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Digital era Technology Operating Models

October 2017

"Digital technologies are doing for human brainpower what the steam engine and related technologies did for human muscle power. They're allowing us to overcome many limitations rapidly and to open up new frontiers with unprecedented speed.

It's a very big deal. But how exactly it will play out is uncertain."

– Andrew McAfee

Content

Digital disruption is not going to go away

Companies need to develop capabilities to continuously explore, deploy, and scale successive waves of digital technologies.

Digital technologies

There's no question that in today's digital age, the pace of disruption is only set to increase. As new technologies—such as the Internet of Things (IoT), artificial intelligence, robotics, and, virtual reality—proliferate, organizations are coming under mounting pressure to rethink not just their technology strategy but their entire operational strategy.

The premise of our research is quite simple: *every* business will be *digital* and therefore the ongoing digital technology push will force your organisation to better *organize* how you Identify, Trial, Evaluate, Risk assess and Scale or Fail new digital technologies and make them business relevant. This impacts *all* aspects of the Technology Operating Model (TOM), shown on the next page.

Why digital can't be ignored

While there are countless factors forcing companies to re-examine their TOMs, four key technological trends are generating a sense of urgency:

- **Exponential growth.** The foundational technologies (i.e. processing power, storage, and bandwidth) have been growing exponentially for almost five decades. While this rapid growth rate has introduced us to technological possibilities that were once deemed unthinkable, it's also created a need for more agile and nimble business strategies.

- **Adoption speed.** Digital solutions have the potential to scale rapidly and disseminate quickly if the solution answers a fundamental need. If organizations hope to effectively preserve their competitive edge and avoid disruption, they must find ways to leverage new technologies—such as cloud, mobile, and social—and facilitate the quick replication and dissemination of digital assets.

- **Interconnected technologies.** The nature of digital technologies allows them to be deployed in conjunction with each other. A forward-thinking TOM approaches each new digital innovation as a building block that can be used to create new combinations to innovate and disrupt.
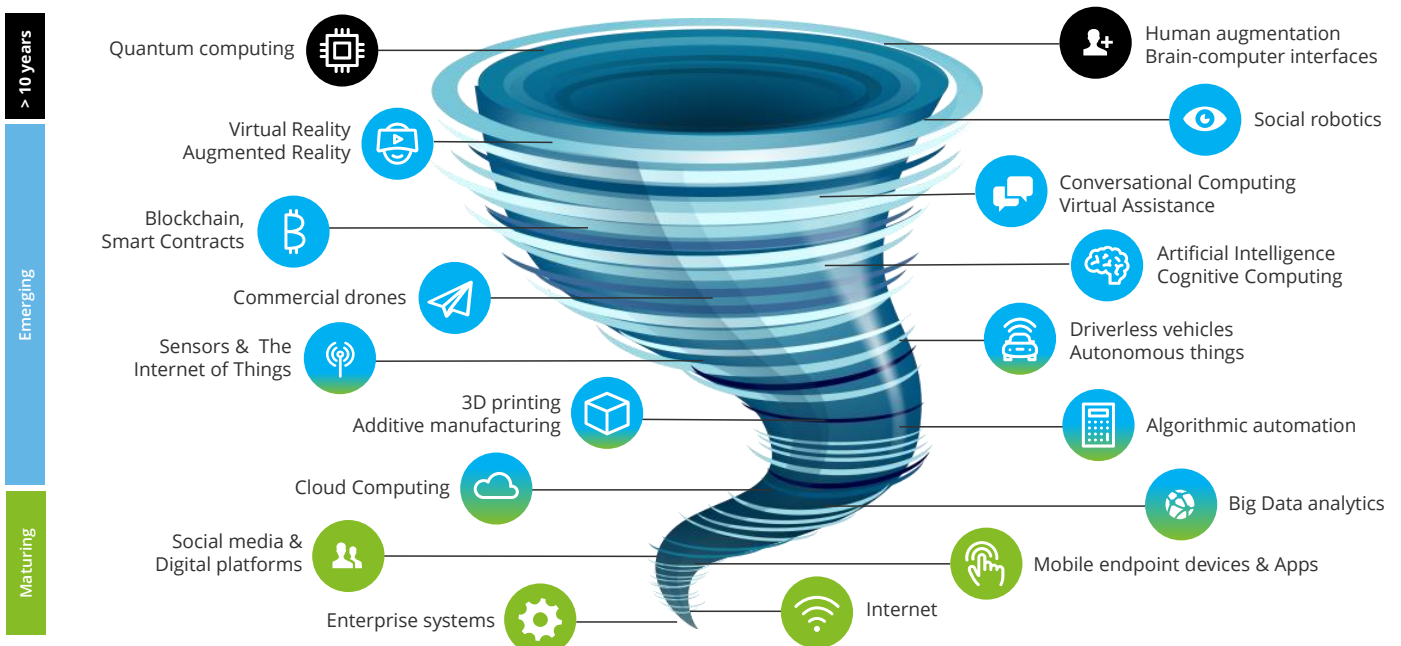
- **Succesive waves.** What we call "digital" relates to a heterogeneous set of technologies in various phases of maturity—technologies that are expected to evolve in successive waves over the next 20 years. To survive this unprecedented technological push, organizations will require a modern digital strategy.

To help organizations achieve their short- and long-term goals in the midst of this technological change, we've put together an action plan designed to guide the timely reconfiguration of the traditional TOM—allowing organizations to benefit from the new digital economy.

15 dimensions of enterprise-wide Technology Operating Models

Customer profiles	Who are the (aspired) customers of the company, as targeted by the digital strategy? What are the needs of these customers and how can they be segmented into groups with heterogeneous characteristics and requirements?
Customer touch-points	What are the channels through which customers get in touch with the company and what is the role of technology in each of these touch-points?
Customer value	What is the behavior of the customers, what do the customer journeys look like, and how does technology provide value in each of the steps of these customer journeys?

Funding mechanisms	How are technology expenses funded? How does the organization allocate budgets and track benefits?
Investments portfolio	How are technology investments made? In particular the investments that aim at tech-enabled innovation to drive digital transformation of the enterprise.
Performance metrics	How is the performance of the outcomes that technology provides measured? What metrics are in place for that?

Processes / Automation	How are activities structured into repeatable processes? To what extent are these processes supported by tooling and automated?
Capabilities / Skills	Which capabilities, skills and competencies must be in place, and at which proficiency levels, to execute the processes at the required level of maturity?
Sourcing / Ecosystems	Which activities are performed in house and which are outsourced to a third party? Who are the key partners? What are the ecosystems and networks the enterprise needs to participate in?

