WHITE PAPER

Digitalization Just Went Viral: What Is Your Organization's Digital Readiness Level?

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Many business leaders who sponsored ideas to employ innovative technology in their organizations in years past experienced organizational inertia. They faced big risks in pushing ahead and often struggled to achieve buy-in among their employees for new ways of doing things or new directions with new growth potential. Today, these and other organizations may face even bigger risks if they do not push ahead. However, just because everyone now sees the need for digitalization does not mean an organization is any more prepared to make the necessary changes.

There is plenty of evidence that organizations have failed miserably at implementing digital change. According to a global survey of over 1,000 senior executives last year, one of the top ten fears identified as obstacles to meeting the challenge posed by "digital born" competitors was that "…existing operations, legacy IT infrastructure, and insufficient embrace of digital thinking and capabilities may not meet performance expectations."[1] Another survey of CEOs estimated that 70% of digital change projects don't manage to achieve their goals, and that of the $1.3 trillion spent on digital transformation in 2018, $900 billion went to waste.[2]

Organizations have always had to manage change and have faced similar difficulties even before the onset of the digitalization age. Businesses often turn to consultants for help in these circumstances, and do so now more than ever since, outside of IT-specific fields, technology expertise may not be available in-house.

1   https://erm.ncsu.edu/library/article/top-risks-report-2020-executive-perspectives Top Risks Report 2020: Executive Perspectives on Top Risks for 2020, NC State University, December, 2019.

2   Tabrizi, Behnam, Ed Lam, Kirk Girard and Ver Ahh ok! Kann ich non Irvin, "Digital Transformation Is not about Technology," Harvard Business Review.

Unfortunately, consultants for digital transformation are often chosen based on apparent technological prowess and familiarity with applications ranging from AI and machine learning to data analytics, software solutions, wearable devices and beyond. However, a 2017 study of technology integration initiatives found 50-75% of implementations failed in terms of quality, flexibility, and reliability as a result of inattention to human-related issues.[3] A case study of a digital transformation effort in South Korea also concluded that, "manufacturing firms largely fail to achieve successful implementation and grasp its full benefits due to lack of understanding of the human and social related issues".[4]

As with any organizational change, digitalization must contend with the difficulties inherent in changing institutionalized patterns of activities or established patterns of thinking.[4] These include individual and organization-level barriers that hinder implementation, such as reluctance to change practices, concern about errors, and concerns about loss of productivity during the initial implementation phases.[5] Other barriers include a lack of employee involvement in the implementation process and the resulting lack of awareness and support among personnel. The complexity and variability of change processes and resource allocations further amplify the challenges.

As it turns out, digital transformation is not only about technology. What truly leads to success and gives companies a competitive edge relates to the human side of the organization. But as we have seen in many digitalization discussions, people are often missing from the equation.

Humans Are the Hub

Human attitudes toward technology range from enthusiastic to distrustful. Some view technology as offering increased control, flexibility and efficiency and order their lives around the number of steps they have left to take or rely on voice activated assistants. Others sense a loss of control around technology and are skeptical about its ability to work properly. They avoid any and all such devices, fearing unauthorized surveillance, data exploitation, and identity theft. In the end, their mindset and perception toward digitalization defines the utility of the technology. This means that we only achieve digital readiness when we have people ready to embrace it.

Figure 1: Humans as the missing element

3   Charalambous, G., Fletcher, S., and Webb, P. (2017) The development of a human factors readiness level tool for implementing industrial human-robot collaboration.

4   Hur, J., Cho, W, and Bickerton, S. (2019). The "Smart Work" myth: How bureaucratic inertia and workplace culture stymied digital transformation in the relocation of South Korea's capital.

