



# FIVE BUILDING BLOCKS OF DIGITAL TRANSFORMATION

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For many executives, the first word that comes to mind when they think about the impact of digital technologies is “speed.” A constant stream of new digital technologies (social, mobile, analytics, cloud, the Internet of Things, artificial intelligence, blockchain) is introducing previously unimagined levels of connectivity, data access, and automation.

Growing numbers of business leaders are starting to re-imagine their customer value propositions in light of these capabilities of digital technologies. Many feel an urgent need to transform their existing business into a digital business. That sense of urgency is creating a perplexing paradox: the digital economy places a premium on speed, but it demands such massive organizational changes that it takes a long time for established companies to become digital.<sup>1</sup> This briefing examines how established companies are—as fast as possible—redesigning themselves for digital success.

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## DIGITAL IS BROUGHT TO LIFE THROUGH DIGITAL OFFERINGS

Most established businesses are designed to support efficiency. Although digital technologies can enhance business efficiency, using digital technologies for that purpose doesn’t transform a company into a digital business. The distinctive feature of a digital business is the digital offerings it creates for customers. We define digital offerings as *information-enriched customer solutions wrapped in engaging customer experiences*. Digital offerings create new customer value propositions.

1 This briefing is based on Jeanne Ross, “Digital Is About Speed — But It Takes a Long Time,” *MIT Sloan Management Review*, April 5, 2018, <https://sloanreview.mit.edu/article/digital-is-about-speed-but-it-takes-a-long-time/>.

For example, AUDI AG is experimenting with sharing economy-type services based on smart, connected cars—such as Audi on demand and Audi at home—that help people solve mobility problems by other means than buying a car.<sup>2</sup> Schneider Electric offers intelligent energy management solutions rather than just electrical equipment.<sup>3</sup> Philips intends to help individuals live healthier lives by digitally enhancing its existing healthcare equipment and consumer products, turning them into integrated healthcare solutions.<sup>4</sup>

Defining digital offerings can be challenging. Leaders must be able to imagine customer value propositions that were not possible without digital technologies. The even greater challenge, however, is in delivering constantly evolving digital offerings; most established companies aren’t built to do that.

We have identified five digital building blocks that develop the new capabilities companies will need to succeed in the future. These building blocks establish a foundation on which to rapidly develop and scale digital offerings that customers value.

## DRAW ON FIVE BUILDING BLOCKS FOR YOUR DIGITAL TRANSFORMATION

Three of the five digital building blocks are technology platforms: an operational backbone, a digital platform, and an external developer platform. The other two building blocks are organizational capabilities: shared insights about what customers value, and an accountability framework that coordinates the efforts of autonomous teams.

An **operational backbone** is a set of *integrated and shared systems* (e.g., ERP, CRM), *processes, and data that ensure efficiency, reliability, and transparency of operations and transactions*. For example, Royal Philips started building its

2 N.O. Fonstad and M. Mocker, “[Expanding Digital Innovation at Audi](#),” MIT Sloan CISR Working Paper No. 415a, October 2016.

3 J. W. Ross, C. M. Beath, and K. Moloney, “[Schneider Electric: Connectivity Inspires a Digital Transformation](#),” MIT Sloan CISR Working Paper No. 417, May 2017.

4 M. Mocker and J. W. Ross, “[Transforming Royal Philips to Reinvent Healthcare in the Digital Age](#),” MIT Sloan CISR Working Paper No. 425, December 2017.

Philips Integrated Landscape in 2011 to standardize its idea-to-market, market-to-order, and order-to-cash processes globally.<sup>5</sup> This effort simplified the company's systems and processes to reduce costs and risks. Without a powerful operational backbone, Philips' leaders would be consumed with executing and maintaining core processes instead of imagining, developing, and commercializing digital offerings that help people live healthier lives.

