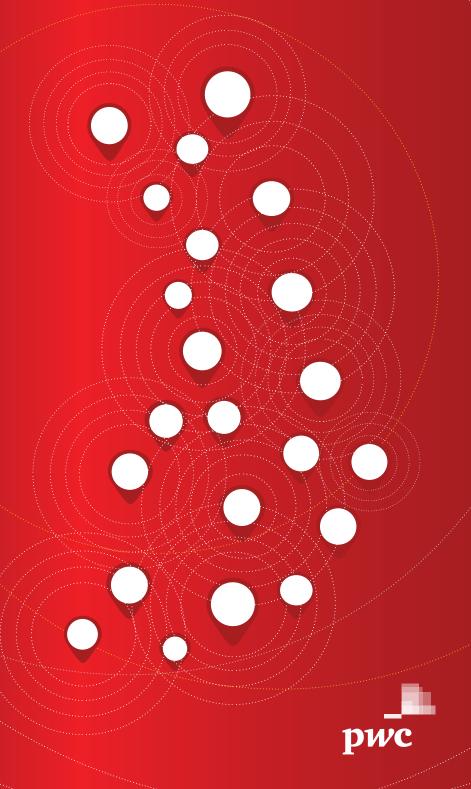
How Finland is embracing digital transformation

Digital challenges and success showcased





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Foreword

We live in exciting times. Never before has the digital economy promised so much to so many. Numerous studies confirm that Finland is well-placed to unlock this huge potential. We rank highly on digital readiness, usage of cloud computing services in enterprises and digital economy competitiveness. For a country set to celebrate its centenary, our state of digital readiness is yet another reason to be proud.

But what exactly are the elements that make Finland so ready to reap the rewards of digitalization? Well, as a result of high broad-band connectivity and citizens' digital literacy, Finnish businesses and public organizations have a head start developing digital strategies and driving digital transformation in businesses and society. As consumers, customers and users of public services, we've also come to expect products and services to be digitally available 24/7 – and safe.

The transparent and secure way in which personal data is managed is also crucial for building people's trust in the digital world. This ever-increasing amount of data, generated and harnessed, is a priceless asset for many organizations.

PEKKA HORO GENERAL MANAGER MICROSOFT OY That said, only interconnected data will deliver the enhanced experience customers expect. This will also lead to the productive workplace our modern workers demand, the optimal processes our business needs to stay competitive, and the new ideas we need to disrupt our industries.

It's hardly surprising then that CEOs believe that technology will transform their business more than any other global trend¹. Digital leaders outperform their peers in every industry², and most global CEOs consider 'digital' their number one priority³. To understand how Finland is performing in the fast-moving digital era, together with PwC we invited C-level leaders from leading organizations in Finland to share their views and insights on what their organization is doing to reimagine the future.

We hope their vision, ideas and actions will help you navigate your own digital journey. Together, with bold ambitions and actions, we believe we can shape Finland for a successful century ahead.

¹ PwC, Global Digital IQ® Survey: 10th anniversary edition, 2017

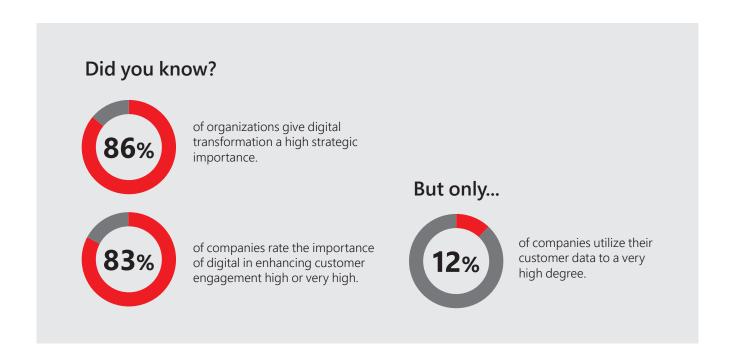
² MIT, Embracing digital technology: A new strategic imperative, 2014

³ PwC, 20th Annual Global CEO Survey, 2017

To make the most of digital opportunities and turn them into tangible business opportunities, you need to apply a truly holistic approach.

All the top performers in the digital-first era get their assets and capabilities – data, technology, processes, organization and talent – working in perfect harmony for the customer.

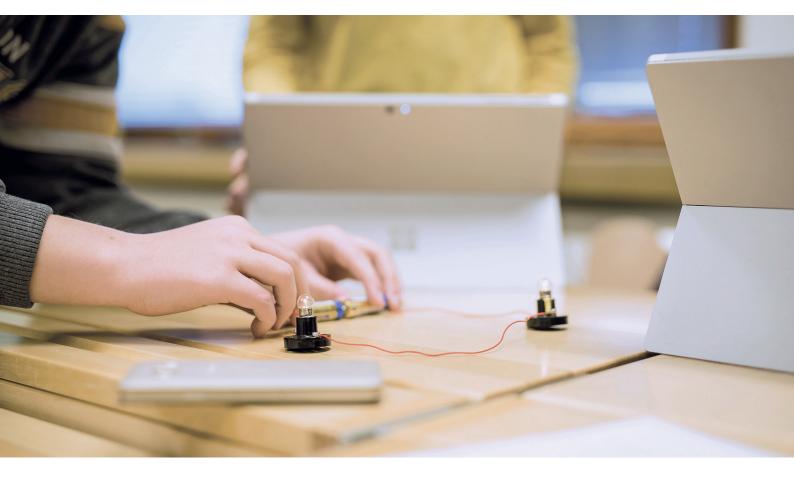
In short, to win at digital, you need to develop the perfect combination of these elements for your business ecosystem.





What is the digital state of the nation?

There's a lot to be learned from how Finnish organizations apply the concept and approaches of digital transformation in their visions and agendas. Here's why.



Studies have shown that CEOs believe that one thing will transform their business more than any other global trend: technology. And they're right. Digital leaders outperform their peers in every industry, which is why most global CEOs consider 'digital' their number one priority. As Finnair CDO, Katri Harra-Salonen said when interviewed for this study, "Who is on-board the digital team? – Everyone."

#3 According to the European Commission, Finland is the third most advanced European country in the digitalization of businesses.

The facts speak for themselves: digital is taking over. According to the European Commission's Digital Economy and Society Index (DESI), Finland is the third most advanced European country in the digitalization of businesses, after Denmark and Ireland (www.ec. europa.eu/digital-single-market/en/desi).

So, how exactly is digital changing business in Finland? In this study, we set out to discover how the leading Finnish organizations and their highest-level executives define 'digital' and how they see its importance and positioning when it comes to their strategic objectives. We look at whether executives see digital as a key lever in competition against rivals, improving and developing their current core businesses, or building the business of tomorrow and targeting new business areas. Finally, we examine the priorities and capabilities of these leading organizations in their digital transformation journey.

Businesses with high Digital IQ Score are likely to enjoy faster revenue growth and wider profit margins.

