Four key questions to consider for successful digital transformation

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Digitalization is a cross-societal megatrend, affecting and challenging all sectors, from manufacturing to local government. Consequently, executive interest in digital transformation is increasing rapidly, as more and more organizations face agile disruptors harnessing new technologies to compete against them. We define digital transformation as:

The majority of "analog-native" companies are struggling to become digitally mature enough to compete with "digital-native" rivals. How can they adapt strategies, business models, organizational structures and capabilities to remain competitive and relevant? This article focuses on the four key questions analog-native companies need to address if they are to successfully embrace digital transformation.

The use of digital technologies and data to create new value propositions and operating models. These are enabled by digital innovation and creativity to address new digital usages, behaviors and needs, rather than enhancing and supporting traditional methods.

There are, however, very few success stories of traditional "analog-native" companies becoming digitally mature enough to compete with "digital-native" players. This is driving an urgent need to adapt strategies, business models, organizational structures and capabilities to remain competitive in the short term and relevant in the long term. To build lasting differentiation and competitive advantage, this adaptation needs to be carried out while, at the same time, preserving, enhancing and expanding the core business. Arthur D. Little has worked with several organizations to successfully accelerate digital transformation. Examples of analog-native companies that are successfully competing with digital-native players include Nike and GE, both of which have launched successful digital divisions that bring in new revenues while enhancing their core business. (See the Nike case example below.)

Currently most companies have yet to get out of the starting blocks, which is demonstrated by the results of "Arthur D. Little's Digital Transformation Study." Almost 80% of companies surveyed said that they are still only "digital adaptive" – with their digitalization efforts limited to products and services at best, and with no comprehensive approach to digital transformation. Although many organizations have developed digital strategies, far fewer have managed to implement them successfully. Creating a "sense of urgency" was seen as the top challenge for digital transformation, due to a lack of awareness of the opportunities and threats to businesses. Around 50% of the organizations surveyed considered lack of skills and competencies their major challenges on the digitalization journey.

Case example: The Nike Digital Sports Division

The Nike Digital Sports Division is a digital governance function providing resources, budget and coordination for cross-functional digitization projects across the enterprise. This ensures that the vast amount of data the company has, such as from the NIKE+ community, is used as a strategic asset for marketing and product development.
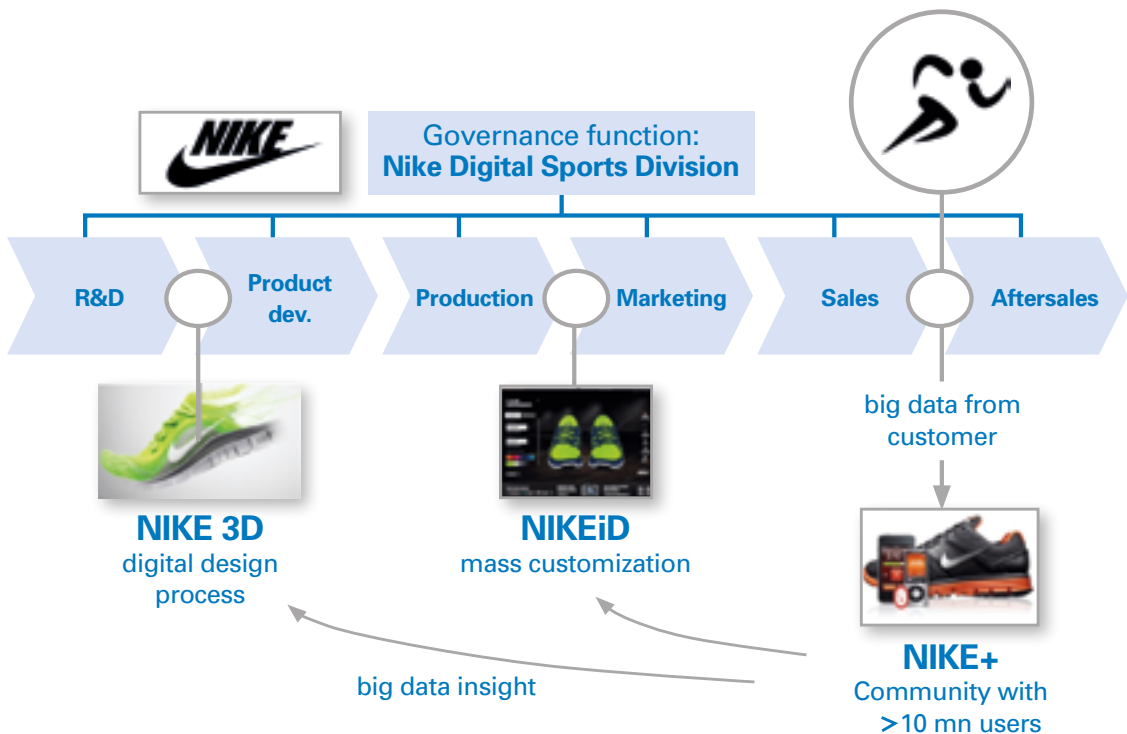

