt faster compared to their competitors, while exposing the ones that are behind in data management and analytics. For example, Zillow, Carvana, and Wayfair were already data centric firms, who excel in acquiring, storing, and managing data

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<sup>7</sup> Wade, M. & Shan, J. “Covid-19 Has Accelerated Digital Transformation, but May Have Made it Harder Not Easier.” *MIS Quarterly Executive*, 19(3), 7, 2020.

using efficient processes. These firms were able to apply analytics and increase the visibility of their supply chain to adapt and thrive during the pandemic. Scholastic was able to adapt to the needs of teachers and parents by delivering book orders to appropriate locations by leveraging data on school closures, distribution of in-person and hybrid classes, and variability in the impact of the pandemic on schools nationwide.

Recommendations:

- Require a more integrative planning approach given the interdependency of data, business models, and technology.
- Identify and remediate data that the firm lacked while navigating the pandemic. Apply the learnings of remediation to forecast future data needs to support post pandemic growth.
- Invest in technologies and teams so that line of business executives can directly leverage data rather than just data scientists. Cloud providers can help firms catch up.

#### 4. Business continuity and operations planning require a fresh approach

In many companies, traditional business continuity planning is often a staff exercise focusing on items such as backup sites, redundancy, personnel management and other operational issues to react to short term threats such as war, natural disasters, and cyber-attacks. Most firms did not plan for the unprecedented depth and length of the pandemic or the centrality of IT in sustaining operations. However, today, most firms have placed business continuity as an important priority.<sup>8</sup>

Further, it is clearer now that the issues are complex. For instance, “essential businesses” will require a different approach to business continuity than firms deemed non-essential by governmental organizations. For example, it was essential for NBC News to continue informing the public while other elements of the business, such as Universal Theme Parks, faced harsh restrictions, including closing their doors. A one-size-fits-all digital strategy will not work, even within firms let alone across firms and industries. Finally, it is likely that when the next

pandemic hits, individual smaller firms will still lack the digital resources for robust business continuity. Newer consortia or federal and state approaches are likely needed. In all, business continuity and operations planning needs a different approach and a more intense focus on resiliency.<sup>9</sup>

Recommendations:

- Change and adapt business continuity scenarios to reflect the unknowability of future catastrophes.
- Enable a smoother response to unexpected situations with a basic plan, tested regularly around critical business processes and supporting functions.
- Consider adding a building block approach that incorporates decentralized mixing and matching of tools to complement the traditional top down crisis management models.
- Explore alliances to leverage and pool resources to address scenarios when internal resources are insufficient and governmental resources are unavailable.

#### 5. Remote work is a reality but management and tech need improvement

As has been extensively documented, remote work quickly became a reality for most firms.<sup>10</sup> We believe that the massive A-B test of remote work has proven successful and “enforced work from home”<sup>11</sup> will continue on a voluntary basis post pandemic. There are both pushes and pulls. The economics of real estate will keep pushing firms to reduce costs. The increased access and work-life balance will sustain the pull.

The spillover effects are also compelling. For example, we believe it will increase intellectual, geographical, racial, and gender diversity as individuals in rural and other disadvantaged groupings increasingly participate in the global distributed economy. We also observe that

9 “Guest Editorial: Practice-Oriented Research Contributions in the Covid-19 Forged New Normal,” op. cit. 2020.

10 Brynjolfsson, E., Horton, J. J., Ozimek, A., Rock, D., Sharma, G., & TuYe, H. Y. “COVID-19 and remote work: An early look at US data.” *National Bureau of Economic Research*, No. w27344, 2020.

11 Waizenegger, L., McKenna, B., Cai, W., & Bendz, T. “An affordance perspective of team collaboration and enforced working from home during COVID-19.” *European Journal of Information Systems*, 29(4), 429-442, 2020.

8 Kappelman, L., Torres, R., McLean, E., Guerra, K., Johnson, V., Maurer, C., Kim, K., & Srivastava, S. “A Preview of the 2020 SIM IT Trends Study.” *MIS Quarterly Executive*, 19(4), 3, 2020.

remote work flattens the traditional corporate hierarchy, so that higher-level executives are more accessible to junior employees. In other words, it is much less daunting for a new employee to speak up in a virtual meeting where each person is a small box on the screen, than “take the elevator up to the corporate offices and knock on a senior executive’s door.”

What is still unclear though is the right balance. In other words, we do not believe that in-person work will disappear and firms will need help in thinking through how to balance in-person, hybrid, and remote work. In addition, organizations will need new ways to evaluate and direct workers. For instance, it will become difficult to rely on traditional productivity rubrics such as “time spent in the office” to judge commitment and drive. Employees will also need to develop their ability to articulate their input clearly and succinctly, as the opportunities to embellish and persuade such as discussion before and after a face-to-face meeting or in the hallway will diminish. Finally, the underlying technology still needs dramatic improvement for tasks such as virtual decision-making, employee engagement, and large group conferencing. Extending existing conferencing and collaboration tools will only go so far, which creates opportunities for new kinds of remote work tools.