To put the study into context, we invited executives and managers from the top-100 Finnish enterprises to assess their Digital IQ with a 2016 PwC global benchmark tool.

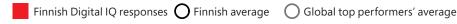
The tool allows the comparison of certain digital dimensions to a benchmark of global top performers. We define the global top performers as firms with profit margins greater than 5%. They must also have profit growth over the past three years greater than 5% and expected revenue growth over the next three years of 5%. The benchmark is based on research showing that organizations with a higher Digital IQ Score are more likely to enjoy faster revenue growth and wider profit margins.

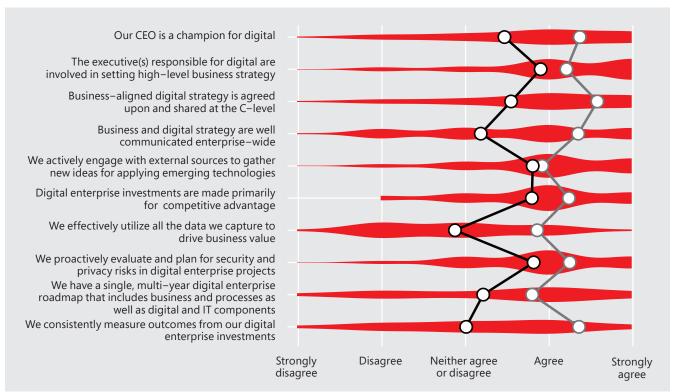
The average Digital IQ in Finland, as assessed by 104 respondents from 47 organizations, is 69.6. The global top performers, on the other hand, have an average Digital IQ of 85.9. Needless to say, it appears that the Finnish top-100 enterprises still have a way to go before fully embracing digital. But not all of them -- 15% of the participating organizations surpassed the top performer benchmark Digital IQ. Keeping in mind that the benchmark responses are individual and subjective views from different levels within the organizations, these results represent the variation that exists amongst organizations. There are differences in how each organization handles digital development, and how initiatives are both run and communicated throughout them

What's more, the results give powerful insight into the most common strengths and weaknesses that Finnish organizations exhibit in their approaches and strategies regarding digital transformation.

15% of Finnish organizations reach Top Performer level in Global Digital IQ benchmark

Digital IQ benchmark results





The largest gaps, as seen through the benchmark results, emerge in

- 1. the clarity and communication of digital strategy and vision throughout the organization,
- 2. the use of data in a comprehensive way to drive business value, and
- 3. the measurement of the outcome value from investments in digital.

Thankfully, Finnish organizations are doing very well in some areas. They are almost on par with the global top performers in engaging external sources for ideas for applying emerging technologies. And when it comes to involving their digital champions in setting their overall strategic direction, Finnish organizations are almost equal to the globe's top performers. As Marco Ryan, Chief Digital Officer of Wärtsilä says, "A top-down approach will lead to failure. Digital needs to be inborn in the heart of the organization."

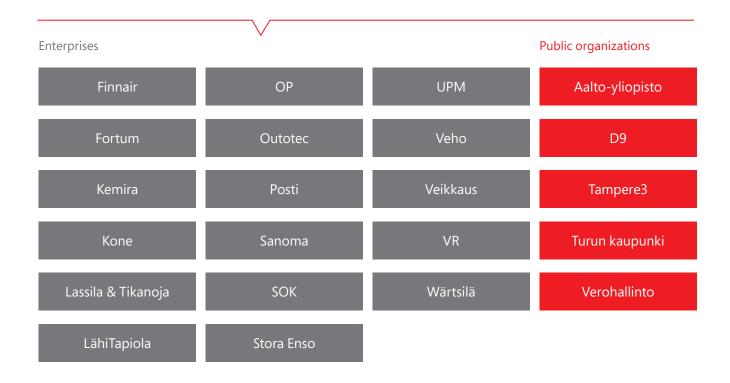
The most urgent development areas in digital business environments are strategy communication, data utilization, and outcome validation.

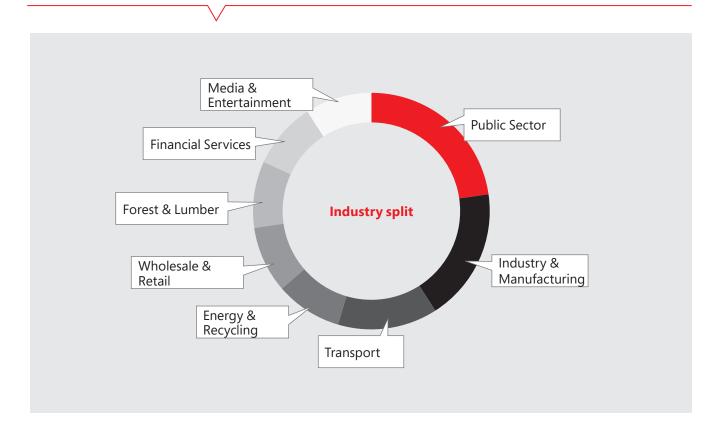
What did our study show?

We invited 22 inspiring Finnish organizations to help us discover the digital state of the nation in 2017. To better understand their approach to digital transformation, we sat down with corporate executives from 17 enterprises and 5 public sector organizations. In these discussions, we examined their approach to digital transformation from three key viewpoints: Why, What and How.

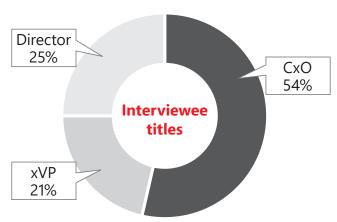
Digital transformation has often been studied on a practical level, but we wanted to better understand how business executives address the challenges in a variety of other areas. Prior PwC research has shown that in the last 10 years, the view businesses have on what is 'digital' has changed dramatically. Previously, most organizations considered digital as synonymous with IT, while today's view is more diverse: the concept of 'digital' includes established technologies, new ways of working, innovation, decision-making and the transformation of organizational strategies and cultures.

To really get into the digital mindset of different organizations, we targeted a wide spectrum of industries, ranging from the traditional, such as manufacturing, to the inherently digital, like media and entertainment. The organizations we interviewed are all significant players, both in their respective industries and Finland as a whole, and each has the expressed desire and adequate resources to transform their businesses and functions for the coming digital era.





We approached executives at the very highest levels of the organizations to understand the drive towards digital-first from a strategic viewpoint. While most Finnish companies have a C-suite executive responsible for digital transformation, the main drivers for digital in some organizations were seated as VPs or directors of a separate development unit.



Why go digital?

How important do the leading organizations consider digital to be and what impacts do they expect it to have in the near future?

25% see digital transformation as almost synonymous with technology.

To kick off the discussions, we asked the executives how their organizations define 'digital'. To our surprise, the definitions were polarized – one in four saw digital as nearly synonymous with technology or only related to investments in IT, whereas almost half saw it as a holistic business development mindset and an organizational culture rather than a set of concrete activities.

