Enabling the Digital Enterprise

A CIO Checklist for Success

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Digital disruption is crashing like a tsunami over almost every organization, regardless of the corresponding industry segment or geographical location, placing the CIO and the IT organization at ground zero. New business models, products and services are being created at breakneck speed, and IT is at the center of them all. The way in which the CIO reacts has a significant impact on how the organization survives the wave. What are the challenges, and what can CIOs do to position their organizations for success?

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Introduction

For many organizations it is no longer a question of if or when digital disruption will impact their business. It is now about how this will happen and what they can do about it. In a recent survey of IT executives conducted by Harvey Nash and KPMG ([Harv15]), 62% of respondents said that their business was already being disrupted or would be within two years. Yet when asked about their enterprise-wide digital strategy, only 27% indicated that they were actively pursuing one. The fact is that unless you are a greenfield startup, responding to digital disruption presents CIOs with a number of significant challenges to overcome.

Organizations have faced major technology waves before, starting with mainframe computers in the 1960s, followed by minicomputers and decentralized computing in the 70s, PCs in the 80s and client server in the 90s. More recently, the emergence of the Internet has led to webbrowser-driven networked computing. It would be easy to dismiss the current shift to smartphones and tablets as just the next step in the evolution of technology, similar to all others before it. However, we think that things are profoundly different this time. Up until now, these paradigm shifts have been primarily driven by relentless advances resulting from Moore's law ([Moore]) which states that, about every two years, computers and related technologies (e.g., memory, storage) become twice as powerful, smaller, cheaper and more connected. Digital disruption is much more than just new technology.

What Makes Digital Disruption Different From Past Technology Waves?

New technologies are clearly at the heart of digital disruption. Social technologies like Facebook, Twitter, and LinkedIn enable businesses to engage with customers and employees, share information, solve problems in real-time and build lasting relationships. Smartphones and tablets are changing the way people work and behave, making just about any location with internet access an office, retail outlet or bank branch. The information generated by all mobile and social media interactions provides a rich source of data that can be analyzed and used to create custom marketing pitches and products attuned to the individual's unique requirements. In addition, cloud technology has enabled a wide array of everything-as-a-service (XaaS) offerings that significantly reduce the cost and time required to provision everything from infrastructure to complete applications solutions.

But disruption goes beyond technologies. In all of the prior technology shifts, such as mainframe to minicomputers to client/server etc., an IT organization with specialists was required to sit between technology and the business in order to provision and support solutions. Today, people are much more tech-savvy. So-called "millennials" (born after 1982) have grown up around computers and are comfortable with them. This combination of tech-savvy users and XaaS offerings now allows businesses to procure and provision technology-enabled solutions without the involvement of IT. They also have higher expectations as a result of their own experiences with their use of personal technologies, such as the ability to download an app for free or for a few dollars from an app store,

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and begin realizing value immediately. They are now looking for the same kind of experience at work.

At the same time, a firm's external customers have similar expectations. They want to be able to conduct their business (buy a book, download a movie, deposit a check) anytime of the day or night, seven days a week using their smartphone, tablet or PC. They expect to be able to get immediate help by conducting a real-time chat with a customer-support specialist, and they share their experiences – both good and bad – widely on social media. Therefore, we define the Digital Enterprise as the organization that puts the Customer First anytime, anywhere, anyplace, based on NextGen (at least millennials) customer expectations; see Figure 1.

Economics also play a role, as hardware has truly become commoditized and so inexpensive that compute cycles and storage can be rented for pennies an hour on demand. In fact, it has spawned a new "everything-as-a-service" business model where just about everything from raw compute cycles through enterprise applications can be rented. This has enabled the business to bypass the capital budgeting process and procure technology-enabled solutions directly with a corporate credit card. Often, the end result is a situation where the business gains new capability faster and more cheaply than it would have done if it had followed the traditional route of using its internal IT organization.

The combination of new technology, a tech-savvy population and economic factors is what makes this different from past technology shifts. It has led to the democratization of IT, where IT-enabled solutions are available to everyone. This is creating a number of serious challenges for CIOs.