Organization / Roles	How are the technology capabilities organized in the entire enterprise? How are they distributed over central and local (business units). How are they structured into logical groupings and reporting lines?
Governance / Decision Rights	How are technology decisions made throughout the entire enterprise? Hoe are responsibilities and mandates distributed and which procedures are in place for decision making?
Culture / Behavior	What are the required cultural traits (values, leadership, desired behavior) of people involved in technology?

Infrastructure	What does the technology stack looks like? Which standards are used? How is the infrastructure landscape (cloud services, data centers, servers, storage, network) configured?
Systems / Integration	What does the application landscape looks like? How are systems interfaced and how "hard-wired" or loosely coupled are they interconnected?
Data / Algorithms	Which data is captured? Which standards are in place for data quality? How is the data life cycle managed? How well is the data protected? Which algorithms make sense out of data?

Finding the right path

To truly embrace digital technology in the face of change—and realize its potential as a competitive differentiator—it's imperative to have a plan.

The evolution of digital technology is leading companies to rethink the way they work, create value, and compete in their respective industries. And while the fundamentals of cost advantage or differentiation still hold true, in the wake of digital disruption, the options surrounding where these companies play—and how they win—have changed.

The need to rethink strategy

To navigate this new terrain, companies require a robust digital strategy—one that reflects a deep understanding of how digital is transforming primary competitive drivers. Such a strategy should consider:

- **Customer centricity.** How can digital improve the customer experience? A digital strategy can help deepen product and brand engagement by eliciting emotions that extend beyond the usage of the product; creating an association between the product and the customer's expression of self; and strengthening the customer's sense of identity and status.

- **Data usage.** How can data, gathered and analyzed through new forms of technology, be leveraged to improve the performance of the business? A sound strategy can guide data applications to help the business achieve its short- and long-term goals—from minimizing costs to improving service offerings.

- **The creation of new markets.** Digital technology has the potential to unlock latent demand and create a new and uncontested market space.

This requires significant investments both in technology and marketing, but has the potential of a large pay-off.
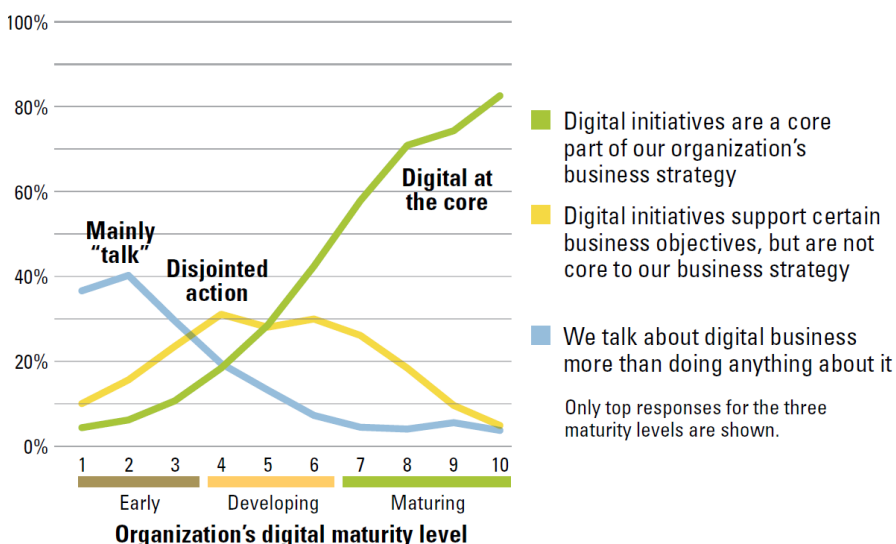
- **Extension of channels.** Digital technologies such as the internet, mobile apps, wearables, augmented reality, and virtual reality offer new distribution opportunities. A strong strategy can ensure these new distribution channels are intuitive, interactive, personalized, and context aware.

- **Digitization of products.** A digital strategy can help you determine whether it's within your organization's best interests to completely digitize a product (e.g. music) or infuse physical products with digital technology to make them "smart" (e.g. cars). It can also help ensure your products are easy-to-access, adopt, and use.

- **Own the platform.** A digital strategy should help connect users and resources via a digital platform. But because the value of a digital platform increases with the number of connections, there can be only a few successful platforms in every industry.

Digital strategy and maturity

Recent research of MIT Sloan and Deloitte showed a clear relationship between digital strategy and digital maturity. In enterprises with a high digital maturity, digital strategy is a core part of the organization's business strategy.

Percentage of respondents

Organization's digital maturity level

Digital initiatives are a core part of our organization's business strategy

Digital initiatives support certain business objectives, but are not core to our business strategy

We talk about digital business more than doing anything about it

Only top responses for the three maturity levels are shown.

Transforming the Technology Operating Model

Enterprises with digital aspirations have a fundamental mismatch between their digital strategy and their existing Technology Operating Models.
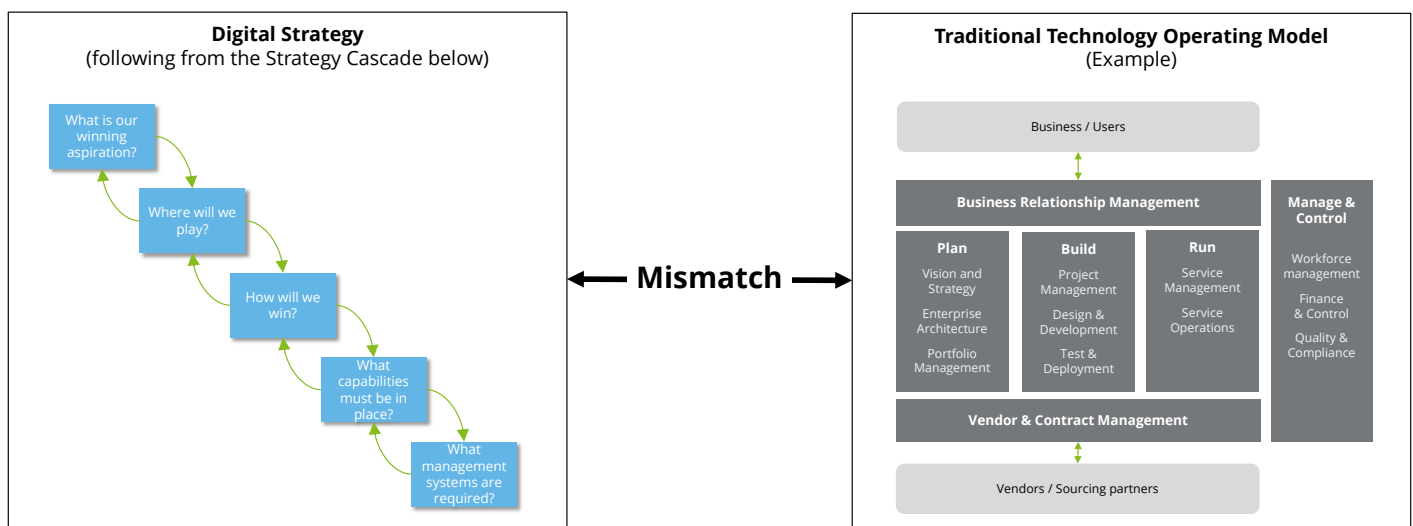
An observed mismatch

While an increasing number of organizations are starting to establish new digital strategies to accommodate changes in the marketplace, many are encountering challenges as they attempt to plot these strategic implications into their existing TOMs.

