

# Digital Transformation Map

Tero Lindholm



## What does digital transformation mean for you?

Digital transformation is widely discussed and is impacting every company.

Nearly 2,600 CIOs surveyed by Gartner in 2016 said they devote 18 percent of their budgets to digital transformation, a figure that is expected to increase to 28 percent by 2018. According to CIO.com (Oct.6, 2017) and Harvard Business School, leading digital companies generate better gross margins, better earnings and better net income than organizations in the bottom quarter of digital adopters. In USA, digital leaders posted a three-year average gross margin of 55 percent, compared to just 37 percent for digital laggards.

However, definitions and scoping on digital transformations are vague and many organisations struggle to agree on their most feasible scope. In order to understand the expected business impact of a digital intensive transformation, it is important to define the content and agree on the scope. When agreement is reached, the outcome serves as a starting point for more detailed plans.

This paper introduces an approach that helps you to define the scope of digital transformation, or a part of it, for your environment. The definition and scoping are needed in many moments of the digital journey, such as when agreeing on strategic roadmaps, architecture design and project scope.

In this article, we use digital transformation definitions that are typically available in the standards, articles and industry practices. The overall content is based on industrial frameworks and Midagon's experience based on many customer cases. Every company must create the definition of digital transformation for itself, preferably upswing available definitions as a reference. Your scope may include disruptive new business models or it may be a business optimization change improving technical capabilities at the customer interface. According to the Gartner 2017 CEO survey, 42 percent of respondents plan to use digitalization to optimize rather than transform their business.

It is also clear that the transformation scope needs to be maintained during the digital journey. Following the lean-agile principles, the overall scope must be revisited frequently in order to capture the lessons learned, such as from the small practical pilots. The tool introduced in this paper also serves this maintenance purpose.

## Introducing the digital transformation map

Since digital transformation is a difficult topic to understand, we need a simple, practical model that helps all of the parties to discuss the content. This paper introduces A Digital Transformation Map to facilitate collaboration around this major change. The key purpose is to provide you with a framework that helps to identify the high level building blocks that are most often impacted during a digital transformation journey. The top level structure is introduced in **Figure 1**.