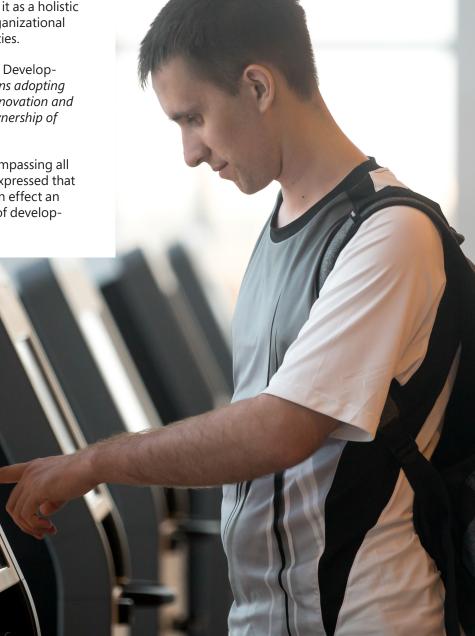
Kristiina Söderholm, Fortum Digitalization Development Lead said, "For us, digitalization means adopting the right tools for business development, innovation and cultural evolution. We want to bring the ownership of initiatives to the business units."

Some organizations define digital as encompassing all customer-related activities, while others expressed that the term has lost its meaning, and is now in effect an overused hype word to describe all kinds of development initiatives.

perceive digital as a holistic business

development

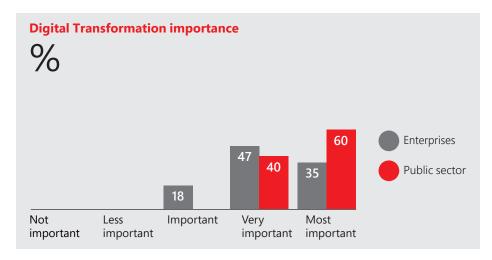
mindset.



At the heart of business strategy

No matter how they define it, almost every enterprise had addressed digital transformation in their strategies. Alternatively, they'd deliberately emphasized its importance by leaving the term out of the formalized agenda, as they see it as a vital part of everything they do. Only three of the enterprises didn't see digital transformation as a key driving point in their agenda. Interestingly, compared to the enterprises, the public sector respondents gave greater emphasis to the key role digital transformation plays. This clearly showed how the cultural shift to digital-first does not only affect industry silos but society as a whole.

86% of organizations give digital transformation a high strategic importance.



Q: How important is digital transformation on the organization agenda?

Wärtsilä

Transformation Importance

Wärtsilä sees digitalization as a fundamental driver across every aspect of the company from strategy to operations. Digital is at the heart of everything Wärtsilä does and it is the key enabler and driver of Wärtsilä's new strategy. Thus, digital will have an ever-increasing impact in Wärtsilä's processes, technology and culture in the future.



However, digital is not a new phenomenon for Wärtsilä: the company has vast repositories of data it has collected and stored over the past 15-year period. Now Wärtsilä looks to put these

data assets into work by breaking down silos in which the data has been historically stored, and driving, accelerating and scaling the utilization of data to coordinate the enterprise into a common, clear direction. This is why Wärtsilä has established a central digital organization to set the common digital agenda and coordinate the digital activities within and across different business divisions. In the divisions, there is a strong will and passion to unleash the potential currently hiding in the repositories.

About Wärtsilä

Wärtsilä is a global leader in advanced technologies and complete lifecycle solutions for the marine and energy markets. By emphasising sustainable innovation and total efficiency, Wärtsilä maximises the environmental and economic performance of the vessels and power plants of its customers.

Source: Company's web page

Wärtsilä has also made multiple other impactful investments to inject digital into the organizational DNA. The company has recently launched plans to build four acceleration centers across the globe; they conduct hackathons, workshops, seminars, different learning and development programs and internal certifications to embed digital into the mindset of all employees. As a concrete example of the magnitude of these initiatives, Wärtsilä launched their digital agenda internally in a 500-person event with participants from the C-suite through middle management to specialist levels, representing all their businesses and geographies.

Wärtsilä acknowledges that the only way to succeed in a holistic transformation is through the empowerment of the people that essentially make the organization what it is. If the change is led as a top-down, given initiative, the only possible outcome is a total failure.

How to create greater value

Next, we asked which business areas would create the most value through digital transformation within the next couple of years. Do they expect to accelerate their core business, branch out or create new businesses by completely reinventing business models?

Thanks to the perception that digitalization blurs the lines of traditional industries, digitalization is seen as a way to develop new businesses. It also raises interesting questions about their motives: What encourages enterprises to enter a new business, where they must be competitive against a set of experienced incumbents? The rationale is that with the help of digitalization, the

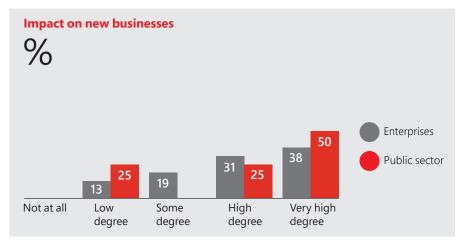
enterprises plan to come up with new, innovative ways of resolving their customers' problems, enabling them to beat the incumbents in their own backyard.

As Raimo Mäenpää, CIO of SOK said, "Digitalization is a means and a tool, not an end goal. It is, however, a terrific and versatile tool to gain competitive edge in the retail industry."

This pronounced disruptive impact is expected in new business areas, with 11 enterprises seeing the potential of digital transformation as high or very high. However, not all of them were on board with expansion. A number of enterprises don't see their transformation



What encourages enterprises to enter a new business, where they must be competitive against a set of experienced incumbents?



Q: To what degree do you expect Digital Transformation to impact business areas new to you in the following 24 months?

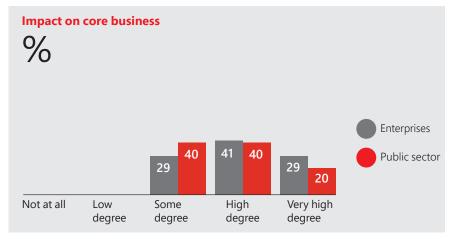
70% of enterprises look to corner new business areas through digitalization.

entailing new businesses, and prefer to focus on their current portfolio instead.

With one interviewed public organization declining to give a response, three out of four of the respondents saw the impact in new business areas to be high or very high. They recognized the opportunities to broaden or even redefine their current societal role. That said, one respondent didn't recognize significant new opportuni-

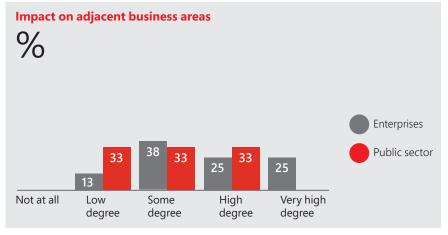
ties and plans to focus on developing and optimizing their current operations.

As well as developing new businesses, digitalization is seen as equally impactful on the organizations' core businesses or functions. Many of the respondents see digitally-enabled value opportunities within their existing business portfolio. 12 out of the 17 enterprises evaluated that this effect will be to a high or very high



Q: To what degree do you expect Digital Transformation to impact your core business in the following 24 months?