Figure 1: **Nike's use of customer data in the value chain**

Nike has a long relationship with Apple, based on developing and providing its suite of Nike+ apps. Through this, Nike has created an ecosystem that gives athletes access to their fitness history, training programs, and favorite gear every time they connect with the company. This converts to potential sales as Nike rolls out direct-to-consumer e-commerce sites globally.

Preferences expressed within the Nike+ community also feed back into the digital design process. Through its work in the 3D printing space, Nike can now make and tweak prototypes in hours, instead of months. The benefits of this approach include a unified consumer experience through big data-based synchronization of the supply chain, and optimization of resource allocation. For example, Nike's spending on TV and print advertising in the US has dropped by 40% due to the integration of its customers in the business value chain.

The twin challenges facing organizations

Analog-native firms have to overcome two issues. Firstly, they need to match the speed and scale of digital-native players, and secondly, they have to transform their legacy business models and operations, digitalizing their value chains as much as possible. To overcome these challenges, analog-native players must seek inspiration from the design principles of digital-native companies. These include:

- Collaboration (internal as well as external)
- Customer centricity
- Agility
- Data centricity
- A culture of continuous experimentation embracing change.

Analog-native companies that have reached high digital maturity levels share a common characteristic – an enabling organization. Without this, companies face the risk of entrenched silo mind-sets and a lack of collaboration, leading to wasted investments and, ultimately, failure of their digitalization efforts.

From our experience in working with many analog-native organizations on digital transformation, we have seen that four key questions need to be addressed to ensure success:
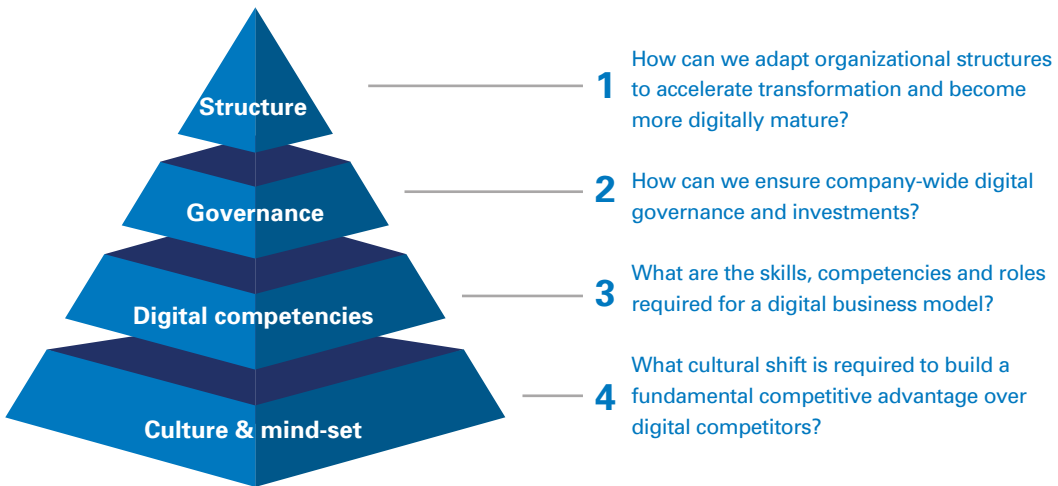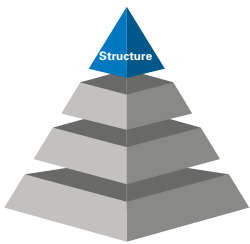
Figure 2: **Four key questions to consider for successful digital transformation**

How can we adapt organizational structures to accelerate transformation and become more digitally mature?