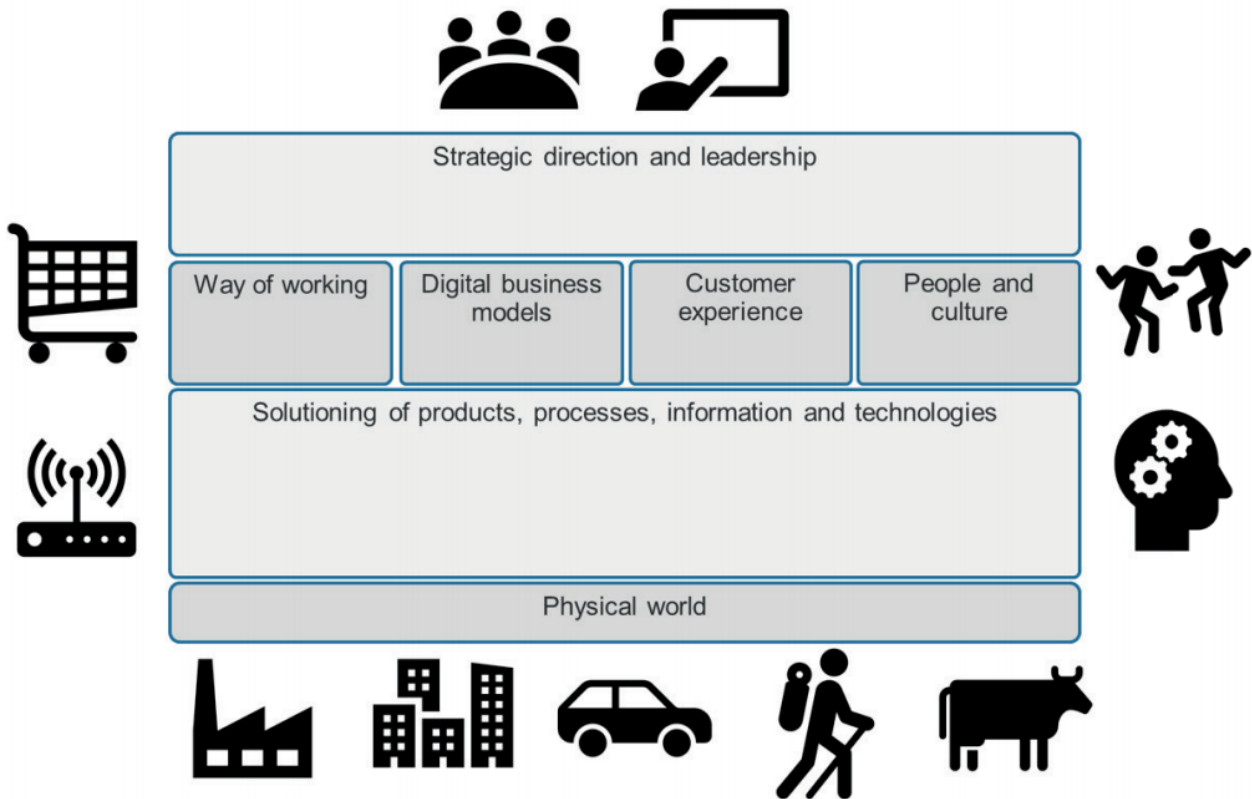


Figure 1. Top level structure of the Digital Transformation Map

The main business concern we are tackling includes questions such as what is digital transformation? What components are included? What is the scope of the change? What are the benefits? What are the next small pilot implementations that we should test? The specific concerns vary, depending on the role that you have.

The Board of Directors must approve the strategic direction and need to understand the scope and risks of digital transformation. Leadership teams may want to select strategic focus areas, understand the components included, ensure the right parties are involved and grant the right level of funding.

Product management, marketing, sales and lines of businesses need to understand the new business model opportunities and how it should impact customer experience. In order to reach a fast moving development and operational cycle, a Lean-Agile way of working should be enabled. An idea and innovation pipeline should be established. A new product introduction process must also include also digital development and the actual changes are to be driven forward in modern agile project mode.

Line managers need to understand how the organisation and roles, rights and responsibilities are tuned to enable the change. Because of the magnitude of change, we can expect that the corporate culture is facing changes, the attitudes of individuals may be challenged and a new set of skills may be required in the new digital intensive environment. It is also expected that there will be lack of competent people, motivating companies to introduce strong employer branding efforts.

Product, process and digital development teams must understand the technical structure and how the technical solutions are developed in an agile manner. Because the launched solution is used all the time, the teams must agree how the development effort is handed over to running services and how continuous operations take place.

The digital services must be running in sync with the physical world. The services are implemented, for example, in factory lines or in car tires and they are accessed by people on the move.

## Using the digital transformation map

It is clear that a digital transformation is a major change in any company. The digital transformation map demystifies the necessary components and guides you in identifying the most feasible priority items. You can use the map to describe the overall transformation architecture in a simple way from a functional perspective.

This tool can be used to bridge stakeholder views and opinions. This is illustrated in the moments that are described in Figure 2.

Your starting point or primary viewpoint is also case dependent. If you have a strategic viewpoint, start the discussion from the top and also consider other components. If you start from local implementations, start from the bottom and consider the feasibility of the management layers above. The map also communicates clearly that the change includes the major technical components but all the other aspects must also be considered.

First, select your overall business problem area. The area may be a digital agenda for a whole organisation, a value stream, or product family. Or your digital gap may be in a capability area, like field service. Or you need to scope a new business idea or a program. If you face an organisation-wide challenge, you may need to handle it in smaller portions. In that case, the solution space within the map can be first categorized, analyzed and prioritized using business capability analysis.



Figure 2. Sample moments to use the map

Within boundaries of the selected problem area, you should then start the scoping and fit/gap analysis for each of the components. You can use the following easy questions for each element:

- Is this element relevant for my case? If not, select the next element.
- What is the (digital intensive) target state?
- What is the (digital intensive) current state?
- Is there a fit or how big is the gap that we have?

- What are the major business benefit drivers for the change? Do you see major risks?
- What are the potential changes that we should implement to realize the benefits and mitigate the risks?

After this quick exercise, you have a very strong understanding of the magnitude of change you are facing. If the analysis is done together with stakeholders, there is also a common understanding about the needed steps and a good input for next planning steps.

The digital transformation map is an easy tool to highlight focus areas and to ensure that the big picture is communicated, balancing all of the default viewpoints.

If the top level map is too generic for your purpose or you need more details, each module in the overall map can be defined in more detail. The default detailed components are described in Figure 3 Digital transformation components. One may want to tune his/her own scoping as feasible in the target environment.

After using the digital transformation map at the level fitting your business problem, you have a good picture of the scope of your digital transformation challenge. The next step may be to complete a strategic communication package, start a concrete pilot with one of the identified priority items, use the findings for detailed program planning, or trigger next steps in the Midagon Innovation Wagon – process.