5   Rizer et al. (2015) Top 10 lessons learned from electronic medical record implementation in a large academic medical center. Perspectives in Health Information Management. 2015 Summer.
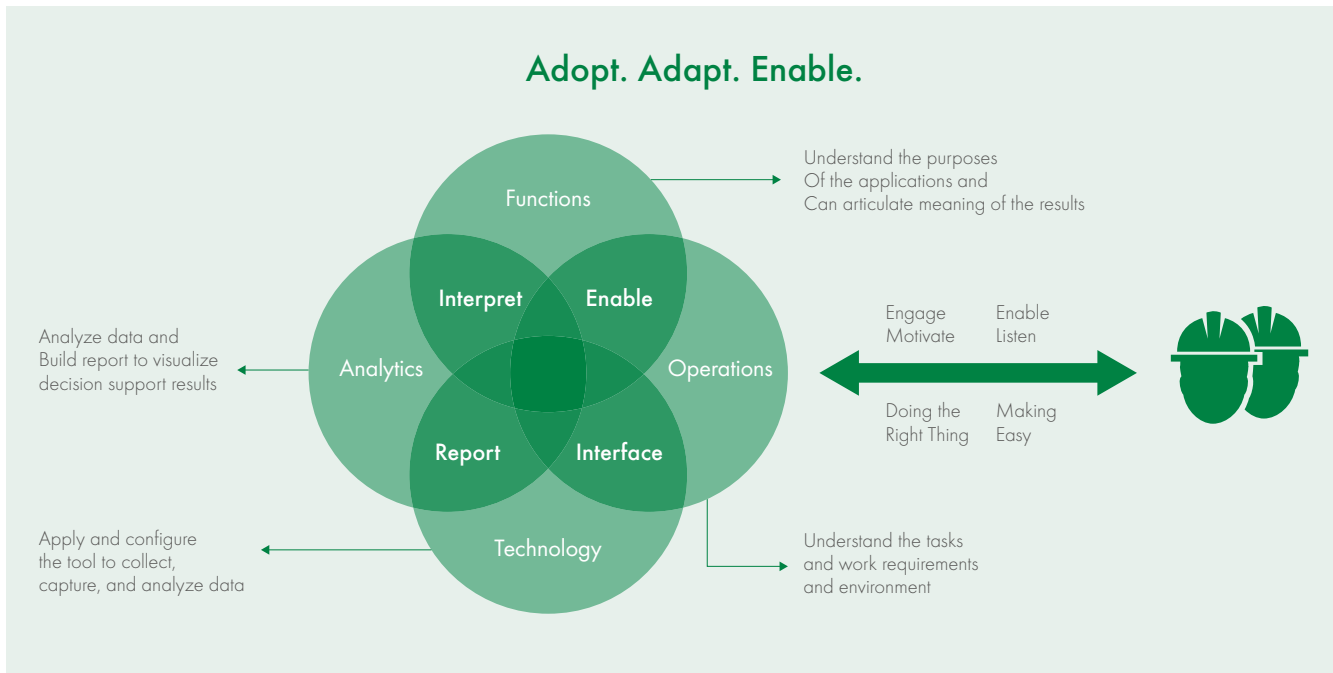
Adopt. Adapt. Enable.

Figure 2: Human-technology process interface

"Readiness" is the state of being fully prepared for something: fit, primed, and standing by. It also means being prepared to accept and adopt something with enthusiasm, eagerness and awareness – all human attributes. It is both people's willingness and ability to use, maintain and apply technology that will make it a success or failure. To harness this human potential, it is important that leaders inspire trust by engaging employees in co-defining the purposes and need for change and new technology. This can help people see innovation as an opportunity rather than a threat, thus fostering readiness for digitalization. When people feel valued by their leaders, trust grows. Leadership must replace employee anxiety toward change and fears around job security with curiosity and a sense of purpose so people can genuinely take part in the organization's digital journey.

Developing Learning Agility Is Key

When the winds of change rage, some build shelters while others build windmills.

—A Chinese Proverb

In order for humans to interact effectively with their organization's chosen technology, they need to cultivate an attitude of curiosity and develop the mental agility necessary to respond to and benefit from rapid technological advancements. Mindful organizations therefore invest in developing learning agility among both leaders and the workforce. People who are high in learning agility are sensitive to the unexpected, thrive on uncertainty, embrace change, and seek out and apply learning from unfamiliar experiences. Research has shown that complexity, unpredictability, and ambiguity are key drivers to develop adaptive behavior. Leaders who thrive in constantly changing environments demonstrate higher levels of independence, initiative, innovation, and confidence.[6]

Yet, agile leaders and learners must be supported by agile institutions.[6] This speaks directly to the fact that the best learning environments go beyond the classroom—physical or virtual—to include the entire ecosystem, from workspace design to leadership support for innovation and building a learning culture. To encourage learning and exploration and adaptation of new technologies, organizations should provide a safe space to experiment and enough time to scale to explosive output.

Often, due to the huge investment requirements, companies expect, if not demand, quick and substantial outcomes and ignore strategic

6   De Meuse, K., et al. Learning Agility": A construct whose time has come, Consulting Psychology Journal: Practice and Research, 2010, Vol. 62, No. 2, 119 – 130.

incremental gains. This expectation – spoken or unspoken - indirectly creates fear and barriers to innovation and technology adoption. The seemingly reasonable expectation of "taking risks = high returns" not only is an oxymoron, it inhibits learning and exploration and may be one of the factors that sets the 'digital-born' apart from the resource-rich matured establishments.

The investment and effort required to build a learning-minded culture and eco-system will pay dividends down the road, not only for adopting new technologies, but minimizing drama and confusion when the inevitable glitches occur. A curious, learning-oriented workforce will be quick to see the context around the glitches. They are slow to blame and more resilient and patient when technology may at first be slow to deliver on its promises.