In order to match the agility and customer centricity of digital players, analog-native companies need to break down legacy functional silos. They must create organizations that foster cross-functional collaboration, with processes, such as product development, that flow seamlessly across departments, enabling the digitalization of products, processes, and touch points in an end-to-end manner. Collaboration needs to stretch outside the organization to ecosystem partners and customers, as well as internally through the organizational structure.

Adopting a "networked" organizational architecture facilitates rapid product and services innovation by integrating customer perspectives and partner capabilities, while filling any skills gaps within the internal organization. Examples in which this aids transformation include:

- Elekta, a leading medtech company, has worked to integrate its customers (hospitals) within product development, helping to successfully build an integrated ecosystem.

- GE has opened up its proprietary analytics platform, Predix, to its customers, enabling app development and thus building digital customer engagement.

- Corporate venture platforms are a common method of extending the "corporate borders and resources" to experienced entrepreneurs. For example, Coca-Cola has launched a corporate venture platform for creating seed-stage start-ups. Leveraging its vast resources, Coca-Cola collaborates with entrepreneurs using unique working models such as idea-pitch parties, failure conferences, and fast-concept-prototype workshops to test new ideas.

Organizational models to drive transformation

The choice of which organizational model to adopt to facilitate digitalization depends on multiple factors, including current digital maturity, intended target picture, urgency of change and risk aversion.

Four generic models are shown in Figure 3 below. Each has specific pros and cons – the most appropriate model for any one company will depend on its specific context and objectives.
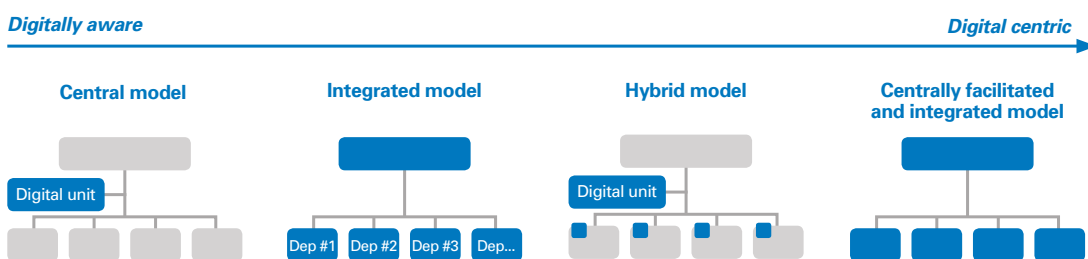

Figure 3: **Organizational structures to facilitate digitalization**

Digitally aware organizations embarking on digital transformation may start with central models. This brings clear accountability and transparency at the expense of a possible "us-and-them" relationship with the wider organization.

An *integrated model* overcomes this issue, providing greater momentum for change. However, it risks creating alignment issues due to unclear accountability and the difficulty of following a common vision.

The hybrid model combines the positives of the central and integrated models, but is more complex and difficult to deliver.

The most digitally mature structure, the end state for many digital-native companies, is a *centrally facilitated and fully integrated model*. Here digital is fully embedded in the business model, products and services, processes, and mind-sets of the company.

Very few analog-native companies have yet created dedicated organizational structures that facilitate digitalization. In around 45% of cases, top management is still collectively responsible for both developing the digital strategy and steering the implementation. Of the respondents in our study that do have such a structure in place, only some 15% have dedicated central units to drive digitalization. Instead, around 25% have several departments working together, while the remaining 15% say they have no specific unit in charge.

Case example: The City of Stockholm

The City of Stockholm has aggressive digital maturity goals, aspiring to be "the world's smartest city" by 2040. This vision spans all services provided to citizens and businesses, from digital teaching tools in schools to connected trash bins and parking lots adapted for autonomous cars.