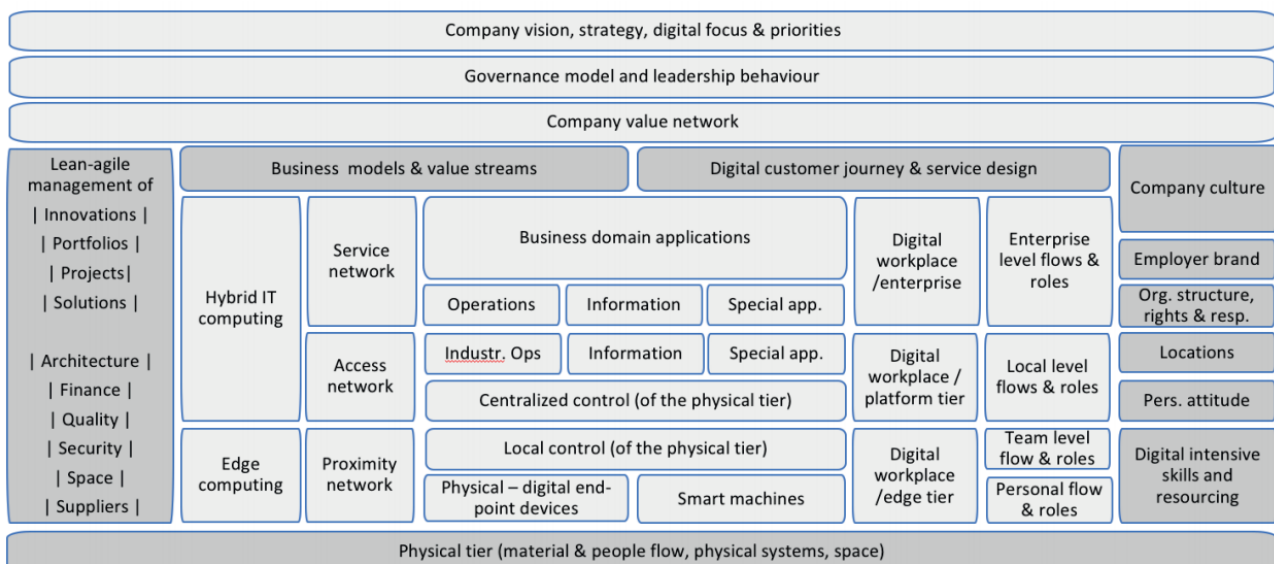


Figure 3. Digital transformation components

## Enabling components for digital transformation

All companies introducing digital services should make sure that there is enough support for the first innovations, core technical implementations and end users. Because digital transformation may introduce major changes in any company, many organisational capabilities must be checked during the journey.

The components at the top of the map ensure that the digital transformation is linked to the company strategy and that the overall transformation has an agreed direction. The company governance model must include digital agenda items and leadership style should be digital friendly. In order to understand the business environment, the value chain, network or digital related ecosystems should be defined in order to provide the context for more detailed development.

A lean-agile leadership style is a good way to enable digitalization. Digital innovation, agile portfolio, project and solution development practices belong to your core transformation toolbox.

The Midagon Innovation Wagon (MIG) is a framework that is used for identifying, prioritizing and implementing digitalization initiatives. The MIG approach is well-fitted to the purpose of Lean-agile leadership. For example, the idea and innovation pipeline should be established, the new product introduction process must include also digital development and the actual changes should be driven forward in the modern agile project mode. Midagon also has good practices for managing business value and benefit realization, and program and project management.

Non-functional capabilities like architecture, financial management and information security must also be made compliant to digital business needs. Supplier management for digital capabilities may include many changes compared to the current situation and includes, for example, new digital oriented supplier and technology selections.

Digital changes in a company are often so major that cultural change even needs to take place. At a minimum, organisational structures, roles and competence levels must be revisited. Typical tools for these areas can be found in the operational modeling – space together with the company HR - team.

## **The deliverables of digital transformation**

In many cases, it is expected that digitalization includes the introduction of new business models. At a minimum, we should improve the customer facing experiences. For this purpose, business model development can be advanced, for example, using the Lean Canvas – approach. The business context can be described using value network and value streams, tools that are familiar from the Lean – world. Service design and customer journey tools can be used to define targets for the customer experience.

Your own needs drive the starting point and overall scope of the technical solution development. The technical components of the map include a default enterprise architecture. The stack from right to left includes business process flows and roles, digital workplaces for the roles, information to be handled, applications to handle the information, data networks to access information and computing environments to host all of the needed digital elements.

