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Revista CEA, vol. 6, no. 12, 2020

Instituto Tecnológico Metropolitano, Colombia

Available in: <https://www.redalyc.org/articulo.oa?id=638167728001>

DOI: <https://doi.org/10.22430/24223182.1700>



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Digital Transformation: A Path to Economic and Societal Value

Transformación digital: un camino al valor económico y social

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Abstract: Digital transformation can enable the creation of substantial business and societal value. However, it entails more than simply the use and application of technology. Digital transformation implies a change in mindset, attitudes, and culture, and doing so successfully requires leaders to overcome many challenges. New technologies such as artificial intelligence and machine learning are accelerating the pace of this transformation, and leaders must position their organizations strategically to exploit them. For society, the critical sectors of healthcare and education are poised at an inflection point of digital transformation today, further precipitated by the global pandemic of 2020. Educators must ensure that tomorrow's leaders are equipped to drive digital transformation as an urgent strategic imperative in their organizations.

Keywords: Digital transformation, Business Value, Societal Value.

Resumen: La transformación digital puede permitir la generación sustancial de valor social y de negocio. Sin embargo, implica más que el simple uso y aplicación de la tecnología. La transformación digital implica un cambio de mentalidad, actitudes y cultura, y hacerlo de forma exitosa le exige a los líderes superar muchos retos. Las nuevas tecnologías como la inteligencia artificial y el aprendizaje de máquinas están acelerando el paso de la transformación y los líderes deben posicionar sus organizaciones estratégicamente para explotarlas. Para la sociedad, los sectores críticos de la salud y la educación están hoy en un punto de inflexión de la transformación digital, precipitado por la pandemia global de 2020. Los educadores deben asegurarse de que los líderes del mañana estén preparados para dirigir la transformación digital en sus organizaciones.

Palabras clave: transformación digital, valor de negocio, valor social.

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On the Creation of Business Value

The expression 'digital transformation,' has recently assumed considerable significance in business conversations. But what exactly does it mean? A conventional approach would be to define digital transformation as a fundamental change in the strategy, business model, tactics, and operations of an organization constructed around and enabled by the power of digital technologies. It is a shift that takes advantage of the incredible variety of new capabilities that information technology and data can offer after a short period of less than 75 years since business computing started.

But I also believe there is something more nuanced about digital transformation that is sometimes missed: it implies a change in mindset, in attitudes, and organizational culture. It signals a willingness to adopt and innovate with technology, the acknowledgment that information technology can be a strategic and competitive differentiator. Only when

this change occurs can an organization truly claim it has been digitally transformed.

Succeeding in digital transformation requires the attention, dedication, and commitment of the C-Suite. This is a pervasive, all-encompassing organizational metamorphosis of which technology is only one, albeit critical piece. I think about successful digital transformation as a function of the trifecta of people, process, and technology executed within an organizational culture that supports and encourages innovation and creativity. All business leaders need to understand that digital transformation cannot be an IT-led effort?it needs executives from each and every department to educate, encourage, and motivate their staff to think creatively and innovatively. It requires a reconceptualization of how business processes can be executed across the enterprise with greater speed, lower cost, and higher quality than before by leveraging the power of technology and data. In short, every C-suite executive must be a champion of this type of thinking.

Infusing a ?digital-everywhere? culture across an enterprise is not easy. Employees will frequently resist the change or perceive it as a threat. The technologies themselves can be complex and difficult to implement. Process redesign, a critical piece of transformation, requires detailed analysis and broad participation by knowledge workers: ensuring that the teams are constructed correctly and appropriately incentivized to perform at a high level can be a challenge.

Where does technology feature in digital transformation? Technology is an enabler, a facilitator. It is the means to an end. By itself, acquisition and implementation of advanced technology rarely results in digital transformation. Where technology has the potential to create value is at the intersection of strategy and competitive advantage. Understanding the ways in which technology can generate competitive advantage by creating new products and services, building stronger customer relationships, changing the business model to enable greater efficiencies or reach new markets?those are the touchpoints where competitive advantage can be realized. Developing the innovation and lateral thinking necessary to be able to disrupt a traditional business model and conventional work practices is frequently the most significant obstacle to digital transformation. The technology is the ?relatively? easier part. For example, ?platform? business models, enabled by powerful infrastructures, deep relationships, and high-quality data, offer incredible potential to helping companies re-conceptualize how they do business. These models will have an impact on competition; the challenge is to understand how to transform traditional mindsets about how business gets done.