This is because, while TOMs are designed to accommodate new best practices and technological trends, today's digital strategies involve changes of a different magnitude, creating a jarring mismatch. Typical symptoms of such a mismatch include:

- **Lack of speed.** Organizations are unable to respond swiftly to opportunities in the market; resources and budgets are tied up in existing projects; and new initiatives need to pass lengthy approval processes.

- **Lack of innovation.** Companies are unable to experiment with new digital technologies to create digital solutions and, as a result, any innovative efforts are focused on incrementally improving existing situations instead of creating new innovative solutions for customers.

- **Lack of talent.** Organizations are unable to attract and retain the digital talent they need to drive digital innovation.

To overcome these challenges, businesses will need to revisit their overall TOM and tailor it to meet their current organizational needs while anticipating their future digital information and technology requirements. This can be achieved by focusing on nine key technology shifts.

Digital Strategy
(following from the Strategy Cascade below)

What is our winning aspiration?

Where will we play?

How will we win?

What capabilities must be in place?

What management systems are required?

Mismatch

Traditional Technology Operating Model
(Example)

Business / Users

Business Relationship Management

Manage & Control

Plan
Vision and Strategy
Enterprise Architecture
Portfolio Management

Build
Project Management
Design & Development
Test & Deployment

Run
Service Management
Service Operations

Workforce management
Finance & Control
Quality & Compliance

Vendor & Contract Management

Vendors / Sourcing partners

Organizing for the unexpected

The Technology Operating Model of the future must address nine big shifts.

Introducing the nine big shifts

The digital evolution is impacting the way we work, the resources we use, and the nature of technology itself. If organizations hope to respond swiftly to change, reap the business benefits of new digital innovation innovation, and attract top-tier talent in the future, their TOMs must evolve accordingly.

For a lot of organisations however, the digital strategy that they have identified does not fit their current (traditional) Technology Operating Model: it's like trying to fit a UK plug into a European Power socket.

Therefore, to help organizations address these challenges, we have identified nine big shifts that will influence the TOM of the future and that need to be addressed in conjunction with each other since they are highly interdependent.
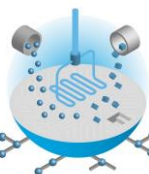
3 Big Shifts in 'Ways of working'

1.

Agility and speed become the new norm. Organizations learn and adapt by experimenting and fast deployment.

2.

The **boundaries** between business and IT blur, business-led IT increases, and tech fluency is vital for all.

3.

The rise of **innovation ecosystems** with joint risk taking, and value creation among quickly engaging and disengaging partners.

3 Big Shifts in 'Resources'

4.

The **workforce** transitions as digital, data, AI, and robotics create new jobs and cause existing jobs to disappear.

5.

Organizations adopt the vision, values, culture, and leadership required to build **digital DNA**.

6.

Innovation requires a larger share of resources, with fit-for-purpose **funding mechanisms** and **governance**.

3 Big Shifts in 'Technology'

7.

Cloud becomes the dominant IT delivery model, with highly **automated** IT processes.
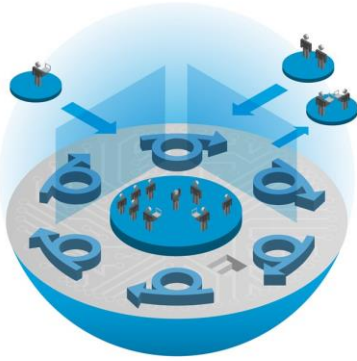
8.

Competitive advantage shifts in favor of **data and algorithms** fueling algorithmic business.

9.

Information technology (IT) and operational technology (OT) **converge.**

# Big shifts in the way we work

1. Agility and speed

The new paradigm of the digital economy is 'speed over perfection'. As disruption becomes more pervasive, organizations need a new strategic approach—one that positions them to change course in real time based on current market realities. That means companies must hone the ability to test multiple IT innovations, rapidly measure their effectiveness, and learn from their successes and failures in real time. Two approaches that offer the greatest potential to provide this speed of delivery are Agile and DevOps.

Agile

Agile eliminates the boundaries between business and IT, allowing the two functions to become better aligned—essentially replacing one IT business partner with a cross-functional development team—leading to increased organizational agility. To be effective, organizations must approach Agile in a way that best fits their needs—either by taking a hybrid approach, or combining Agile with concepts like Lean startup and design thinking. Scaling Agile from a team level to an enterprise level is incredibly challenging—often taking years of hard work—but is nevertheless an essential element of the TOM of the future.

DevOps

End-to-end Agile extends beyond the development phase to include deployment and operations as well. This is called DevOps, a culture that promotes close collaboration between development and operations. The objective of DevOps is to release software more rapidly, more frequently, and more reliably. For DevOps to work, organizations must employ people who value change, risk reduction, and stability; adopt automated processes for building, testing, and deploying; and componentize applications to allow scalability.
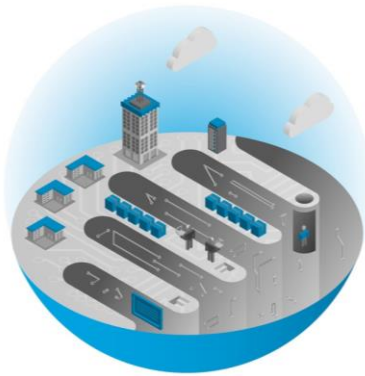

2. Business/IT boundaries blur

As digital technology redefines the way work is done in virtually every job, the distinction between 'business jobs' and 'IT jobs' is fading—and new roles are emerging which include elements of both.

As such, the days when enterprise technology could be viewed as someone else's concern are coming rapidly to an end. As an example, business leaders—executives and strategists in particular—must now understand both top-level technology trends and how those trends affect the business. A CFO, for example, who has the final say on whether a new technology-driven initiative gets funded, should be fluent in that technology's capabilities and risks before the project proposal is even written.