70% of enterprises expect digitalization will impact their core business to a high degree within two years.



Q: To what degree do you expect Digital Transformation to impact your adjacent business areas in the following 24 months?

Many organizations are looking to augment their core offering by introducing digital value-adding services to their portfolio.

Verohallinto

Business Focus

Verohallinto, The Finnish Tax Administration (FTA) is by and large the best known Finnish public authority and probably also the most advanced one in leveraging digital technologies to fulfill its mission. FTA has nearly two decades of history in digitalization and is currently in the process of executing the third wave of digitalization, serving individuals and organizations tributary to the State of Finland already with an automatization level of 80% in all their operations.

All digital development activity derives from the FTA mission to ensure the state receives all tax revenues set by the legislation. Automating the operations has delivered benefits to FTA in two fronts: on one side, it has increased the operational efficiency by reducing the need for manual work, and on the other side, it has also increased the total tax revenues. The rationale for the latter one is straightforward: by introducing easy to use, easily accessible and intuitive digital interfaces for people to fill in their tax returns, the better are the quality and completeness of the data in the forms.

As the world is changing and markets are becoming global, they pose new types of challenges also to the tax authorities. How to ensure tax revenue streams from all international online players? How will the banking ecosystem evolve? How will blockchain affect payments and other transaction mechanisms? What will be the impact of platform economy in collecting taxes?

These questions will have a big impact on the shape of the overall FTA strategy, which is highly driven, enabled by and dependent on digital technologies. Volumes that are on the table are out of the scale for others; even 5% of the total taxation volume amounts to 3.5 billion euros.

About Verohallinto

The Tax Administration collects the majority of Finnish taxes and tax-like charges. Proactive guidance, excellent service and credible tax control ensure the accrual of tax revenues. The goal is to have customers handle tax-related transactions independently and in the correct manner.

Source: Organisation's web page



For us, digital strategy is monitoring and reacting to changes in the surrounding environment.

MARKKU HEIKURA

degree, underlining the expectations of disruption often associated with the rise of the digital-first era. Similarly, three out of five public organizations identified opportunities to impact their core functions through digitalization, while the rest saw that there will be at least some degree of impact.

Adding adjacent business areas to their core current business is considered a logical first step among the respondents. All but two enterprises expect digital to provide openings to augment their core offerings in the near future, and thus a possibility for digitalization to generate at least 'some degree' of impact on the enterprise's bottom-line. The enterprises that recognize a high to very high potential in adjacent business areas mainly operate in B2C industries, where additional services provide a greater opportunity for new revenue streams.

Marco Ryan of Wärtsilä put it like this: "Digital transformation is about amplification of our core competencies, augmenting into new areas and accelerating the speed of doing so."

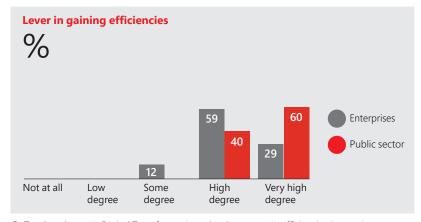
As for public sector organizations, several identified adjacent areas within their responsibilities. The responses were distributed evenly from low to high, indicating that while there may not be obvious adjacencies in their roles in society, the organizations are keeping their eyes open.

How does digital impact business?

In line with the expected impact on core business areas, executives see gaining efficiencies through digital transformation as the most promising strategic goal. Most of the enterprises also see sustaining current market position as an important driver for digital transformation. Many of them said they're looking to transform their business to keep up with competition.

The desire to streamline current functions is even more pronounced in the public sector, where many organizations find it difficult to significantly increase resources. Instead, they focus on improving their efficiency in the near future. This is reflected in the emphasis they give digitalization when it comes to remaining relevant.

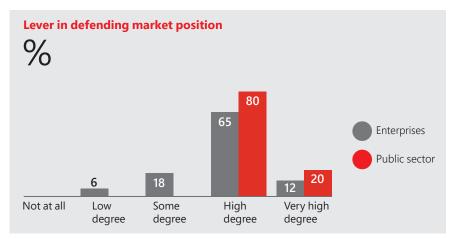
90% of organizations expect to leverage digitalization in making their operations more efficient within two years.



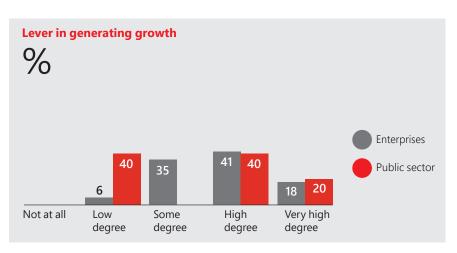
Q: To what degree is Digital Transformation a key lever to gain efficiencies in running your business within the following 24 months?

Even though new business areas were seen as nearly as promising as core business development, growth generation was the least pronounced out of the three objectives explored. Still, 10 out of the 17 enterprises do expect to broaden the existing revenue streams and open up significant new ones through digital transformation. The emphasis on optimizing current operations is heavier in the public sector, where two out of five respondents expect growth generation to be a factor to only a low degree.

60% of organizations prioritize digitalization over traditional means in search of growth within the next two years.



Q: To what degree is Digital Transformation a key lever to stay relevant and sustain your current market position within the following 24 months?



Q: To what degree is Digital Transformation a key lever to generate significant growth within the following 24 months?

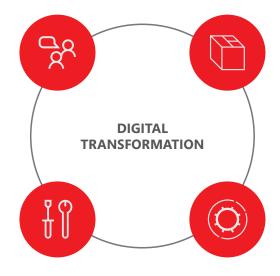
80% of organizations expect digitalization to be a key lever in defending their current market position.

What ways is digitalization being implemented?

Which digital levers are Finnish organizations using? Let's look at the digital-powered business initiatives through four lenses of digitalization.



We already know that digital transformation is the top priority and key enabler in the near future. So then, what are the key areas and initiatives that top executives are focusing on to prepare their businesses for the coming era of digital-first? To understand what the enterprises and organizations see as the most important goals, we look at their approaches through the four lenses of digital transformation: engaging customers, transforming products and services, optimizing operations, and empowering employees. This framework gives us a coherent, industry-independent view of how the organizations prioritize their actions.



It's creating deeper customer relationships

Digitalization has completely changed how businesses connect with customers. These days customers expect a closer digital relationship than ever before. Consequently, with constant, personalized interactions, companies can build loyal, profitable customer relationships.

As Mikko Vastela, CIO of LähiTapiola says, "Digital customers are like bees, bouncing from flower to flower. The digital channel is vital as a hygienic factor – the complete service experience is key."

It's empowering employees to work better

Employees need to be able to do their best work from anywhere, at any time, on any device. When you empower your employees with everyday technology,

you can focus more on business growth and spend fewer hours on operations that technology can support.

In Kristiina Söderholm of Fortum's own words, "We believe that giving ownership of their own work to the people themselves will both boost efficiency and make the work more meaningful."