Today, we are in the decade of big data, artificial intelligence (AI), and machine learning (ML). We are at a tipping point, with the remarkable confluence of powerful and inexpensive hardware and storage, the digitization of every aspect of business, social, and personal transactions that have created vast treasure troves of digital data, and rapid advances in algorithms and statistical methods. In the next few years, AI/ML

technologies will have a profound impact on how business is conducted. They will be drivers of digital transformation, disrupt existing business models, and producing winners and losers. We are already observing their widespread impact: from robotic process automation in financial services, intelligent bots, and software agents for customer service to unprecedented personalization in digital advertising. Companies that are early adopters of AI and ML will gain competitive advantage and can effectively incorporate these technologies into their business processes. In short, the successful 'digital transformers' are positioning themselves to capitalize on these technologies.

The time to embark on a digital transformation for any company was yesterday, not today and certainly not tomorrow! In this hyper-competitive environment, with disruptors and competitors emerging from very unexpected corners, understanding how to leverage the power of digital capabilities is a strategic imperative that no leader can afford to ignore. One only has to look at the demise of leading companies such as Kodak and Blockbuster to realize that competitive advantage can easily be eroded by technological innovation.

Digital Transformation: Creating Societal Value

Thus far I have described digital transformation from the lens of business, which is undoubtedly critical. Indeed, when one thinks about what sectors have been digitally transformed, the typical examples that come to mind are generally from the financial services and retail sectors, both of which have been early adopters of computing technology. In contrast, in other social sectors of immense significance, such as healthcare and education, the pace of digital transformation has been glacial. But we are at an inflection point today! The digital transformation of these sectors, in progress at this very moment, has the potential to create both economic and societal value and improve social welfare in unprecedented ways.

Let us consider the case of healthcare first. The less understood and untold story about digital transformation takes place in this sector of the economy, which has immense economic and societal significance. It affects the lives of each and every individual on the planet. As nations and health systems struggle with limited resources, technology and data can play a pivotal role in addressing gaps. Healthcare's digital journey started less than two decades ago and promises to change the practice and delivery of healthcare in ways that can impact health outcomes, patient safety, quality, and cost in multiple positive ways. My own research at the Center for Health Information and Decision Systems has revealed remarkable opportunities for truly achieving significant gains through digital technologies, data, and health analytics across the entire ecosystem of industry players, including insurance providers, pharmaceutical manufacturers, hospitals, and physician offices. Today, everyone is enthusiastic and optimistic about what ML and AI can do in healthcare, from treating and managing disease and helping insurance

companies make more informed pricing decisions to empowering healthcare consumers. The possibilities are endless.

A second social sector positioned to be transformed in unimaginable ways is education. Value can be unleashed in at least three ways: informing, empowering, and democratizing. Education offered through technology-mediated channels has the potential to inform and empower billions across the planet. Further, as a relatively low-cost delivery channel, in under-resourced settings, online education can help overcome disparities in access imposed by location, infrastructure, financial, or human capital shortages. Online platforms such as Coursera and edX have already demonstrated that education *at scale* is possible. Digital transformation of this sector can perhaps address a very basic global challenge: ensuring that 100% of the world's population is literate.

In both healthcare and education, we have witnessed the power of digital technologies vividly during the 2020 pandemic. It is time for policy makers to take the lead to build on and continue this progress.

What Must We Do as Educators?

As a leader of a business school and an educator, I am often asked about the implications of digital transformation for how we educate students. My response is simple: tomorrow's leaders must be ready and equipped to tackle digital transformation head-on. They must have the business AND tech-savvy to navigate the ever-changing and evolving world of technology. Every leader today has to appreciate the importance of technological literacy among the workforce. The most creative ideas will emerge when front-line workers can match technological capabilities to their talents and detailed understanding of the work they perform and unleash their ingenuity.

What should we be doing? We must develop curricula that educate students about the varieties of digital technologies available today and help them understand the capabilities offered by each. They should be informed about their relative strengths and weaknesses and be presented with rich, compelling examples of how they have been used and are being used to produce economic and societal benefits. And, of course, we should underscore the message that technology by itself does not create value: it is only when artifacts and data are combined with complementary changes to culture, processes, and strategy that an organization can claim to be on the path to digital transformation.