A **digital platform** is a *repository of business, technology, and data components facilitating rapid innovation and enhancement of digital offerings* for customers. The raw material of your digital offerings is a set of software components. To facilitate development of both new and enhanced offerings, companies need robust platforms that make reusable business and technology components accessible to the people

### If a company has already built a powerful operational backbone, the other building blocks can build on that foundation.

configuring those offerings. Philips relies on its HealthSuite Digital Platform (HSDP) to store and access technical (e.g., secure data storage in the cloud) and business (e.g., user registration as the owner of a connected device) components for existing and future offerings. AUDI AG has created the Mobility Service Infrastructure, a set of common fleet-related business components (such as locating a car, and checking in to it) used by each of the company's sharing economy offerings. Without such a platform, companies will create for their digital offerings the same kind of messy, siloed legacy systems that burden so many companies' core operations.

An **external developer platform** is an extension of your *digital platform to support an ecosystem of partners who contribute to and use digital components* of the digital platform. Digital offerings aim to solve customer problems. Since customer problems can be complex, these solutions may require capabilities that your company does not have—but that potential partners do. Digital companies like Amazon and Apple have extended their platforms to enable seamless integration of partner offerings. Similarly, Philips does not expect to build all the components and solutions required to improve healthcare outcomes at lower costs; rather, the company is offering partners a set of API-enabled services via its developer portal, HSDP.io. Without such an external de-

veloper platform, a company's offerings will be constrained by its own competencies.

Platforms provide the technological and organizational basis for developing digital offerings, but they are worthless if a company does not convert platform capabilities into offerings that customers find valuable. To understand what offerings customer will value, companies must build **shared customer insights**: *organizational knowledge about what kinds of digital offerings customers will pay for*. To solve customer problems, companies must invest in understanding such problems as well as potential solutions. Because that understanding will never be complete, companies must design processes for customer engagement and learning. Philips has designed HealthSuite Labs, an engagement designed to co-create digital offerings with customers (healthcare providers) as well as other external (e.g., insurance companies, patients, policy makers) and internal (e.g., customer account executives, product developers) stakeholders. In a series of workshops, multi-functional teams identify a problem and ways to address it that will work for all stakeholders. Shared customer insights result from customer co-creation, and from close internal collaboration between customer-facing and product development functions.

Organizational learning also requires experimentation, which is how companies test their hypotheses about what customers will value. Using experimentation, AUDI AG discovered that Audi unite—a service in which a group of people shared a car and split the cost based on its usage—did not work, in part because finding groups of compatible users (neighbors? friends?) was incredibly difficult. What might be most difficult for many executives of established companies: viewing this as an insight—part of a building block—and not a failure. Without experimentation, companies don't develop shared insights; without shared insights, they can't build valuable offerings and platforms.

Hierarchy limits speed and innovation. Big companies cannot eliminate hierarchy, but they will need to build an entirely new **accountability framework** to rapidly deliver new and enhanced digital offerings. Traditionally, MIT CISR has referred to accountability frameworks as governance. In digital businesses, the thrust of the accountability framework is *clear ownership of—and coordination among—a growing set of digital offerings and components*. In short, digital businesses organize around offerings, not functions, assigning ownership for offerings and for the reusable business and technology components comprising them. The accountability framework empowers individuals and teams to make decisions related to the performance and cost effectiveness of their component.

<sup>5</sup> Mocker and Ross, "Transforming Royal Philips to Reinvent Healthcare in the Digital Age."

Spotify maintains shared governance principles addressing the need for autonomy and coordination of offerings.<sup>6</sup> Such principles, if adopted, will lead to radical changes in organizational design. Philips, for example, is mapping out an organization divided into component and solutions businesses, the first delivering “Lego brick”-like components, and the second aggregating and integrating those components into solutions.<sup>7</sup>

Without a clear accountability framework that empowers and coordinates owners of components and offerings, companies will rely on hierarchical decision-making processes that will slow progress in becoming a digital business.

## MAP OUT YOUR DIGITAL TRANSFORMATION JOURNEY

Figure 1 proposes a rough model for investing in the five building blocks to transform your company. Our sense is that, in the ideal case, a company has already built a powerful **operational backbone**. If this is the case—though often it is not—the other building blocks can build on that foundation. A possible next step is to extend platform capabilities by building some early **digital platform** components, both technical and business.

6 A. Baiyere, J. W. Ross, and I. M. Sebastian, “[Designing for Digital—Lessons from Spotify](#),” MIT Sloan CISR Research Briefing, Vol. XVII, No. 12, December 2017.