To drive digital transformation effectively, the city has re-formed its traditional IT department into a Department for Digital Development, reporting directly to the city director, complementing the IT departments in each operational area (the hybrid structure from Figure 3). An innovative example of its success is its work with the open data platform, on which the city has run "hackathons" that stimulate the development of digital services based on the city's openly shared data. Additionally, it collaborates with both academia and industry in "Digital Demo Stockholm", a testbed for digital innovations.

According to Stockholm's Chief Information Officer, the Department for Digital Development acts like an orchestra conductor – pointing out possibilities, driving execution and ensuring cross-functional collaboration – rather than as a police officer ensuring compliance with rules and regulations. It adopts a bimodal working model, enabling it to drive both major, longer-term and smaller, shorter-term digital initiatives in parallel.

How can we ensure company-wide digital governance and investments?
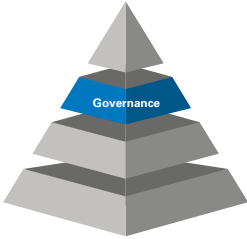
Digital-native players leverage the investment and competencies of each component, such as process, product and platform, across the organization. To successfully replicate this in an analog-native organization requires strong and robust governance to ensure that the right digital investments are made, shared throughout the organization to avoid costly duplication, and managed in the best way possible. Another key responsibility of the governance function is to constantly monitor the organization's transformation progress, in order to steer the business towards higher levels of maturity – for example, through smart KPIs, which both maintain the business as-is and gradually push it towards digital maturity.

For analog-natives to create truly digital operating models, the IT focus needs to shift from business process management to digital transformation.

Today: Competencies dedication   **Tomorrow: Competencies pooling**

BU A   BU B

IT A   IT B

Central IT

PULL   PUSH   PULL

BU A   BU B

Digitalization factory

Central IT

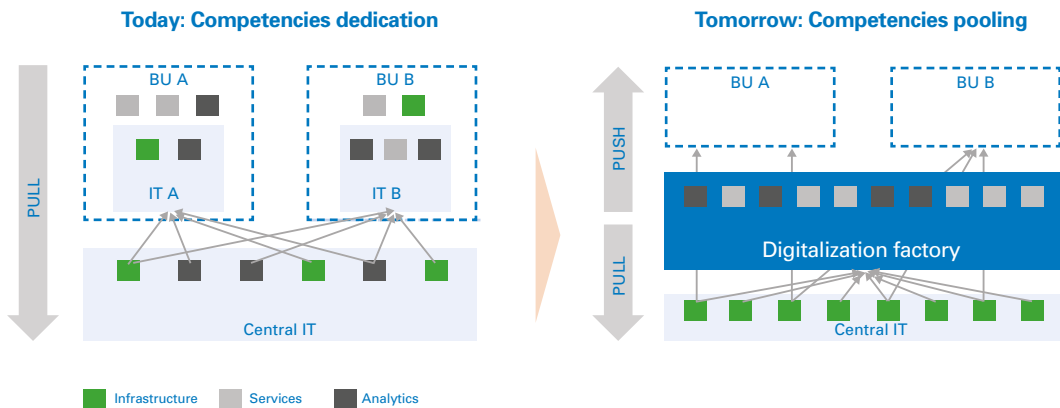■ Infrastructure   ■ Services   ■ Analytics

Figure 4: **Architectural shift to facilitate digitalization**

This shift can be done by going from a situation in which individual business units request IT development and support from the central IT department, to a situation in which a digitalization layer is able to push digital innovation across all group units through a cross-functional team of business and IT experts. This "digitalization factory" works on top of central IT's existing infrastructure assets, integrating and implementing digital technologies to enable transformation.

As the core engine for digitalization, IT needs to be able to operate at multiple speeds to enable agility when it is needed on the front end, while ensuring stability in the back end. To shorten time to market and increase both innovation and end-user satisfaction, lean and agile principles should be applied to the software deployment process.

To ensure that this engine performs, robust governance must ensure that the digital function works in a collaborative manner, with both the relevant business units and central IT. Back-end activities remain focused on reliability, stability, and efficiency. This is delivered through traditional project management methods, using modular systems and a dedicated rollout team for faster deployment.