In the design of a future Technology Operating Model, we see a trend towards IT capabilities being organized closer to—or even embedded in—the business, fueled by other prevailing trends such as Agile and cloud. These trends "disrupt" the IT department's traditional monopoly on access to, knowledge about, and funding for information technology.

In addition, we see more companies—lead by their CIOs—offering tech education programs to help their people understand the major systems that form the technological endoskeleton of enterprise IT, the technology forces that are changing the world in which we live and work, and the way technology is used in the market to enable competitive advantage.
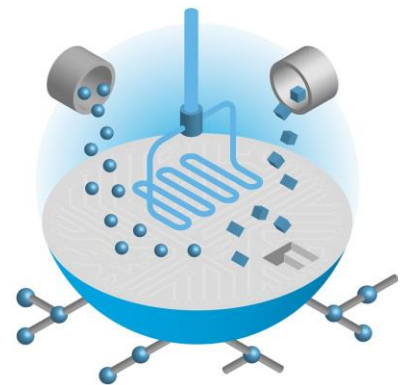
3. Innovation ecosystems

Today's leading digital innovators don't limit their innovative power by restricting themselves to internal resources. Rather, an increasing number are starting to turn their attention outward—to non-traditional partners and completely different industries—to enlarge their sensing capabilities, gain access to talent, establish an environment of experimentation, and develop new business models.

The new business ecosystems are based on open innovation, solving a complex problem collaboratively, creating an innovative new service that no organization could have created by themselves. This requires an

ecosystem of actors with complementary capabilities that collaborate in joint risk taking and value creation. By joining resources, the business ecosystem is able to create new business models, services, and customer experiences that would have been out of reach of the individual actors.

In this environment, data is the most valuable asset an organization can share. As such, companies must rethink their approach to intellectual property. For instance, they must determine which data and algorithms they are willing to share as part of their value contribution to the network, and which represent the core of their strategy and must be protected at any cost. This is true for both private sector networks (e.g. supply chains, business webs, ecosystems), and public sector networks (e.g. in healthcare, traffic control, security services, and military operations).

Modernizing the core technology platform to meet these new needs will also involve redefining sourcing strategies. An option is to establish a revolving innovation fund from savings on the "run" part, to fund innovations and exploratory IT.

Big shifts in resources

4. Workforce transition

Each of the nine big shifts will have an impact on the IT workforce. Whether

you're introducing Agile, enterprise-wide tech education programs, cloud, or IT/OT convergence, each move will inevitably cause existing jobs to disappear, remaining jobs to change in nature, training needs to increase, or new jobs to be created.

The combined impact of these changes will create a host of challenges for the CIO, forcing the revision of talent attraction and management approaches, the strengthening of brand images, and adjustment of digital talent value propositions.

To do this successfully, organizations must factor such changes into their TOMs—and take a greenfield approach to predicting how these shifts will impact demand for specific roles, competencies, and skills in the years ahead.
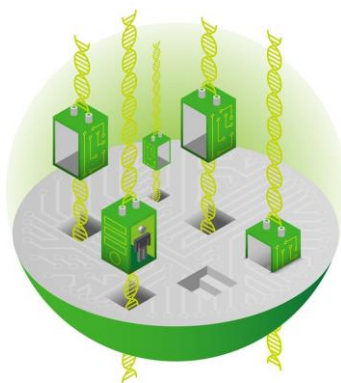
5. Digital DNA

The digital era does not only impact highly visible aspects of the TOM like workforce, systems, and infrastructure. It impacts less tangible—but equally important—aspects like vision, values, culture, and leadership as well. To achieve digital maturity, organizations must invest in both, equally.

This involves developing a digital DNA—a unique set of traits that allows the entire enterprise to view the world subconsciously through a digital lens. For instance, a company that is digital at its core goes beyond the mere digitization of customer touch points,

and instead reimagines new methods of customer engagement.

Digital DNA doesn't develop accidentally. It takes time, commitment, and leadership to establish. Instead of trying to make quick fixes, digital leaders play the long game—they imagine what kind of organization they want to become over a 10-year horizon. Then, they commit to developing the digital traits needed to achieve that goal, put their money where their mouth is, and deliver.

The effort is worth it. Strong digital capabilities combined with strong leadership capabilities result in high profitability. In fact, "conservatives"— or those with few advanced digital features but strong leadership capabilities—significantly outperform "fashionistas" (companies with many advanced digital features but no overarching digital vision or coordination).

6. Funding and governance

Although digital technologies deliver cost efficiencies, they do not do so by replacing existing technologies. Instead, technologies like the Internet of Things (IoT), artificial intelligence (AI), and robotics augment the technology footprint and extend the technology stack. As a result, the role of technology in the enterprise is only set to expand, permeating the very heart of the company's business processes.

This expansion will inevitably lead to an increase in costs—particularly in

the areas of design, implementation, and operation—which creates a challenge for cost-conscious CIOs. To alleviate these challenges, the TOM should make room for three fundamental shifts in IT financial strategy:

- A larger share of the budget must be allocated to innovation, at the cost of traditional technology expenses (i.e. save to invest).

- The total technology spend must increase, since new digital technology cannot be funded from cost savings alone.

- Digital innovation must be funded from outside the traditional IT budget.

In addition, because digital technology innovation is exploratory in nature, it requires a unique financial management approach—one that's iterative, with shorter cycles, and that allocates budgets to the most promising initiatives.

For instance, organizations may consider managing tech innovation as a portfolio of initiatives, where each initiative is based on hypotheses that are tested during each phase of exploration. So, rather than subjecting every new initiative to a formal approval process (which would, in all likelihood, kill it), companies could set aside innovation funds to start small, under-the-radar projects capable of delivering the learnings and tangible results required to submit a formal budget request.

This will lead to a more prominent shift from project portfolio management to product portfolio management, with product funding replacing project funding. Agile teams will be responsible for digital products—with "run" and "change" functions combined in one single product backlog—leaving the detailed allocation of product budgets to the relevant product owner and Agile team.

Big shifts in technology

7. Cloud and automation

While cloud computing is not far from becoming the dominant delivery model for IT, organizations must do much more than simply "lift and shift" their existing on-premise application portfolio to successfully leverage this technology. For a cloud transformation to work, it requires a cloud strategy that fits into a modernized TOM. At a high level, such a strategy would include a combination of four different strategies:

- **Replace:** On-premise application is replaced by a SaaS application.