The Backbone of Digital Transformation: Well-Articulated Values

We have grown to expect technology to be able to solve multi-faceted problems in our daily lives. We add or delete apps on our phones according to our needs, likes, and use, interacting with technology in highly individual and personal ways. Indeed, it is not too far-fetched to describe the "relationship" between humans and their personal technology as intimate coexistence.

Business managers often desire modern technology for its ability to provide extraordinary growth, to allow for more visibility and control, to deliver challenging and time-consuming work with ease, and the list goes on. Yet, unlike the adoption of personal digital devices, where the decision maker, buyer and user are the same person, adoption of technology for business operations affects completely different groups, from the decision to buy, to the purchasing process, eventual implementation and ongoing use. If the reasons behind the decision to adopt a specific technology are not understood or valued by the eventual users, trouble could ensue. For business operations, therefore, it is critical to:

> Align on the business value and articulate the collective 'why' the new technology is needed;[7]
> Step back to assess how the technology interacts with and impacts the various users and stakeholders throughout its life-cycle;
> Identify what supporting elements – IT infrastructure, talents, functions, activities, resources, process changes – need to be

put in place to fully leverage and realize its value;
> Clarify expectations, anticipate errors, and assess the possible unintended consequences.

Together with stakeholders, leadership needs to consider what success looks like and ask fundamental questions such as:

> What measures will fulfill the purposes?
> What data are needed for those measures?
> How is that data captured?
> Who contributes to the data?
> What will the output be used for?

> Only when the necessary and expected outputs are clearly defined and articulated can the business truly develop its technology and human strategy to reap the full benefit.

Furthermore, this step often propels businesses to further explore the fuller potential of what technology can bring.[8]

Identifying Talent and Building the Team

Among the top ten concerns that executives expressed on a digitalization survey, "insufficient embrace of digital thinking and capabilities" was ranked number 2. Often it is a challenge for organizations to identify the needed skillsets, to find the right fit, and quickly determine what upskill is needed. Once again, more and more discussions focus on learning agility as a critical talent attribute for the digital era. Much of the research suggests that a coalition approach is best when a company embarks on digital change. This enables open lines of communication through champions who already belong to the business.[8] The following questions can serve as guideposts for coalition formation and discussion:

> What use cases and purposes may the technology serve and under what conditions?
> How will our needs evolve? How will the technology evolve?
> Who interacts with the technology and in what ways?
> Who is affected by this technology?
> What may need immediate attention and problem solving?

7   Appelbaum, S. et al. (2012) Back to the future: revisiting Kotter's 1996 change model. Journal of Management Development, Vol. 31 Iss: 8 pp. 764-782.
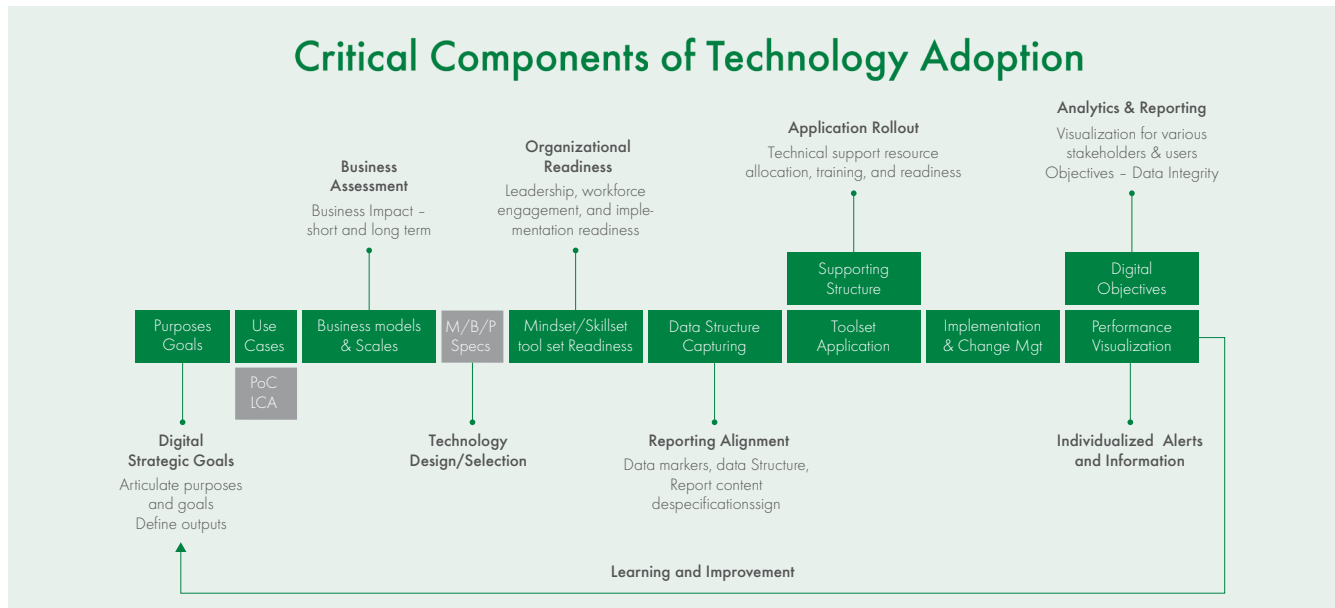8   Charalambous (2017)

Critical Components of Technology Adoption

Figure 3: Technology adoption process

> What upskilling potential will connect with employees?