What are the skills, competencies and roles required for a digital business model?
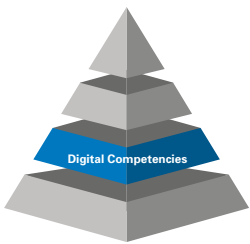
Digital-native organizations rely on new digital competencies, processes and working methods, as well as unique leadership roles in their organizations, in order to deliver the core elements in their DNA, such as customer centricity, agility, data centricity and a culture of continuous experimentation.

New Competencies and skillsets

New processes and working methods

New leadership roles

Examples

- Data scientists, advanced analytics
- UI/UX design
- Expertise in new technologies
- Partner management, etc.

- Communities management
- Design thinking
- Products factory
- Rapid prototyping
- Bimodal IT, etc.

- Chief digital officer
- Chief data officer
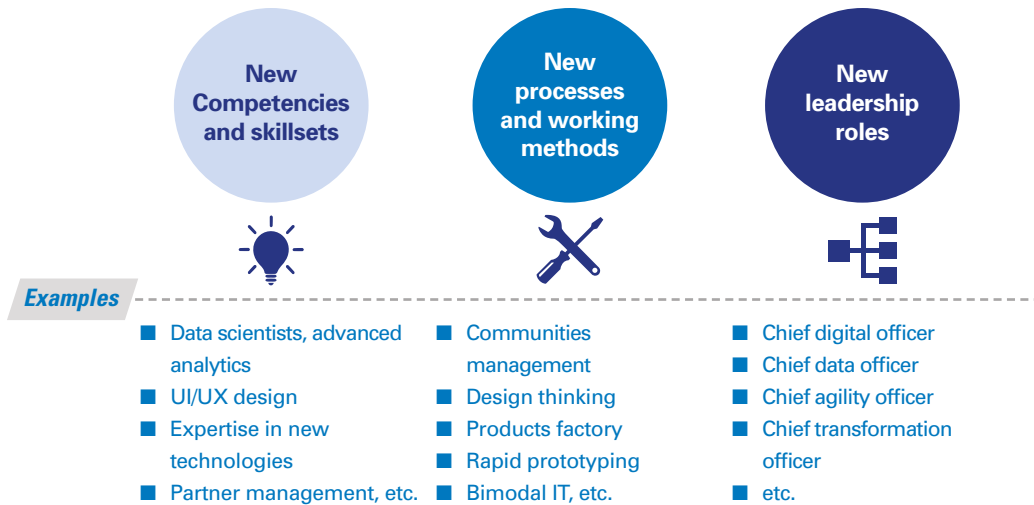- Chief agility officer
- Chief transformation officer
- etc.

Figure 5: **Examples of skills, methods and roles for a digital business model**

On the other hand, analog-native firms typically attract people with specific industry and functional specializations, and therefore possess gaps in their digital skills and competencies. The success of digitalization efforts therefore hinges upon their abilities to acquire or develop specific functional competencies around digital skills, technologies and processes (or operating models). It also depends on behavioral competencies that help create the cultural cornerstones necessary for a digital organization. The importance of addressing changes to the operating model as well as the business model is further illustrated in our article, "Transforming medical technology businesses to create value with digital," elsewhere in this edition of Prism.