The same stack from the bottom-up includes location dependent differences. At the bottom, there is physical space, physical flow and physical systems, such as factory floors and walls, car tires or a mechanical engine. The next layer includes physical – digital interfaces such as sensors, smart machines like robots and the local digital control tools located next to the actual devices. At close proximity, edge computing capacity needs to be managed, data communication must be in place, the digital workplace must be fitted to the physical environment and the team and individual workflow needs to be optimized. This layer has traditionally belonged to the area of operational technology or customer technology and processes are improved within a local factory or team.

One level up, all information is already available in digital format and the location of activities can be chosen more flexibly. The location may be a control room in a factory, at a site in the next building or even further away. A key purpose is to control the target physical tier remotely, for monitoring and perhaps even tuning purposes. Process flows, roles, workplaces, information, applications, networks and computing must be organized for this need. Traditionally, this layer includes components from operational technologies (OT) and information and communication technologies (ICT). The process improvement may take place in a hybrid mode between the global and local teams.

The third layer is a typical enterprise architecture layer, including the main business processes, company wide standards for the digital workplace, the main enterprise applications, and network and hybrid computing capabilities. The application landscape in a bigger company typically includes hundreds of applications, which presents a major data and application integration challenge.

For any digital solution, technical components must be selected, developed, integrated and launched for the target end user group. The launched service must then be managed operationally, enabling fast update opportunities for future, rapid change needs. Even at a minimum level, the scope is challenging and requires participation from many competence areas. It is recommended that the overall orchestration is done by an experienced, supplier independent party.

## Conclusions

The digital transformation map is a scoping and collaboration tool that helps organisations to increase discussion, awareness and opportunities in order to succeed in their digital journey. It simplifies a complex world of digital development, by ensuring that all parties can discuss this important topic. The map is a standalone tool. However, it is also compliant with relevant, related industry practices.

The map is compatible with the major industrial standards, bridging approaches across many disciplines. Therefore, it is also future proof. The key sources in the technical area are Industrial Internet Consortium (IIRA 1.8) and Industries 4.0, both of which are major reference architectures in the scope of digital transformation. Logistics and manufacturing operations oriented ISA-95 and generic Enterprise Architecture elements have also been taken into account.

The map is directly compatible with the Midagon digital transformation services (Figure 4). The Midagon Innovation Wagon (MIG) – framework guides the customer to identify digital opportunities and implement the key ones in the agile mode. The MIG includes services for digital intensive strategy creation, digital transformation planning, assessments such as technology and partner selections and the actual agile execution. The digital transformation map provides the default content for this journey, ensuring that all critical digital transformation aspects are considered in a structured way. The map enables you to choose also the most feasible priorities for your digital transformation, in an easy way.

## About the Author



**Tero Lindholm** is VP on Midagon, an experienced ICT company focused on project management and digital transformations ([midagon.com](http://midagon.com)), providing advisory services to senior leaders and accelerating digital projects. He has greater experience working with Top50 Finland's companies, executing hundreds of collectively programs.

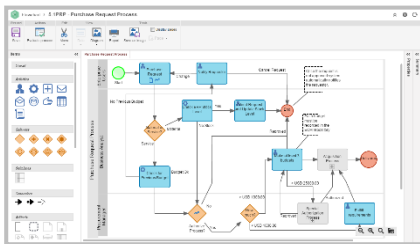




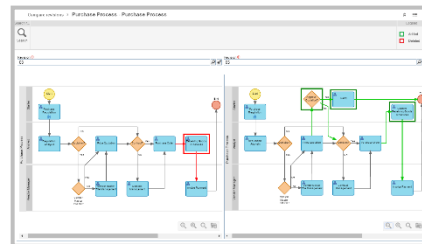
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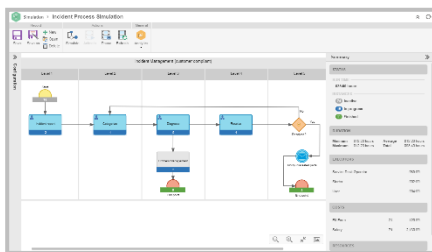


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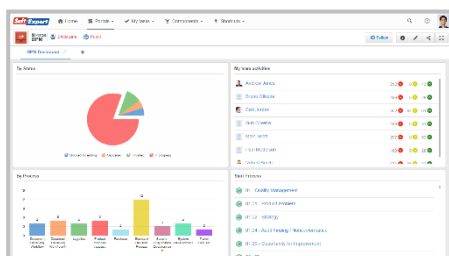
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