Engaging Customers Transforming Products and Services 1. Harness data for a complete view on the customer journey 1. Utilize data to shift from hindsight to foresight 2. Draw actionable customer insights **MOSTLY EXTERNAL** 2. Disrupt with new business models, 3. Deliver personalized, differentiated products and services customer experiences 3. Differentiate and capture new revenue opportunities **DIGITAL MOSTLY PEOPLE MOSTLY AGILITY TRANSFORMATION Optimizing Operations Empowering Employees** 1. Protect your organization, data 1. Accelerate the responsiveness of and people your business 2. Create a productive workplace to 2. Improve service levels and reduce embrace diverse workstyles - and get costs by moving processes from MOSTLY INTERNAL things done anywhere analog to digital 3. Provide employees with insight to 3. Anticipate the future with intelligent drive faster, better decisions processes

It's transforming products and services

By using digital content, companies can transform products, services and business models. Consider this – if every company were effectively a software or digital company, how would the nature of their products and their overall business model shift? Would their gross margins shift from "things" to types of services delivered because of digital technology?

It helps optimize operations

When you optimize your business by harnessing the power of data, you can reshape relationships with customers and providing unprecedented levels of service. Service is continuously improved by gathering data across a wide, dispersed set of endpoints, drawing insights through advanced analytics, and then applying this information to introduce continuous improvements.

There's a big difference in this area between enterprises and public organizations: Enterprises emphasize the outward-looking areas of customer engagement and product and service development, while public organizations stress the importance of the internal areas of employee empowerment and operational efficiency. This difference arises out of the leaders' awareness of their competitive landscape. Public organizations tend to have less competition over customers, while providing an engaging customer experience and superior value is key for enterprises in both the B2C and B2B domains. This also enables the public organizations to focus their efforts more on internal efficiency.



Engaging customers is most important

It's no surprise that customer engagement stands out as the most prominent area for enterprises to focus on.

In fact, Reijo Karhinen, CEO of OP said, "The customer is at the centre of everything we do."

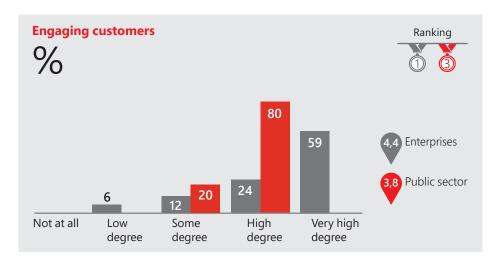
14 out of the 17 interviewed enterprises rate initiatives in this area as a high or very high priority. The leading executives are well aware that delivering a fluid, engaging customer experience is vital in today's competition for customers. While the majority of public organizations gave customer engagement a high priority, none of them gave this area the highest priority. Customer-facing activities are on average only the third most important digitalization factor in the public sector.



Digital customers are like bees, bouncing from flower to flower. The digital channel is vital as a hygienic factor – the complete service experience is key.

> MIKKO VASTELA LÄHITAPIOLA

60% of enterprises rate enhancing customer engagement as the number one priority in their digital transformation journey.



Q: To what degree do you prioritize digital-enabled initiatives helping you to engage your customers?

OP

Customer Engagement

There are few industries globally which face such a disruption as Financial Services. Not only is customer behaviour driving digitalization but also regulation is putting pressure on revamping the current business.

OP addressed the disruption with its new strategy in 2016, revolutionary by many accounts considering the cooperative business model. Automating current business and building business around new digital ecosystems are the cornerstones of their new strategy. The doubled development budget goes to show the scale of change.

At the heart of the strategy is the customer experience, which is now the most important measure of success. In the past, customer focus meant focusing on sales processes, while now development is centred on the customer. Design thinking and providing an engaging digital experience has become the cornerstones of development. OP also values the physical channel, and emphasizes the importance of developing the branch into a meeting space.

OP also wanted to take a step away from traditional Financial Services culture by challenging the way it looks at customer data. OP is now taking the first steps to proactively utilize the customer data in its possession for improved and more targeted services.

OP has introduced agile development models and renewed its group organization to support digitalization. Like the majority of other companies in the industry, OP is nevertheless slowed down by the legacy of old systems. To change the mindset from the intricacies of legacy solutions to the opportunities of new businesses, OP wants to put even more emphasis on developing the competencies and culture required in the digital world.

About OP

OP Financial Group is Finland's largest financial services group. It provides its customers with the best loyalty benefits and the most extensive and diversified range of banking, investment and insurance services. The Group has three business segments: Banking, Non-Life Insurance, and Wealth Management.

Source: Company's web page



The customer is at the centre of everything we do.

REIJO KARHINEN

How transforming products and services ranks

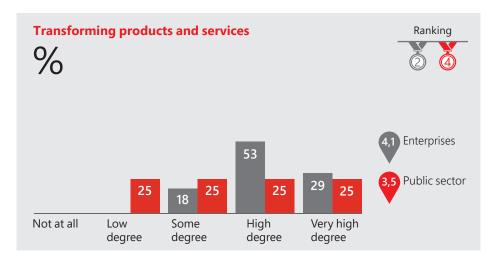
The enterprises see transforming products and services as the second highest priority, with many stating that there's no new product initiatives that, if not essentially digital, do not at least include a digital component.

Eetu Paloheimo of Veikkaus, for example, said, "Nothing is taken into production, if it cannot be measured. This is imprinted in our development DNA. Moreover, everything we do is based on hypotheses – if a hypothesis turns out to be wrong, we have the mandate to kill the feature."

Much like customer engagement, 14 out of 17 enterprises see product and service transformation as a high to very high priority with many mentioning the shift from products to a more holistic end-to-end value providing approach as a possible direction for development.

The public sector responses were broadly distributed, and this area was seen as the least significant part of their digital transformation agenda.

For **30%** of organizations transforming their products and services to meet the needs of a digital-first world is highest on the digitalization priority agenda.



Q: To what degree do you prioritize digital-enabled initiatives helping you to transform your products and services?

Veikkaus

Products and Services

The gaming and gambling industry has been in the midst of digital transformation already for years. In fact, in 2016, already almost half of Veikkaus' revenues streamed in via their online sales channels. Veikkaus has been a pioneer in developing digital applications as the business environment and the consumer customer behavior have evolved.

Due to the nature of gambling business, customers must always be identified before any online gaming or other interaction takes place. This provides Veikkaus with an unbeatable advantage of collecting extensive repositories of customer data, which they also utilize effectively.

On top of the data assets, digital development in Veikkaus is powered by lean development models and a start-up mindset of the people. The company has an incredible speed of launching several new products to the market on a weekly basis. Each of the new product introductions is carefully monitored by predefined business and customer experience metrics.

Beta and extensive A/B testing have been key components of the product and service launch concept already for a while. Recently Veikkaus has also employed multiple machine learning 'agents' to compete against each other in optimizing the personalized user experience delivered to the customer logging in to their Veikkaus account. This optimization is a continuous process aiming to maximize the customer lifetime value, instead of the value of single interactions.