Recommendations:

- Shift from “enable” to “sustain” mode by formalizing processes and adding technologies to ensure employees stay engaged.
- Have a roadmap. Enabling remote work, hybrid models, and corporate culture will keep IT in the forefront. Include in the budget exploration of future bets such as augmented reality or new ways to engage.
- Explore analytics projects that gauge employee productivity, engagement, and health issues such as burnout. Especially since measures that focus on outcomes are lacking today.
- Redesign workspaces for the new normal in conjunction with finance, HR and IT.
- Keep security and the principles of least privilege and access controls in mind while transitioning to remote and hybrid work models.

## 6. Workforce recruitment and development face new challenges and requirements

Today, the IT job market is as fluid as we have ever seen, i.e., it is a lot easier to attract talent and equally easy to lose talent. It is unclear how to retain employees who can seamlessly shift, or even overlap, jobs without shifting locations. Related to this issue, onboarding new employees during the pandemic and instilling corporate culture is challenging, and will remain so as remote work becomes more common.

We see a skills gap in the existing workforce. First, employees need training on how to use the pandemic born tech solutions. Second, there are few standard operating procedures on when and how to apply digital solutions for sensitive or critical tasks, such as the use of digital signatures in electronic documents. A large Florida school district required an almost immediate shift in BYOD and security protocols to enable thousands of students, administration and faculty to use new hardware/software and remote systems. Achieving any semblance of “business-as-usual” would have been impossible without a significant investment in end-user support.

The skill gap in IT workers is also more of a challenge, as the focus is now even more on SMAC technologies, micro services, and API-enabled software development. Remote work may also require rethinking the optimal size of development teams beyond the “two-pizza” rule.

More generally, we think that the pandemic has made resiliency, adaptability, and empathy much more important going forward. Yet, these attributes are often not associated with IT workers. Further, the need for creative solutions is accelerating the trend to value workers that can meld “art and science” – for example, apply ideation to solve complex problems that lead to changes in business models.

Recommendations:

- Use remote and hybrid work arrangements as a recruiting and retention tool, especially for non-traditional IT workers. Change onboarding processes to deliver a positive experience for new remote hires.
- Leverage training, mentoring, and new activities to drive employee engagement and development. This will require new digitally enabled tools and approaches.

- Develop expertise in a digitally enabled services delivery model. This will enable the firm to pivot post pandemic to take advantage of new cost savings opportunities or access new markets.
- Change work models from high-cost locations to less expensive ones to fund the above.

## 7. IT must play a central role in enabling societal and local responsibilities

Given the expanding digital channels within and outside the firm, CEOs have become even more aware of the need to engage with local communities, listen to employee voices, and consider the challenges faced by the larger society. Communities are increasingly looking towards business to respond to societal issues that arose from or were amplified by the pandemic such as social injustice or climate and less toward government. Digital channels also ensured that firms were quickly in the spotlight for their decisions, for instance Costco's decisions to require masks. Employee voices demanding access and inclusion — and calling out inconsistencies between what their employers say publicly versus do internally — became louder especially on internal engagement platforms (e.g., Slack, Teams), and publicly through employee posts on personal social media channels. The notion of employee generated-content and activism became more commonplace. Overall, stakeholder capitalism<sup>12</sup> gathered further momentum during the pandemic and in the wake of social justice protests sparked by murder of George Floyd.

However, it is unclear if these structural shifts will stick. We speculate that the above issues at the minimum will increasingly influence workforce recruitment and retention, and in accelerating the societal and local role of the firm.

Recommendations:

- Establish governance involving IT, communications, community relations, philanthropy, legal, and HR. Given the expanded scope and interdependencies, the approach should go beyond

standalone policies (e.g., communication, social media).

- Explore opportunities to drive consistent internal and external communication on established employee and public digital engagement platforms.
- Give voice to employees in major new rollouts of IT enabled measures and transformation initiatives.
- Segment returns on digital investment to incorporate societal and community impact in the context of financial gain.

## Conclusion

We identified seven post pandemic implications of digital transformation, sustainability, business value, data centrality, business continuity, remote work, workforce, and the expanded societal role of organizations. The pandemic greatly accelerated these existing trends. We also present specific recommendations to CIOs. Many of these are sound business practices that transcend crises; the pandemic has reinforced their import. The implications and recommendations also suggest research topics for scholars. Organizations will require swift attention to these implications and recommendations to survive and thrive post pandemic. Pooling ideas and resources similar in spirit to the academic and industry collaboration that produced this editorial could generate swifter progress.

## Acknowledgements

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12 Freeman, R. E., Martin, K., & Parmar, B., "Stakeholder capitalism." *Journal of business ethics*, 74(4), 303-314, 2007.

13 Mandviwalla, M., Desai, D., Descano, D., Dignan, L. Kearns, C., and R. Sankaran., "The Industry Perspective on COVID-19." *Forty-First International Conference on Information Systems (ICIS) Proceedings*, 5, 2020.