- **Refactor:** On-premise application (or parts of it) is rebuilt in a PaaS environment, making the PaaS provider responsible for anything other than the application and data.

- **Rehost:** Existing application workload is moved from an on-premise server to a cloud server (IaaS), either with as little effort as possible (i.e. lift and shift) or by deploying the native capabilities of the IaaS environment. The latter allows companies to reap more IaaS benefits but limits portability.

- **Remain:** Applications are kept on-premise. (e.g. because it will become obsolete in the short term, preventing a company from recovering the cost of migration to the cloud.)

A strong cloud strategy should serve as a guide, allowing organizations to better assess their current IT landscape and define the cloud services, vendors, and preferences they require moving forward.
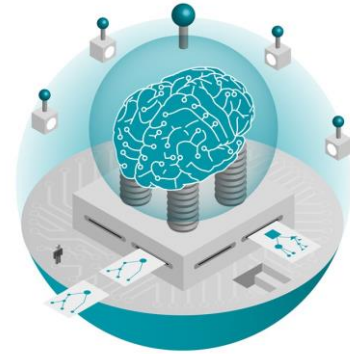
8. Data and algorithms

The digital data we create is rapidly expanding to the point where, over the next few years, the total volume of data stored will quadruple, while high-value data (i.e. that worth analyzing) is expected to double.

Analytics will expand to include non-traditional data formats and use new techniques like computer vision, advanced pattern recognition, and deep learning. This will create a better understanding of customers, employees, operations, and markets—and, as a result, these algorithms and data will increasingly become a strategic asset in the digital era TOM.

While this shift will undoubtedly bring opportunities, the concept of algorithmic business raises new issues surrounding privacy and ethics. In many ways, algorithmic business is just as much a new frontier for ethics and risk assessment as it is for emerging technology.

9. IT and OT converge

Information technology (IT) and operational technology (OT) have long been separated and under the control of entirely different groups—with entirely different cultures. Though long separated from each other, IT and OT followed similar journeys and now exchange technologies (e.g. networks, operating systems, databases) at the edges of their worlds. This is, however, changing.

Thanks to IoT, physical OT assets are increasingly equipped with sensors and connectivity, which has led to the streaming of data and intelligent IT systems that provide real-time insight and control. This, in turn, is generating a drive towards a full convergence of OT and IT. That said, a seamless integration of OT and IT remains a challenging and audacious goal for most organizations.

Although there are strong arguments in favour of bundling IT and OT capabilities in some industries, the reality is—for the short term, at least—this is only partly the case.

To help fuel a successful OT/IT convergence, the TOM of the future must address three key factors:

- **Cybersecurity.** As IT technology becomes prevalent in OT, so does the vulnerability for cyber attacks. A TOM should outline new methods of protecting OT, particularly if the physical equipment is life or mission critical.

- **Management.** The use of standard technology operating systems, databases, and middleware in OT systems creates the need for new processes like upgrade cycles, release management, and patches— practices that were traditionally reserved only for IT.

- **A broader view.** As OT and IT blend into each other, their capabilities, processes, and best practices need to blend as well.

Checking for blind spots

An effective TOM in the digital era addresses all nine big shifts.

Take a holistic view and leave nothing out

To achieve both short-term and long-term opportunities in the digital era, organizations require TOMs that are capable of accounting for the nine big shifts.

It's important to note that missing one or more big shifts will result in a TOM that is ill-equipped for the digital era, greatly impacts digital maturity, and in some cases even increases risk. (That being said, there is one exception—if your company doesn't have OT, IT/OT convergence is obviously not relevant to you.)
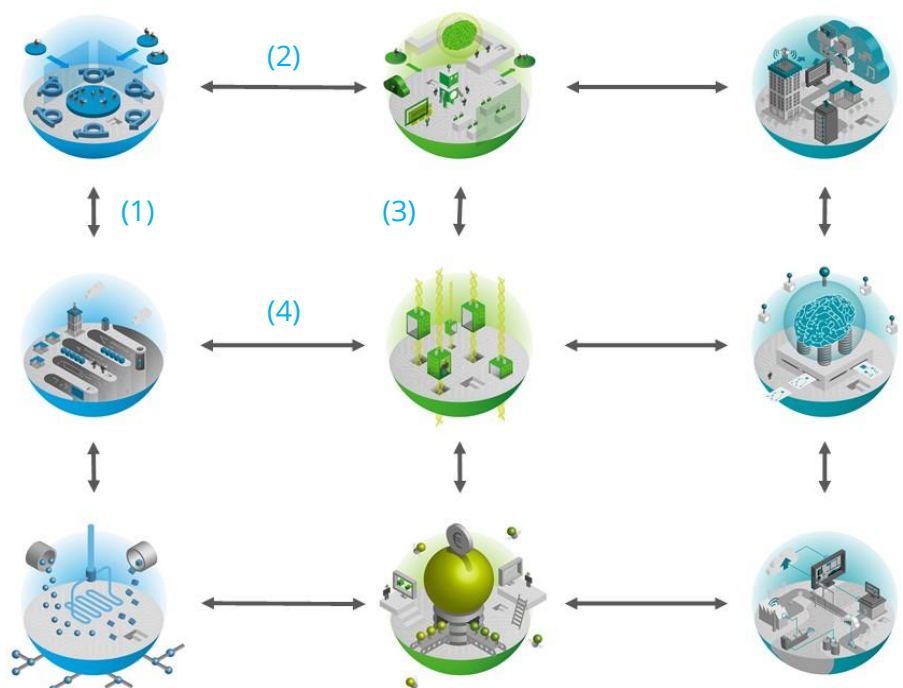
A multi-year journey

It's also important to note that accommodating the nine big shifts won't be easy. It will involve fundamentally changing the traditional TOM—a process that will inevitably take years to initiate, evolve, and master. In essence, the nine big shifts should be viewed as a multi-year journey—one that consists of a number of small steps, each one reliant on the other.