The journey for Veikkaus to become a data-driven organization has not been a walk in the park. Also for Veikkaus, it took time to make the development mindshift from strong individual influencer opinions to believing that the truth resides in the data at the end of the day. Nowadays, in product development, Veikkaus have found the correct balance between knowing what works and seeing what works.

About Veikkaus

Veikkaus operates all the gambling games that are offered in Finland. Veikkaus games are estimated to generate nearly one billion euros a year. The revenue is used for the benefit of Finnish society in its entirety. Veikkaus' beneficiaries are active in the fields of culture, sports, science, and youth work, social welfare and health, and the equine industry.

Source: Organisation's web page



Nothing is taken into production, if it cannot be measured. This is imprinted in our development DNA. Moreover, everything we do is based on hypotheses – if a hypothesis turns out to be wrong, we have the mandate to kill the feature.

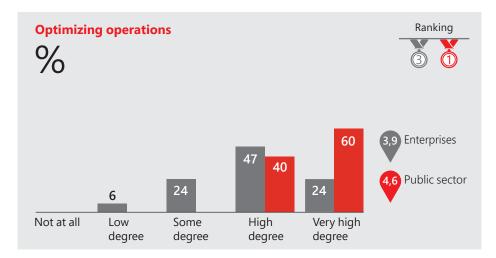
EETU PALOHEIMO

Views differ on the importance of optimizing operations

For enterprises, optimizing their operations is only the third highest priority. Although, 12 out of 17 enterprises said it has a high or very high priority. The most common discussion was around the field of robotics and automation, with varying levels of success in ongoing initiatives. This shows how expectations have evolved, with efficiency previously being considered the area that could most benefit from digitalization.

However, for the public sector, improving efficiencies is clearly still the most important potential benefit. Three out of the five respondents gave this the highest priority, putting it in the top spot of their agendas.

For public organizations, improving operational efficiency through digitalization is the key factor in their transformation agendas.



Q: To what degree do you prioritize digital-enabled initiatives helping you to optimize your operations?

S Group

Operational efficiency

Retail industry has been, without a doubt, one of the front line industries in digitalization. As the largest retailers serve a customer base of millions – in other words, the whole population of Finland – and handle tens of thousands of different articles on a daily basis, technology provides an irreplaceable lever to efficiently handle the massive scale. Thus, IT-enabled operational efficiency in improving supply chain management has been a focal point for retailers for decades.

S Group has been one of the leading players in this field, winning market share in the declining overall market during the past few years by applying a strategy that has focused on lowering prices. This business strategy has been mainly enabled through IT and increasing the level of intelligent automatization in goods handling and distribution operations overall.

One of the most impressive examples of S Group's initiatives is the state-of-the-art logistics distribution center, which is one of the largest and most modern centers in Europe. The center operates with a high level of automation and is tightly connected with the logistics ERP solution to reduce process 'waste' throughout the delivery chain from warehouse to trucks and from trucks to store shelves. Moreover, S Group also pursues capturing unrealized digital potential related to supply chain operations. The areas from which they seek additional benefits include utilization of data and analytics in planning, automatization of product lifecycle management and enhancing predictive analytics for store replenishment operations.

About SOK

S Group is a Finnish network of companies operating in the retail and service sectors. S Group comprises the cooperatives and SOK Corporation along with its subsidiaries. The purpose of S Group's operations is to provide co-op members with competitive services and benefits in a profitable manner.

Source: Company's web page

In addition to offering more attractive pricing to consumer customers, digitalization enables the development and launch of completely new types of services for S Group. For example, once the huge quantities of data across different product segments have been harmonized and enriched, consumers can be offered with just-on-time product information in a completely new manner not only in mobile, but also in other channels and touchpoints.

As the competition in Finnish retail market is constantly tightening and consumer demands are increasing, digitalization will play a key role in sustaining and strengthening the market position of S Group in the future.



Digitalisation is a means and a tool, not an end goal. It is, however, a terrific and versatile tool to gain competitive edge in the retail industry.

RAIMO MÄENPÄÄ

Empowering employees is a priority

Employee empowerment divided the enterprises into two groups: Nine respondents said it was either a high or very high priority, while the other eight respondents focused more on customer engagement and transforming their products and services. The most common initiatives include developing or adopting tools and platforms for remote work and collaboration.

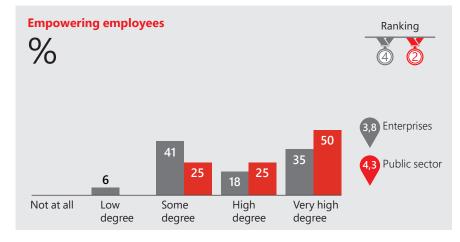
Katri Harra-Salonen of Finnair put it this way: "As a company, we have assessed and analyzed our starting point - what do we already have to build on, what is our digital maturity? Our vision and strategy are the goals we strive towards, with technology and especially our people as the key enablers."

For the public organizations, this was their second highest priority, with some pointing out that because the public sector has a competitive disadvantage when it comes to attracting top talent, they must invest in the well-being of their employees and give them the opportunity to influence their own work.



We believe that giving ownership of their own work to the people themselves will both boost efficiency and make the work more meaningful.

> KRISTIINA SÖDERHOLM **FORTUM**



Q: To what degree do you prioritize digital-enabled initiatives helping you to empower your employees?

40% of organizations emphasize employee empowerment as a top priority through which the benefits of digitalization are obtainable.

Fortum

Empowering Employees

Among many other industries, the energy industry will face increasing disruption by digital technologies in the future. As the core electricity generation and retail businesses are highly competitive and subject to new players entering the market, Fortum is actively seeking ways to utilize the right digital tools and technologies to foster innovation, improve its business and change the culture.

One of the recent, most transformative digital-related investments is Fortum's decision to move its head office operations and personnel into new, modern office premises. The new office layout was designed primarily to facilitate teamwork and innovation through both the design of physical space and the introduction of digital collaboration tools into the meeting rooms and brainstorming areas.

Fortum's collaboration initiative is not only limited to the head office staff. Simultaneously, Fortum is deploying a new cloud-based collaboration and productivity platform to all its employees in all operating countries. The transition from legacy applications to this new solution will be one of the key drivers towards a more efficient and effective knowledge sharing culture within the whole Fortum personnel.

Power plant maintenance is also one key area for digital opportunities. For operations and maintenance, Fortum has deployed data analytics applications to provide the personnel with just-in-time information related to the equipment subject to maintenance. Fortum also uses VR in operator training and preparation for maintenance tasks in areas, which are restricted from access during ongoing power generation.

Employee empowerment and cultural transformation are seen as crucial enablers for taking the full advantage of the digital technologies in building the Fortum of the future.

About Fortum

Fortum is a leading clean-energy company that provides its customers with electricity, heating and cooling as well as smart solutions to improve resource efficiency. They want to engage their customers and society to join the change for a cleaner world.