## About the Authors

### Munir Mandviwalla

Munir Mandviwalla is Associate Professor, Cigna Fellow, and Executive Director of the Institute for Business and Information Technology (IBIT) at the Fox School of Business, Temple University. Mandviwalla has published articles on collaboration, social media, training, peer review, universal access, and design science in journals such as MIS Quarterly, Information Systems Research, and Journal of the Association for Information Systems, supported by grants from NSF, SIM, Lockheed Martin, IBM, Microsoft, Cigna and others.

As IBIT executive director, Mandviwalla engages with industry on knowledge and human capital development through programs such as the Digital Fireside Chats, The IBIT Report, Analytics and Cyber Analyst Challenges, and the Digital Innovation Foundry. Recently, IBIT started a no-cost digital transformation service for small business and non-profits.

Mandviwalla holds a BSc from Boston University, a MBA from the Drucker School of Management, and Ph.D. from the Center for Information Systems & Technology, at Claremont Graduate University.

### Dinesh Desai

Dinesh Desai is the Executive Chairman and Founder of Emtec, Inc., an IT consultancy firm. Starting his career in the chemical industry, Dinesh managed several business units at American Can and Atlantic Richfield Corporation.

After leaving the corporate environment, Dinesh and his partner built up a \$3 million public company division into a \$170 million aircraft parts manufacturer. After a successful exit, Dinesh focused on IT services, in which he and his team have acquired and transformed multiple firms into Emtec, growing from a low-margin reseller into a high-value \$200+ million services organization.

Dinesh is the founder and President of the Pardi Taluka Welfare Charitable Trust, which established the Swatantra Senani Bhagwanji Dahyabhai Desai (SSBDD) high school in his village Vatar, Gujrat, India. He holds a BS in Chemical Engineering, Indian Institute of Technology, Mumbai, MS in Chemical and

Industrial Engineering, Montana State University, and a MBA, Temple University.

### Linda Descano

Linda Descano is Executive Vice President at Red Havas, and leads the corporate communications and executive visibility practice. Since joining Red Havas in 2015, Linda has provided senior-level communications counsel on merged media strategy, corporate communications, and content marketing to clients across multiple industry sectors.

Previously, Linda spent 20+ years at Citi, serving in various senior-level positions including Managing Director and Global Head of Content and Social, President & CEO of the award-winning Women & Co. business, and Director and Portfolio Manager of Social Awareness Investment.

Linda serves on the board of directors of The Content Council (and member of the Pearl Awards jury) and New York Women in Communications and is an adjunct professor for the Fox School of Business Digital Innovation in Marketing M.S. program. Her industry awards and honors include PR News' 2018 PR Professional of the Year and Campaign U.S.'s 2018 Digital 40 Over 40.

### Larry Dignan

Larry Dignan is Editor in Chief of ZDNet and Editorial Director of ZDNet's sister site TechRepublic. He was most recently Executive Editor of News and Blogs at ZDNet. Prior to that he was executive news editor at eWeek and news editor at Baseline.

Larry has also served as the East Coast news editor and finance editor at CNET News.com. Larry has covered the technology and financial services industry since 1995, publishing articles in WallStreetWeek.com, Inter@ctive Week, The New York Times, and Financial Planning magazine. He's a graduate of the Columbia School of Journalism and the University of Delaware.

### Chris Kearns

Chris Kearns is Senior Vice President in Operations and Technology at NBCUniversal where he leads the organization charged with delivering Workplace Experience and Solutions. In this role, Chris is responsible for overseeing the strategy, engineering, and operations for the



corporate devices, collaboration tools, facilities and global security systems. This involves technology support for; the film brands, TV entertainment productions, NBC Sports, NBC Olympics, NBC News, MSNBC, CNBC and owned stations and Universal Parks around the globe.

Chris has over 20 years of industry experience in IT services. Prior to joining NBCUniversal, Chris Kearns served as Global Head for Hosting Services for the Vanguard Group and prior to that was SVP of Enterprise and Cyber Solutions at Leidos and Lockheed Martin serving U.S. Department of Defense customers.

Chris earned his master's in Information Science from Penn State University and bachelor's degree in electrical engineering from the University of Scranton.

### **Raghu Sankaran**

Raghu Sankaran is Chief Information Office (CIO) and Chief Information Security Officer (CISO) at Scholastic. He leads application, corporate infrastructure, network operations, workforce productivity, collaboration solutions, and global corporate information security.

Previously, as Director, Healthcare Enterprise Platform, Siemens Healthineers, he drove the conceptualization, design and development of a cloud based multi-tenant platform deployed in 300+ major hospital systems. Raghu also headed up Intuit's Enterprise Commerce Platform and the Enterprise Order System Middleware groups, which supported all of Intuit's major sites with 450K concurrent sessions, processing more than 110 million transactions. As Technology Director at Sapient, he helped shape the retail eCommerce platforms at JCPenney and Saks 5th Avenue.

Raghu holds a master's degree in Engineering and Operations Research from the University of Maryland, College Park and a Bachelor's degree in Engineering from the Indian Institute of Technology, Delhi.