Major Challenges for CIOs

CIOs are at a crossroads. Down one road CIOs assume a leadership role that harnesses digital disruption and turns IT into a source of innovation, working with business leaders to develop new products, services and even business models. Down the other road, CIOs preside over an increasingly marginalized IT as its business customers go elsewhere for innovation, while they still manage a shrinking portfolio of legacy systems with diminishing value. However, CIOs who choose the road to digital leadership must first overcome a number of challenges:

Disintermediation of IT

Maintaining the relevance of IT and driving the technology agenda have become increasingly difficult, as compelling XaaS solutions are now widely available, ranging from Human Resource (HR) to Enterprise Resource Planning (ERP). They can be procured directly by line-of-business users and paid for out of their operating budgets. When they compare this with their typical IT experience where projects are almost always over budget, consistently late, and often fail to meet expectations, they question why they need IT. Over time, these business-procured solutions consume a larger and larger portion of the technology budget. Today ([Harv15]), 20% of firms responded that more than a quarter of their IT spending was controlled or managed outside of the IT organization. This figure is up from 14% a year ago.

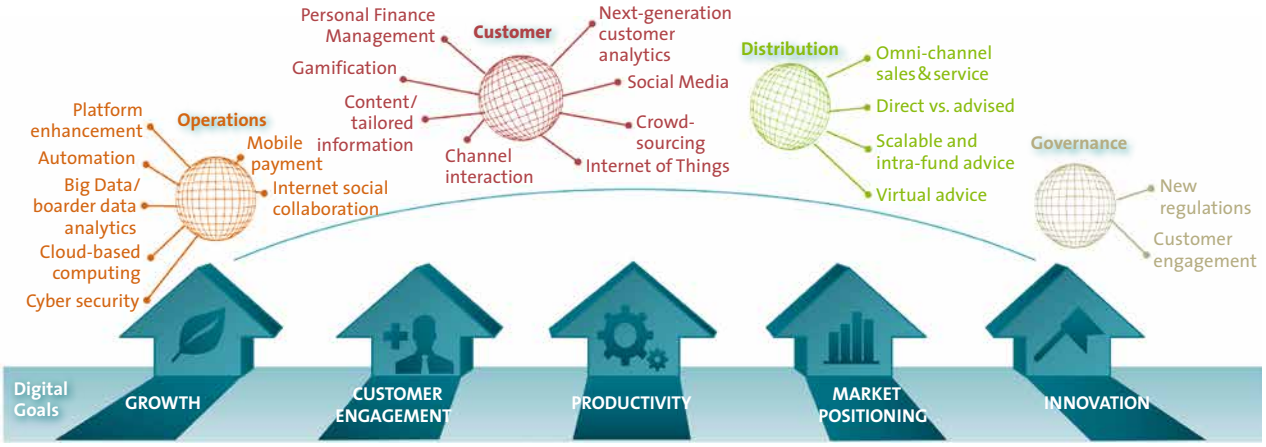

Figure 1. **The customer is at the center of digitization.**

The growing influence of the Chief Marketing Officer and the appearance of Chief Digital Officers (CDOs), coupled with the increasing shadow IT described above, are eroding the CIO's influence over the technology agenda. All of the previous hard work that went into developing an enterprise architecture, implementing technology standards and nurturing strategic vendor relationships is being undone as islands of automation proliferate in the name of agility and responsiveness on the part of the business. CIOs will be challenged to re-invent IT with new operating models and organizational structures that can respond to the business needs for agility, speed and innovation. This paradigm shift might eventually even make the CIO redundant, along with information management and other classical intermediary functions ([Muts14]).

Mis-aligned IT operating model

Many IT organizations have not kept pace with the needs of their business stakeholders. IT simply takes too long, costs too much and consistently fails to meet expectations. The cause goes well beyond poor project execution. A recent KPMG survey ([KPMG13]) among more than 600 IT Leaders found that systemic issues are the main reason for a lack of IT innovation, with 66 per cent of respondents citing environment or *structure, processes and standards* as primary causes. The current IT operating model lacks the agility, flexibility and speed to deliver high-quality solutions to support digital transformation.