By viewing the nine shifts through this lens, it becomes clear that they're not isolated phenomena but, rather, mutually interdependent events. To illustrate this, let's explore four examples:

1. **Agility and speed ↔ Blurring boundaries:** The cross-functional nature of Agile teams (i.e. business and IT), combined with short feedback loops, will greatly impact how these teams are organized. As a result, more organizations will likely shift from "central IT" structures to
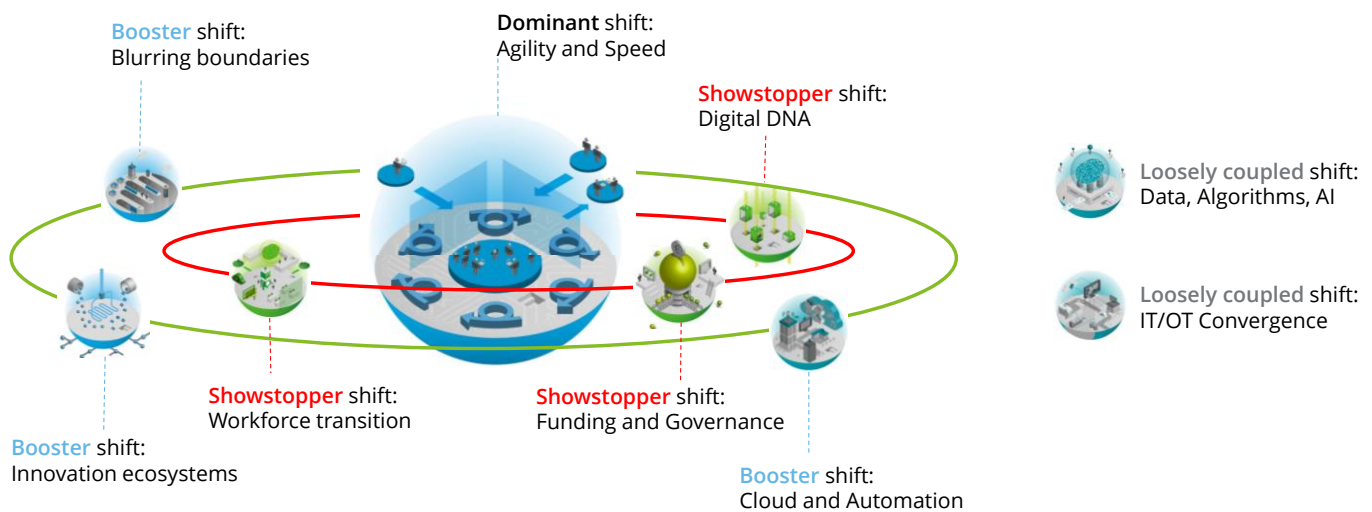
"business unit IT" structures, and the need for T-shaped and tech-fluent people will increase.

2. **Agility and speed ↔ Workforce transition:** Agile decreases the need for traditional job types—such as project managers—and increases the need for new job types like "Scrum master" and "Cloud broker".

3. **Workforce transition ↔ Digital DNA:** Changing the workforce alone is only half the job. The new workforce needs to operate in an environment with deeply embedded digital DNA.

4. **Digital DNA ↔ Blurring boundaries:** Signature aspects of digital DNA (e.g. a culture of innovation and exploration, distributed decision rights, fast learning) are all drivers that essentially blur the boundaries between business and IT.

Tailoring your approach

The nine big shifts are not one-size-fits-all.

Booster shift:
Blurring boundaries

Dominant shift:
Agility and Speed

Showstopper shift:
Digital DNA

Loosely coupled shift:
Data, Algorithms, AI

Loosely coupled shift:
IT/OT Convergence

Showstopper shift:
Workforce transition

Showstopper shift:
Funding and Governance

Booster shift:
Innovation ecosystems

Booster shift:
Cloud and Automation

Four different types of shifts

Although every company will be impacted by the nine big shifts, the extent of this impact will differ from company to company and industry to industry. In addition, depending on an organization's individual dependencies, some shifts will have more of an impact than others. To identify which shifts require the most resources, it's helpful to break them down into four different types:

Dominant shift

The dominant shift will provide the greatest contribution to increasing an organization's future business value. Of the nine big shifts, "agility and speed"; "cloud and automation"; "data, algorithms and AI"; and "IT/OT convergence" are likely to be dominant shift candidates.

Showstopper shifts

When the dominant shift is determined, the interdependencies between shifts can be used to identify showstopper shifts. These are shifts that must be taken care of *first* to advance on the dominant shift. Failure to materialize these showstopper shifts always results in failure to achieve the desired results of the dominant shifts. In the case of "agile and speed" as a dominant shift, for example, showstopper risks are "workforce transition", "digital DNA" and "funding and governance".

Booster shifts

The third category is the booster shifts. These are not showstoppers (i.e. they are not foundational for the dominant shift), but they have another effect. If done well, they can boost the effect of the dominant shift in a positive way in terms of time to market or business relevance. For example, "innovation ecosystem" is not a direct prerequisite

for "agility and speed", but when agility is realized *and* an innovation ecosystem is in place, the combination will create more business value than the sum of the business value created by each individually.

Loosely coupled shifts

Finally, seen from the perspective of the dominant shift, there are loosely coupled shifts. These are neither showstoppers nor boosters, but have their own contribution to digital maturity next to the contribution of the other shifts and without major dependencies.

To manage and configure a portfolio of nine big shifts effectively, the analyses and evaluation of each of the nine big shifts and their business relevance to the company's digital transformation is of vital importance.
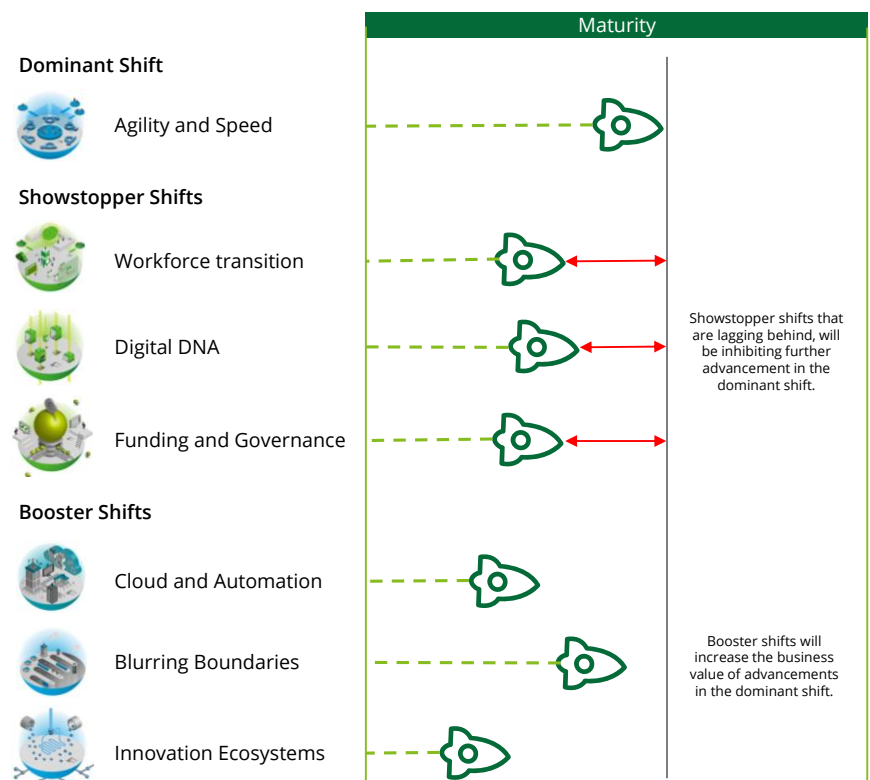
Synchronizing the shifts

To be effective, a digital TOM must ensure each of the nine shifts are addressed simultaneously.