Source: Company's web page



For us, digitalization means adopting the right tools for business development, innovation and cultural evolution. We want to bring the ownership of initiatives to the business units.

KRISTIINA SÖDERHOLM



How are businesses implementing digital transformation?

There are nine key capabilities for succeeding in digital transformation. How are the leading organizations approaching them?

From creating state-of-the-art in-house digital development capabilities through training and recruitment to gathering the right collaboration partners around them, these leading organizations are spearheading

the creation of the Finnish digital ecosystem. There is, however, no one set path -- each organization is mixing and matching different approaches to build the digital environment that is right for them. To understand how they have approached digital transformation and what they have done to accelerate the change from the old world to the new, we asked the executives to discuss the concrete initiatives they have undertaken during their journey. We have outlined nine different categories of capabilities to get a thorough picture of the ways these organizations drive digital transformation, and their emphasis and success in them.

Ranking of the key capabilities Agile digital development External collaboration Modern way of working Innovation and co-creation Governance and performance Value realization Creating competencies Leveraging customer data Digital challenger setup Digital challenger setup

Not at all

Very high degree

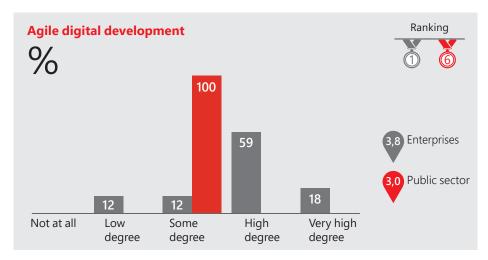
How to create the right culture

The shift to a digital-first world requires securing agile digital development culture, methods and technologies, while operating day-to-day IT at the same time. 13 out of the 17 enterprises saw this two-speed technology development process as a key success factor and rated it as a high or very high priority.

Recently, some non-software enterprises have begun to in-house the digital skills to support their development efforts. An accommodating infrastructure is a vital component for succeeding in this transformation. The leading enterprises focusing on a development-friendly technology infrastructure are also forerunners in driving a cultural change and applying a leaner approach in driving their initiatives forward. Some enterprise respondents see a top-down manage-

77% of businesses consider twospeed IT as crucial for success in the digital era.

ment approach as an inefficient way to steer the enterprise's development agenda -- the best ideas, after all, may arise at any level within the organizational hierarchy. To give these ideas the opportunity to thrive and flourish, there must be a way to incubate and test them in a more agile, and small scale way.

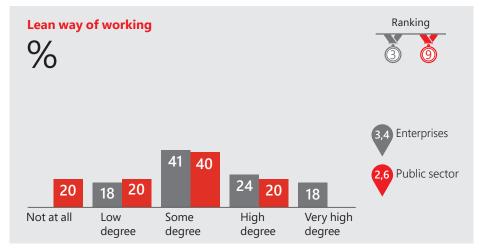


Q: To what degree do you secure an agile digital development process, while effectively operating your day-to-day IT?

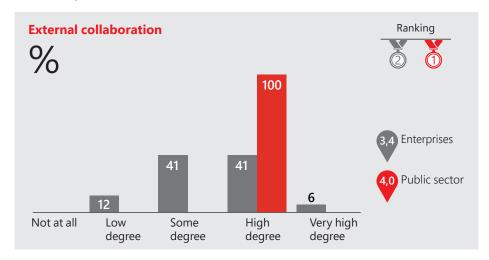
For the public sector, there is more emphasis on implementing digital initiatives through collaboration with external partners. With partnerships and collaboration seen as the highest-valued initiative in the public sector, the respondents did not recognize the need to implement a modern two-speed tech stack or develop their own company culture towards a more modern startup approach as vital. As the short-cycle digital initiatives are implemented through partners, the development culture on the implementing side is seen as more important.

Still, almost half of the enterprise executives gave high importance to external collaboration through building partnerships and participation in ecosystems. With the **100%** of public sector organizations employ partners as a primary means for digital development.

wide range of different skills needed in a digital-first world, enterprises have recognized that building all these capabilities is a monumental task and competition for talent is fierce. Collaboration with partners widens the spectrum of available skills and insight, and is seen by many executives as a vital part of reacting to current challenges.



Q: To what degree do you apply a lean startup approach to succeed with Digital Transformation / development initiatives?



Q: To what degree do you collaborate with external partners and eco-systems to succeed with your Digital Transformation?

How to ensure success

In line with the Digital IQ benchmark findings, one hurdle Finnish organizations seem to be struggling with is measuring the success and potential of digital development initiatives. This proved to be one of the capabilities with the most divided responses from enterprise executives, with responses somewhat equally distributed from low to high degree.

The approaches ranged from employing traditional demographic and financial KPIs to more innovative initiative-specific measures. Both approaches were backed up by stories of success and shortcomings. In other words, a silver bullet to measure and understand how transformative digital initiatives achieve their intended effect is yet to be discovered. The leading Finnish executives are both open-minded in enabling novel approaches and driven in demanding concrete results. That said, they're ready to entertain the idea



Who is on board the digital team? - Everyone.

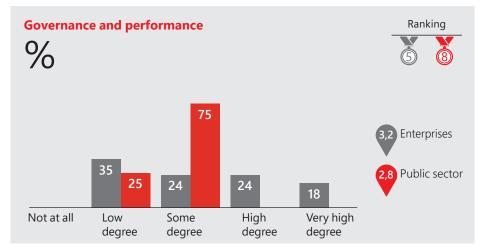
> KATRI HARRA-SALONEN **FINNAIR**



that the real value in a specific initiative might not be apparent until sometime in the future, and avoid shutting down promising projects too abruptly.

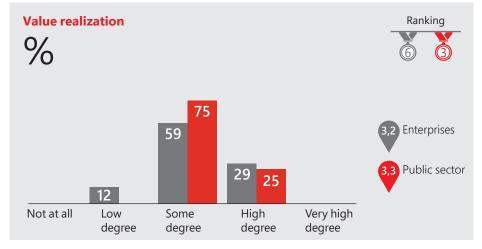
The executives, however, are fairly confident that they engage the right people in driving digital initiatives, and that these people have adequate resources to implement the changes. Currently, the focus is mainly on defining the appropriate process to filter out the key stakeholders and influencers, and ensuring support from all necessary levels.

Identifying the individuals with the right combination of business understanding and digital know-how is the bottleneck in driving the digital initiatives effectively throughout the organization. Many interviewees stated that finding the person in charge is usually not a problem. The real challenge is finding adequate resources from different corporate levels to support digital initiatives.



A silver bullet for measuring digital success is yet to be discovered.

Q: To what degree do you ensure use of relevant metrics to evaluate and prioritize digital opportunities typically subject to considerable uncertainty?



Q: To what degree do your key people succeed at driving and realizing the value intended with Digital Transformation?

Ensuring value realization is a common challenge for businesses and public organizations.