Shortage of digital talent

Digital transformation requires new roles and new skills for an IT organization, as well as placing increased importance on some existing roles. In addition to having to master emerging technologies, IT will have to adopt new ways of working, new methodologies, and ensure a shift in emphasis from building solutions to acquiring and integrating them. Unfortunately, many of the skills required, such as user experience design, security, mobile and cloud, are in very short supply and some of the new roles, such as solutions broker, product manager and service manager require skills that may not be found in current IT organizations. In a recent KPMG outsourcing study, access to skills was the third most cited reason given for outsourcing, after cost savings and quality improvement ([KPMG14]). Human capital management, acquiring, developing, retaining talent will require more of the CIO's time.

Increased uncertainty

As the business directly procures externally sourced solutions, CIOs must wrestle with a host of issues as a result. These include the need to possibly integrate these new solutions with existing applications and data, ensure that they are included in any disaster-recovery and business continuity plan, determine that they comply with any internal and external policies and regulations, and that they are not duplicative with existing solutions elsewhere within the enterprise. In other words, the CIO needs to protect the overall interests of the enterprise. Additionally, the combination of bring your own device (BYOD), increased use of mobile applications, experimentation, stepped up regulation, and growing cyber threats – including state-sponsored cyber terrorism – have created an environment of increased risk. The criticality of IT to the business and the enormous potential cost of security breaches and data theft have moved the topic to the Board of Directors' meeting agenda. CIOs will be challenged to strike a balance between risk avoidance that creates barriers to innovation, and one that manages risk to an acceptable level and encourages experimentation.

Legacy infrastructure

Demand from the business for the new and innovative solutions needed for digital transformation requires an IT infrastructure that can be provisioned quickly and cheaply. In addition, it must be able to be scaled up and down rapidly as customer traffic and transaction volumes fluctuate due to product cycles, seasonality and other events. Most of the time, this will call for cloud-based infrastructure. At the same time, these new solutions will often require integration with existing legacy applications and databases, creating another challenge.

A CIO Checklist for Digital Transformation

CIOs remain in an ideal position to lead their firm's digital transformation, as a consequence of deep understanding of their current technology estate and emerging disruptive technologies, as well as their cross-enterprise perspective and familiarity with key business processes. KPMG recommends that CIOs focus on the following seven areas when planning their approach.

CIOs remain in an ideal position to lead their firm's digital transformation

1 Top-down, enterprise-wide approach to strategy

Individual business units with entrepreneurial leaders acting on their own can obtain positive outcomes from leveraging digital technologies. However, maximum and sustainable benefits occur when digital strategies are formulated at enterprise level. By virtue of their cross enterprise perspective, CIOs can work with the C-suite and business leaders to help them understand and take advantage of synergies across the enterprise, spread leading practices, eliminate duplication of effort, and align resources and priorities that maximize benefits enterprise-wide.

Digital transformation often requires significant change to existing ways of working. It may de-emphasize the importance and need for certain roles and skills while requiring new and different ones. Cultural and organizational change of this magnitude has a higher probability of success when the CEO takes a highly visible role in promoting it.

2 Governance to encourage innovation, not constrain it

To survive digital disruption, IT organizations are required to step up their game and innovate to enable the business to be competitive. But all too often, governance becomes a barrier to innovation because it is designed to minimize or even eliminate risk, whereas innovation is synonymous with risk. CIOs must work with business leadership to define a governance framework that effectively manages and mitigates risk to embrace and encourage innovation.

Governance that supports innovation has three major features. First, it employs a filtering function to ensure that ideas on innovation are aligned with the digital business strategy and culture. This avoids wasting time and resources on ideas that are unlikely to be sustainable. Second, it defines the organization's risk appetite for innovation and sets boundaries. This encourages risk-taking but protects the firm from a catastrophe. Third, innovative ideas are funded separately. Because innovation is new, it is difficult to value, especially in the early stages. A separate funding mechanism ensures that innovation isn't crowded out by mainstream initiatives.

3 Operating model attuned to speed and agility

Current operating models are not sufficient to address digital disruption. With new technologies leading to a growing number of alternative business models, communication channels and cost structures, the business landscape is becoming increasingly complicated. IT is an essential component of a digitally driven world, and businesses expect the IT organization to be able to understand their complex needs seamlessly, and be far more agile and responsive than it has been in the past. A new operating model is required that can leverage emerging technologies and sourcing alternatives to satisfy these new stakeholder expectations. Many organizations even change their business model in such a way that synergy and co-operation among the different units become essential. This is usually classified under the heading "One Company" ([Koot14]).