The right timing

The challenge of transitioning the TOM can be compared to tuning a complex piece of machinery with nine different buttons. Turning one button impacts the positioning of the rest, so—to realize the optimal configuration—you have to find a way to turn the right buttons at the right time and get the right feedback loops in place in order to be able to adjust the "machinery" given the past pace of change in the digital space.

Similarly, all nine of the big shifts must be addressed simultaneously. Picking only a couple at a time will result in an incomplete TOM. This is illustrated in the figure to the right, where the dominant shift, "agility and speed", is also the most advanced. However, the showstopper shifts—"blurring boundaries", "workforce transition", "digital DNA" and "funding and governance" are clearly lagging behind. If this is the case, additional investments to further advance "agility and speed" are likely to deliver little value as the related dimensions have become a bottleneck. Instead, it would be wiser to invest in getting the lagging shifts in line with the dominant shift.

Maturity

Dominant Shift

Agility and Speed

Showstopper Shifts

Workforce transition

Digital DNA

Funding and Governance

Showstopper shifts that are lagging behind, will be inhibiting further advancement in the dominant shift.

Booster Shifts

Cloud and Automation

Blurring Boundaries

Innovation Ecosystems

Booster shifts will increase the business value of advancements in the dominant shift.

Leading the transition

Just like digital can not be owned by a single departmental function, neither can the transition towards a digital era TOM. Realizing a company's digital goals is a team effort.

Digital era TOM: In perspective

To successfully address the nine big shifts and establish a TOM fit for the digital era, an organization must commit to integrating its digital strategy into the overall business strategy. This will require, above anything else, a shift in how the C-suite functions.

Total involvement

The Technology Operating Model of the future transcends the scope of what we traditionally call IT. In fact, each of the nine big shifts will impact parts of the organization that are beyond the control of the CIO. For this reason, whether a company is scaling Agile across the entire enterprise or looking to increase tech fluency in varying business roles, all C-suite leaders must be on board.

No gain without pain

Just like digital cannot be owned by a single departmental function, neither can the transition towards a digital era TOM. Realizing a company's digital transition is a team effort. To succeed at capturing the business value of digital technologies, organizations will have to suffer through the **pain** of modernizing, standardizing, and transforming complex legacy landscapes. As such, C-suite leadership needs to commit itself to taking digital to the core, exploring new ways of working, and adopting new leadership styles.

CIO imperatives

CIOs are well-positioned to play a key role in the digital TOM transformation. That said, to realize this potential, organizations will have to change their view of the CIO and its associated responsibilities, primarily by recognizing the CIO as an enterprise-wide business leader and decision-maker, rather than simply the manager of the IT department.

CIOs agree with this sentiment. In Deloitte's Global CIO survey 2016-2017, many saw a need to transform their role from trusted operator to business co-creator.

Current state

Ideal state

11% Change instigator	16%
55% Trusted operator	19%
34% Business co-creator	66%
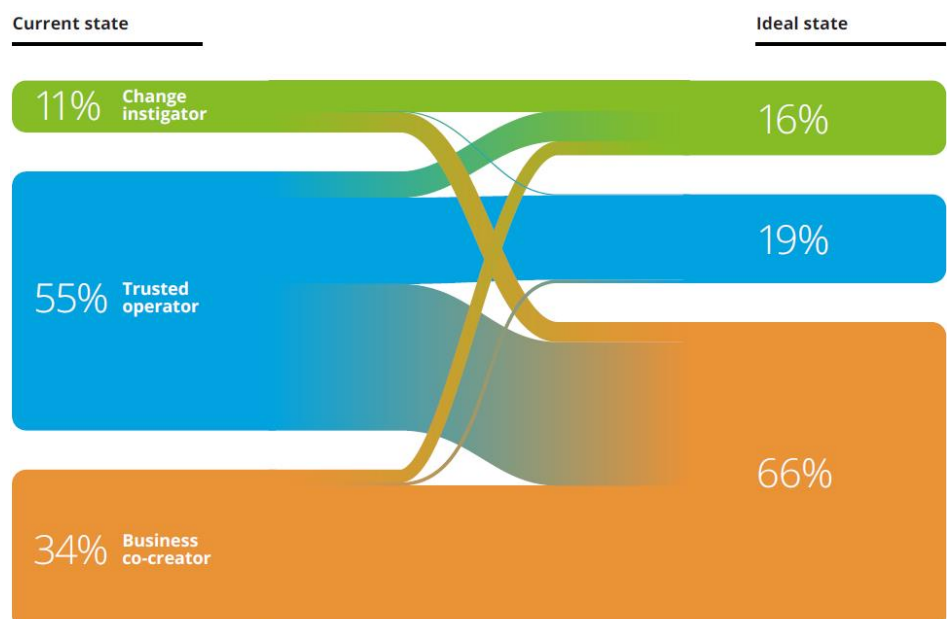
Executing on the model

Four steps to launching a TOM transformation.

Step 1: Start with understanding how the nine big shifts will impact your organization.

A good way to establish a digital TOM that addresses the nine big shifts is by determining the dominant, showstopper, booster, and loosely coupled shifts facing your business. This will give you a rough idea of how to allocate you time and budget.

Step 2: Determine the size of the impact and the imminence of change.

The way in which each of the nine big shifts impacts an organization's TOM transformation depends on the maturity of an organization's existing TOM, the pace at which digital aspirations are realized, and the market situation.

To identify how each of these big shifts will impact your TOM, ask the following questions:

- How transformational will this big shift be in the long term? Will it result in a big bang, shaking your organization to its core—or a smaller

hit? Devise a narrative describing the future situation in an ideal world.

- When are the major changes expected to take place? If changes are already happening or will be happening in the next year, you are said to be on a "short fuse". If you expect these changes on a horizon of something like three to five years, you are on a "long fuse".