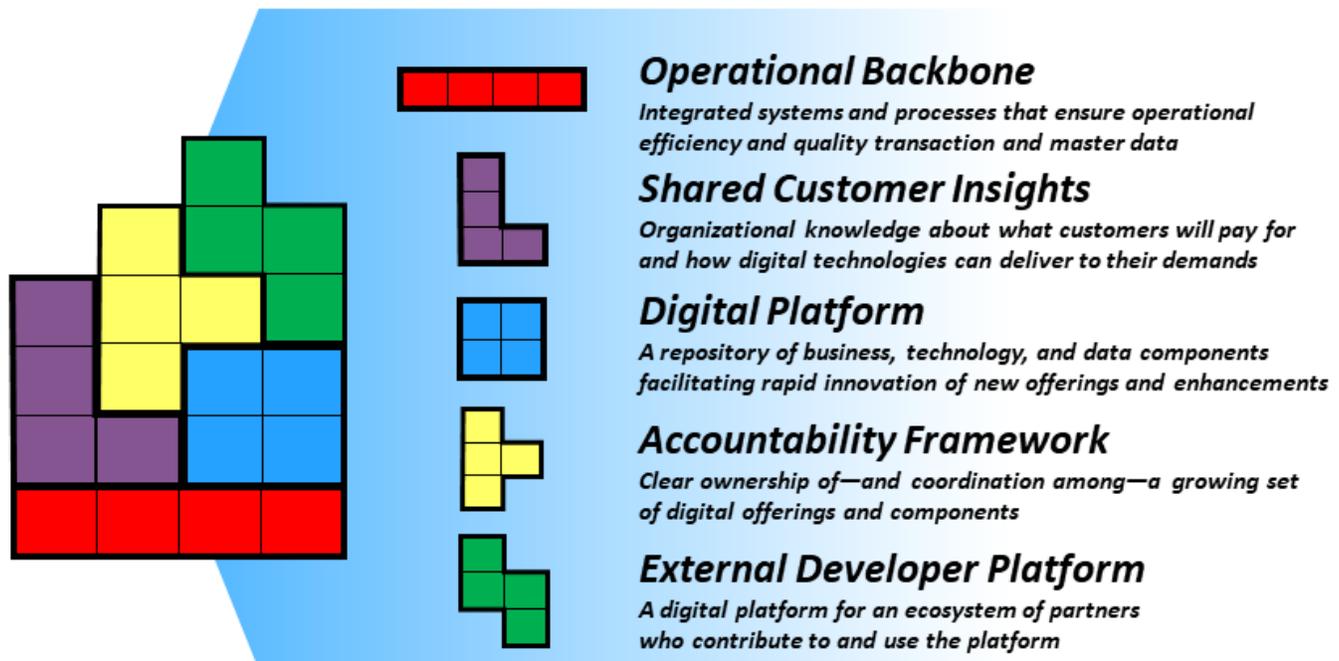
7 Mocker and Ross, “Transforming Royal Philips to Reinvent Healthcare in the Digital Age.”

However, early in any digital effort, a company will need to start to learn what customers value. Thus, we expect leaders to start collaborating with customers and initiating digital experiments to develop **shared customer insights**.

Companies won’t make much progress on their digital platforms until they start introducing a new **accountability framework** that assigns ownership for components and offerings. Clear accountabilities will enable them to expand their repositories of business and technical services. Accountable parties will also recognize inadequacies in their ability to meet customer demand. They can identify value-adding services that external parties can provide. They will then want to start offering an **external developer platform**. Many companies imagine they will become platform businesses, but our sense is that they will need to develop the other four building blocks before they can seamlessly extend digital capabilities to—or seamlessly use the capabilities of—potential partners.

The model in Figure 1 is generic. Every company should map out its investment in the five building blocks based on its own existing capabilities and strategic demands. Less than thirty percent of Philips’ revenues come from the company’s digital offerings and related services. Its main revenue source is still physical products. Like other companies we’ve studied, Philips’ transformation to a digital business has been gradual. What is true across companies is that the transformation to digital will take time. We suggest you urgently start building your capabilities.

Figure 1: The Five Building Blocks of Digital Transformation



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