For the foreseeable future, the IT organization must continue to support the current portfolio of systems where the focus is on stability, reliability, security and cost efficiency. At the same time, it will need to become more agile and innovative to support new digital initiatives that drive revenue and growth. The end result will be what some are calling two-speed IT, bi-modal IT, or hybrid IT. Whatever you call it, the bottom line is that IT must increase the pace at which it delivers new capabilities to the business ([Snyd15]).

4 Talent management as a top priority

As discussed previously, digital transformation will require new roles and new skills within the IT organization. Many of the most critical skills are in very short supply and will require aggressive and creative approaches to filling positions. The first step is to assess the short and long-term needs based on the digital strategy and to perform a gap analysis to determine which skills are needed as input to create a comprehensive talent sourcing and development plan.

CIOs are going beyond traditional methods for obtaining the digital talent they need, including pursuing small acquisitions of companies specifically for their technical skills. Others are making use of centers of excellence or digital acceleration teams to leverage the scarce resources they have across the enterprise. Both of these approaches can be used to "buy time" to develop additional resources within the organization.

5 Sourcing and vendor management as a core competency

Conventional infrastructure may be inflexible, complex and limited in capacity, and may thus impede the speed and agility required to execute a digital agenda. Moving new and existing workloads to a public, private,

and/or hybrid cloud environment will help. Furthermore, the need to significantly reduce the time to value for new solutions dictates a shift to more buy-and-integrate rather than in-house development that is facilitated by the growing supply of XaaS offerings.

For CIOs, the end result of all of this is the requirement to select and manage a greater number of external providers, ranging from large commodity infrastructure (cloud) to highly specialized digital consultancies, and to orchestrate end-to-end service delivery and quality. Contracts must ensure that measures and incentives are aligned with the overall strategic objectives and are outcome-driven.

6 Invest in digital capabilities

Digital transformation requires a set of new IT capabilities, as well as elevating some existing capabilities to a higher level of importance. Traditional IT is concerned primarily with systems of record: transaction-oriented applications to run the business, such as ERP, supply chain, etc. These systems are characterized by stability and reliability with new releases measured in years. In the digital world, the focus is on systems of engagement, customer and employee facing systems, where user experience is of paramount importance and new releases tend to be measured in weeks. They result from close collaboration between IT and the users, and are the product of iterative and rapid development cycles.

To facilitate collaboration and experimentation, CIOs are establishing or upgrading an R&D function or innovation lab to provide an environment where IT, business users and even external customers can explore and refine new digital solutions. In fact, 34% of organizations have an R&D function within IT or within IT and the business ([Harv15]). Because of the scarcity of digital skills, using a digital center of excellence (CoE) and/or digital acceleration teams leverages this talent across the enterprise. Attributes of an IT organization leading digital transformation can be found in Table 1.

7 Free up time as CIO

The agenda of most CIOs is currently locked by all kinds of operational issues and large projects. For most CIOs this makes it very difficult to spend time with the business discussing the implications of the digital revolution. Making time available to become an "evangelist" on digital is crucial. Some CIOs even consider appointing a second-in-command to manage the operational IT issues.

Capability	Benefits
R&D/Innovation Lab	• Facilitate collaboration between IT and stakeholders • Hands-on experience with emerging technologies • Incubator for pilot projects • Incrementally manage risks
Center of Excellence (CoE)	• Concentrate expertise in scarce skills • Identify and share leading practices • Leverage solutions across the enterprise • Accelerate solutions development
User experience design	• Increased customer satisfaction • Reduced support costs • Strengthen customer relationships
Mobile	• Competitive imperative • Location independence • Improved productivity
Agile	• Improved stakeholder engagement • Predictability in delivery and costs • Focus on customers • Improved quality

Table 1. **IT Attributes of Digital Leaders (source: KPMG).**

Conclusion

Digital disruption presents a paradox for most firms. On the one hand, it threatens the very core of their business (when was the last time you went to the store to rent a video or buy a book?). On the other hand, to those organizations with vision and the ability to execute it, it represents an opportunity to innovate and distance themselves from their competitors. CIOs are in a perfect position to make the difference between being a victim of disruption and a digital leader. Using this checklist as a guide, they can focus their organization on the critical success factors for digital transformation, and become a leader in this new digital world.

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