> What are some hidden safety and security risks and possible unintended biases?

> What skills and expertise are needed to discern and anticipate those hidden and unintended risks and biases?

This coalition of employees have a stake in the outcome. Some will share duties in technical development, like protocols for data protection or supporting users. Some will assist the organization through selection and hiring for new roles or organizing onboarding. Some will provide support by maintaining the life-force of the business, knowing what motivates or irritates employees and customers, or what the core needs are.[9] Finally, coalition members should focus attention on the end users' perceptions regarding ease of use, social influencers, and cognitive processes.[10] The involvement of a broad coalition creates a shared sense of responsibility, and helps the technology pull the organization along instead of pushing into its fabric.

Selecting the Right Tools

Technology buzz causes many business leaders to worry about being left behind or to act too quickly to invest in vaporware. It is easy to become distracted by shiny objects when technology sounds so promising. Therefore, it is critical to take a hard look at what precisely the organization wants to achieve and how best to achieve it. Some of the questions listed above provide a good starting point for these discussions.

Experts as well as internal and external customers can weigh in on what will be necessary for success. They should be clear about what business leaders, customers and users want to accomplish and why, and also identify pain-points and opportunities to delight. They should consider the costs of not bringing in innovative technology and what over-confidence biases exist for the use of technology as a solution. After a thorough discussion, each solution can be assessed for its suitability for those purposes, the estimated costs and benefits, and the potential for added value.

One caveat is to remember that functionalities are only one aspect of the whole. A carefully identified set of comprehensive criteria should be considered, such as fit for purpose, user demand and friendliness, data quality and transferability, security, compatibility, etc.

More and more technology companies now focus on human-centered design and innovation for this reason.[11,12] Technology that is fulfilling necessary functions should not create additional challenges and burdens to humans.

9   Rizer et al. (2015) Top 10 lessons learned from electronic medical record implementation in a large academic medical center.

10 Lin, C., Shih, H., and Sher, P. Integrating technology readiness into technology acceptance: The TRAM model. (2007). Psychology & Marketing, Vol. 24(7), July 2007

11 Slansky, D., Siemens Digital Industries Software Virtual Analyst Event Focuses on Human-centered Innovation ARC Advisory Summary Paper, July 2020.

12 Slansky, D., Dassault Systèmes Virtual Analyst Event: Experience Is Human, ARC Advisory Summary Paper, July 2020

Preparing for Rollout

A sloppy rollout can undo all the work invested to prepare people, refine the culture and adopt a strategy for the proposed technology. While it is unlikely that any technology rollout will be perfectly smooth, the gap between the existing support systems and modern technology can be challenging to bridge. The complexity and variability of the change processes and resource allocations may further complicate matters.

There can be lofty expectations about the speed and degree of the technology's benefits. Processes may be overhauled, and new competencies built, but habituation and fluency take time. The design team needs to define activities and expectations to reinforce and adjust. Managers must be vigilant to support the adaptation of the new processes and prevent old habits from finding new ground.

Prior to roll-out, it is critical to prepare affected groups for technology and support readiness. This includes assessing their acceptance and willingness to use the technology, their skill and problem-solving ability, and their cultural appetite for change.[13] A good assessment will present opportunities for leaders to provide support and ensure that individuals have a sense of shared responsibilities and collective purpose. Such an assessment could inform the organization as to where and how to start.

Launching a pilot project is an excellent way to learn, make corrections on a small scale, and reduce investment risk. In this case, a small group of independent, capable, and flexible team members that can be organized to incubate a technology and work out kinks in usability, integration, and scalability is ideal. Digital champions can be selected from this team to act as communicators for the broader roll-out.

Digital Success Comes From the Synergy of Right Mindset, Skillset and Toolset

Simply implementing technology does not constitute a successful digital transformation. By focusing on preparing people for change, organizations invest in developing agility and resiliency in the face of inevitable difficulties.

> Successful digital transformation happens when humans are ready, willing and capable of fully applying the right technology and benefiting from it.

13 Lin, C., Shih, H., and Sher, P. Integrating technology readiness into technology acceptance: The TRAM model. (2007). Psychology & Marketing, Vol. 24(7), July 2007.

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DEKRA Consulting

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Since organizations require diverse approaches to protect their operational business environment, data, people and processes, we designed our services as multi-faceted as your needs to support you in any safety issue.

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