- Where will each of these big shifts have the biggest impact? Which product/service, market, business unit, organizational roles, external partnerships will be most affected? Your answers should address both the long term and short term, with the short-term answers indicating where your transformation should start. Any quick wins and low hanging fruit should be identified here.
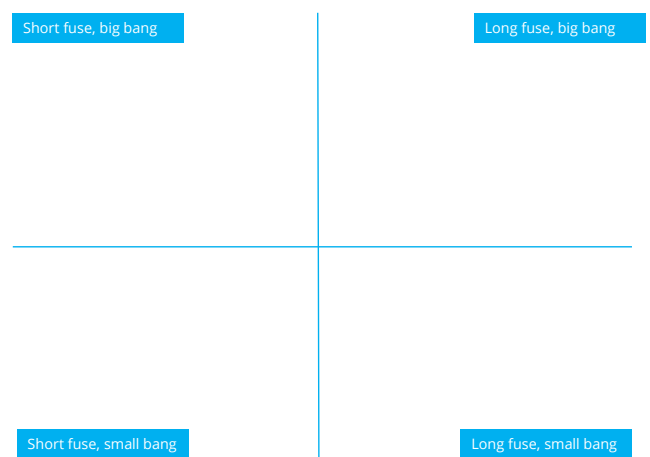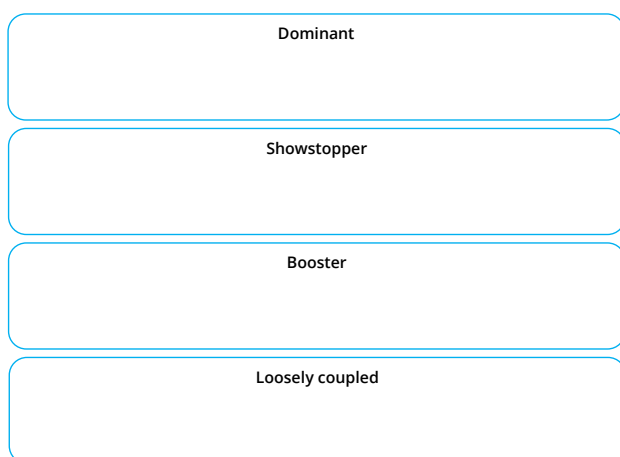
Step 3: Establish concrete goals and actions.

Before identifying concrete goals and actions as part of your transformation journey, get a clear picture of where you are now compared to the ideal situation described in the previous chapters addressing the individual big shifts.

Instead of scoring a big shift as a whole, use an assessment framework like the one shown to the right, in which the parts of each big shift are listed separately. In this model, score your current situation relative to the ideal situation of digital maturity and use this as a baseline for your goal setting and planning.

Apply this insight to the dominant, showstopper, booster, and loosely coupled shifts that you identified earlier, keeping in mind:

- Elements of the **dominant** shift are of the highest importance. Your organization's goal should be to excel in this area.

Dominant

Showstopper

Booster

Loosely coupled

Short fuse, big bang	Long fuse, big bang
Short fuse, small bang	Long fuse, small bang

- Elements of **showstopper** shifts need to be at least 'on par' to prevent them from acting as a bottleneck and slowing down the dominant shift.

- Elements of **booster** shifts need to be carefully chosen (i.e. weighing cost, risk, and value) and timed to boost the impact of the dominant shift and the future value of the TOM for the digital agenda.

- Elements of **loosely coupled** shifts can be decided upon independently of choices regarding other big shifts.

Step 4: Create a high-level digital roadmap to generate buy-in from the business and digital teams.

The transition to a digital era TOM is a multi-year journey that takes place in the context of an existing project portfolio and existing relationships with stakeholders. To succeed, CIOs must understand this context when shaping their digital era TOM transition, and plan deliberately to create and sustain buy-in from stakeholders during it.

An effective way to achieve this is to plot your goals and acitvities into a roadmap, as shown in the diagram on this page. Typically, projects in this roadmap will fall into one of three buckets:

- **Ticket to ride** projects are those that deliver new solutions and capabilities to business users. These projects allow the CIO to generate credibility and obtain support from non-IT stakeholders.

- **Operate and control** projects are those that must be done to "keep the lights on" and remain compliant. Stakeholders simply expect these projects to be executed successfully. There is little credit to be earned by executing these projects seamlessly, but a lot to lose if they're not done right.

- **Claim to fame** projects are those that will act as the foundation of a CIO's legacy by helping build the organization's brand image, allowing it to attract and retain top-tier digital talent.

Characteristic	Current situation assessment		
1. Agility and Speed	Lagging	On par	Excelling
1.1 Basic agile: cross-functional scrum development teams (p12)		●	
1.2 Scaled agile: enterprise wide agile with mature coordination mechanisms (p13)		●	
1.3 Agile / DevOps: Dev and Ops working as one in a highly automated fashion (p16)		●	
1.4 Explorative Agile: LEAN Startup and Design thinking concepts (p17)		●	
1.5 Ability to choose from different approaches (p18)		●	
2. Blurring Boundaries	Lagging	On par	Excelling
2.1 Self-service and new engagement models for digital natives		●	
2.2 Tech fluency a driver for career success for non-IT workers		●	
2.3 Technology organized closer to / embedded within the business		●	
2.4 Decentralization of technology budgets (BU / product / value stream)		●	
2.5 Centers of Excellence to foster critical digital expertise		●	
2.6 Innovation Labs to bring the best talent together to work in innovation		●	

Year 0 › Year 1 › Year 2 › Year 3

Ticket to ride

Operate & Control

Claim to Fame
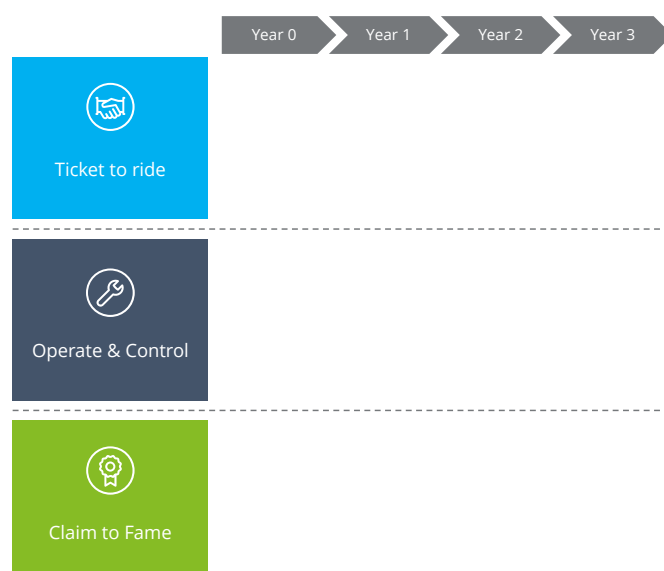
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