Analog-native companies should aim to develop the new
leadership roles needed to facilitate digital transformation, along
with corresponding changes to their business and operating
models. One such commonly considered role is a business-
led, market-driven, and application-minded chief digital officer
(CDO) to complement the existing chief information officer (CIO)
role. The CDO creates new revenue sources and drives digital
transformation through high-speed procedures and by leveraging
capabilities from across the organization. The CIO role, on the
other hand, is a business-enabling partner, ensuring efficient IT
operations and a holistic, efficient IT landscape through business
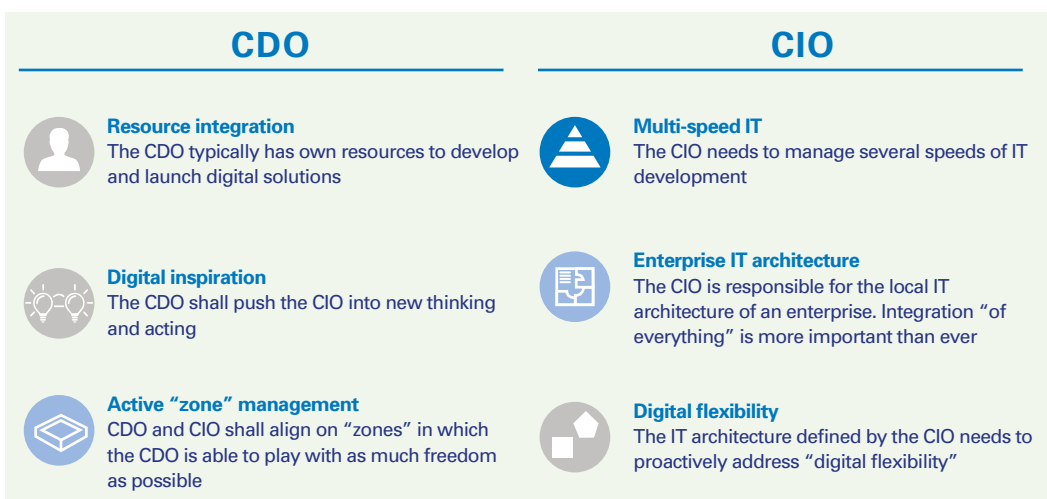understanding, technology expertise and enforcement of standards.

CDO	CIO
Resource integration The CDO typically has own resources to develop and launch digital solutions	**Multi-speed IT** The CIO needs to manage several speeds of IT development
Digital inspiration The CDO shall push the CIO into new thinking and acting	**Enterprise IT architecture** The CIO is responsible for the local IT architecture of an enterprise. Integration "of everything" is more important than ever
Active "zone" management CDO and CIO shall align on "zones" in which the CDO is able to play with as much freedom as possible	**Digital flexibility** The IT architecture defined by the CIO needs to proactively address "digital flexibility"

Figure 6: **New digital roles – CDO vs. CIO**

Analog-native companies should structure the CDO's scope and
areas of responsibility to avoid possible overlaps and conflicts with
the CIO role. In the case of a digital business with a greater focus
on digital business models, set up as a dedicated digital unit, the
CDO role must be empowered with specific resources to deliver
such a mandate in alignment with the CIO role. In a digital unit,
which has tighter integration with the core business and a greater
mandate for internal digitalization, the CDO should be given a
specific "sandbox" in which to act creatively, while respecting
integration rules for implementation. Having both roles in parallel
is not a natural necessity. The CIO can take over the role of the
CDO as well, as long as the IT organization is mature enough and

has the standing in the organization to represent the digital role. For analog-natives, the CDO can be seen as a transformational role to help the organization to become digital. Ideally, the CDO will therefore make himself or herself obsolete over time.

What cultural shift is required to build a fundamental competitive advantage over digital competitors?

In order for an organization to digitalize successfully across its layers, it needs to overhaul its corporate culture. Analog companies, which have often succeeded through creating systems and structures to control complicated tasks, generally have cultures that hinder rather than help digital transformation, and the traits that hold back digitalization need to be identified to move forward. While the technology to enable the digital shift is often already in place, ways of working and thinking within the organization need to be challenged in order for operational culture to change too.

For analog-native organizations, this shift is normally around areas such as ways of collaborating, employee mobility, and knowledge creation and storage. In digital-native organizations, collaboration is often decentralized (such as through social media), video is frequently used, and hierarchies are replaced with cross-functional teams. Employee mobility is enabled through cloud solutions, and the focus is on goal fulfillment rather than process, with knowledge built online through communities and networks.

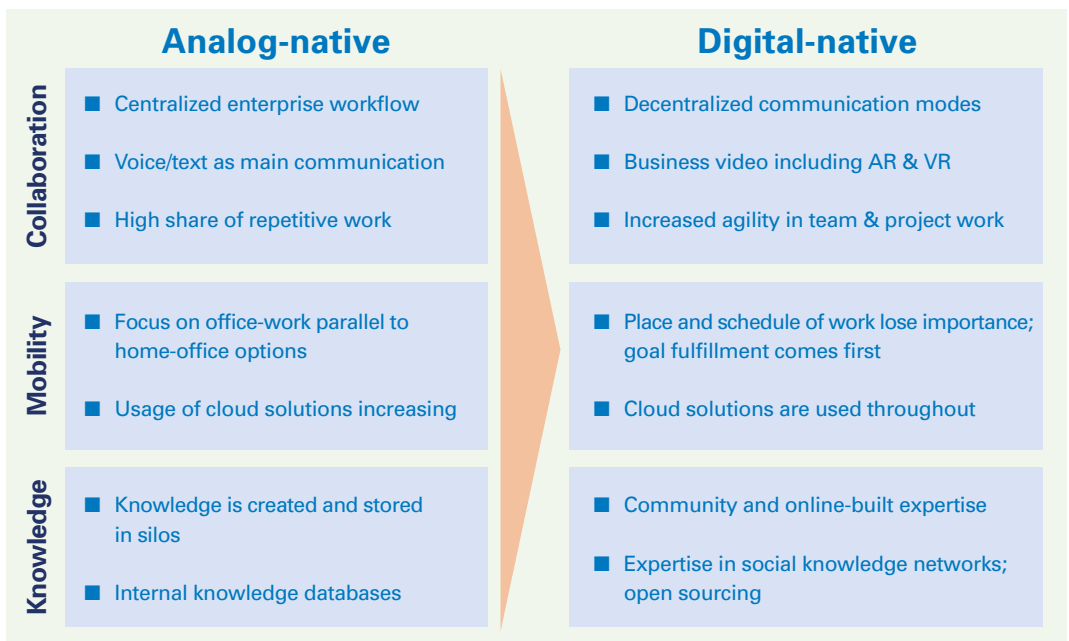|	**Analog-native**	**Digital-native**
Collaboration	■ Centralized enterprise workflow ■ Voice/text as main communication ■ High share of repetitive work	■ Decentralized communication modes ■ Business video including AR & VR ■ Increased agility in team & project work
Mobility	■ Focus on office-work parallel to home-office options ■ Usage of cloud solutions increasing	■ Place and schedule of work lose importance; goal fulfillment comes first ■ Cloud solutions are used throughout
Knowledge	■ Knowledge is created and stored in silos ■ Internal knowledge databases	■ Community and online-built expertise ■ Expertise in social knowledge networks; open sourcing

Figure 7: **The shift from analog to digital ways of working**

Creating cultural change is complex and time consuming, but imperative, if analog-native companies are to build competitive advantage over digital competitors. Several companies have already successfully completed this journey, and are sending a clear message about their organizational cultures, both internally and beyond:

- Deutsche Telekom demonstrates the importance of embedding the core principles of digitalization – collaboration, customer centricity, simplicity and ownership – in the values adopted across the company.

- Telefonica O2 Germany has a winning culture of "We can do it", which is a common thread and emotion driving the organization towards its digital ambition and market success.

- Adidas has a culture of "constructive challenge", in which employees are expected and encouraged to challenge the status quo to drive improvement.

- 3M has a culture of "passion for innovation", which has positioned it as one of the world's most innovative companies for many decades.

Insight for the Executive

Analog-native companies face serious challenges in their digitalization journeys – they are often unaware, sometimes ignorant and most often unprepared for one of the most important battles for their survival.

While nurturing their core business, analog-native companies need to take a leaf out of the book of digital-native players and make structural changes to their organizational models, in four areas:

1. Structure and architecture – develop a structure and architecture that fosters cross-functional collaboration and brings in both the customer perspective and ecosystem-partner capabilities to create an extended and networked organization.

2. Operating model and governance – create a multi-speed digital operating model that allows the agile delivery of innovative digital services in parallel with reliable traditional IT business support, while leveraging digital investments across the organization and governing the systematic digital transformation process.

3. Roles and competencies – unleash novel ways of working, create new digital roles with wider, cross-functional responsibilities, and scout and develop skills and competencies for the digital age.

4. Ultimately, inject a digital mindset and drive a cultural shift to become truly digital centric.

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