The challenge of finding top talent

Through both training and recruitment, creating essential competencies to drive businesses forward and develop their digital portfolio is a vital factor in future success in the digital-first economy. Both the enterprises and the public organizations indicated that the competition for the top talents is pervasive.

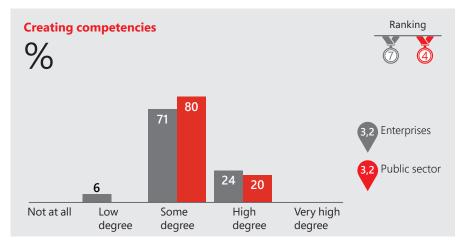
Making the most of external insights

Although customer engagement and product or service development is highly prioritized, the level of effort put into customer involvement in idea generation is surprisingly low. Only five of the enterprises considered their customer engagement in innovation and co-creation purposes to be a high priority.

Customer and end-user panels have been called upon for decades, but these methods have yet to take the digital leap. Nonetheless, all the respondents recognized its value and have at least some experience in engaging end-users in product and service development at a very early stage.

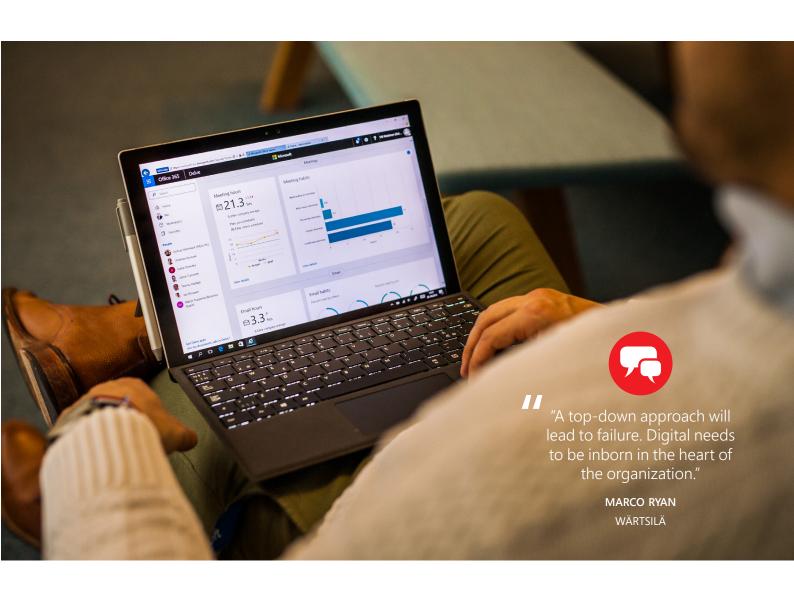
The public sector respondents scored co-creation and customer involvement a bit higher than their enterprise counterparts, even though customer engagement was seen as only the third highest priority in their digital transformation agenda. Some public sector organizations have seen significant opportunities in civil involvement with the recent developments in online participation and feedback tools.

The biggest surprise of all is the degree to which enterprises and public organizations alike underutilize their customer data sources. Many enterprises and public organizations have ongoing initiatives in this area. Some of these initiatives are recent endeavors, however, and have a long way to go before delivering profitable results.

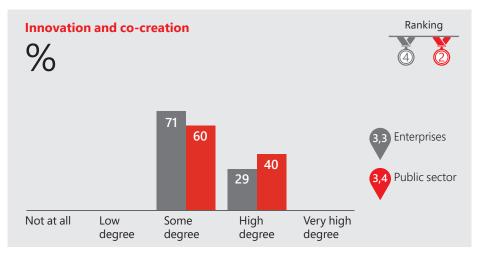


Q: To what degree have you succeeded in creating essential competencies for Digital Transformation initiatives?

Finland is experiencing a severe shortage of digital talent.



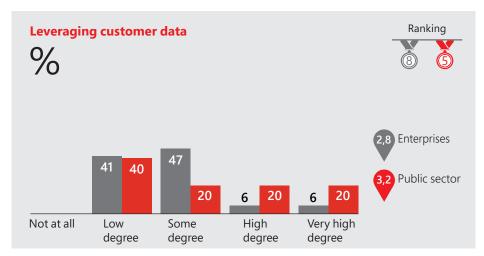
All participants see room for intensifying customer co-creation.



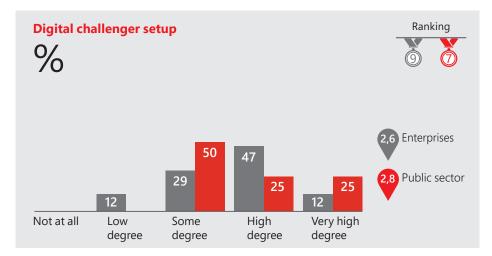
Q: To what degree do you engage and involve customers in idea generation, and product and service development?

A more structured way to get external input by inviting outside subject matter experts to challenge the status quo and way of working was one of the most unfamiliar approaches for the organizations. While few organizations listed significant challenger setup initiatives, several saw these as an interesting opportunity for the future with plans already afoot within the organizations. In addition, the organizations that admitted to not having any digital challenger approaches ongoing identified the potential they could unlock, which suggests that the future might introduce interesting new agile management approaches.

Only 12% of enterprises utilize their customer data to a high degree.



Q: To what degree do you utilize and integrate available customer data sources and employ advanced analytics?



Q: To what degree do you have a structured challenger setup that helps you ensure your approach and offerings continuously stay sharp in the market?

Finnair

Competence

From their first flight in 1924 to the award-winning Finnair app, Finnair asserts that all their success comes down to their people – people having a can-do attitude, courage and a focus on clarity. Now they are turning their focus on the digital-first business of tomorrow, and applying this same level of determination in pursuing the opportunities created by digitalisation.

At the end of 2016, Finnair embarked on an ambitious journey, the destination of which is – in their own words – to build the best agile digital development team in the Nordics. From providing the most fluid customer experience for travelers worldwide to optimizing their operations based on massive amounts of data generated daily, Finnair is on a route to create the in-house capabilities to identify and realize the extensive digital possibilities both inside the organization as well as in their customer interface.

Finnair recognizes that converting the digital possibilities to business advantages relies on the people. In addition to a determined recruitment campaign, Finnair wants to help people develop themselves at work, to grow in the direction that supports their passion and strengths. This applies to their digital transformation agenda as well. With buy-in from the C-level and the strengthening of their executive board with innovation and digitalisation experts, Finnair is transforming the company culture to embrace the new digital era and inviting every employee to be a part of it.

About Finnair

Finnair is a network airline specialised in flying passengers and cargo between Asia and Europe. For people in Finland, they want to offer the best possible flight connections to the world, whereas to people travelling between Asian megacities and Europe, they want to offer the smoothest and fastest connections in the northern hemisphere via Helsinki.

Source: Company's web page



As a company, we have assessed and analyzed our starting point – what do we already have to build on, what is our digital maturity? Our vision and strategy are the goals we strive towards, with technology and especially our people as the key enablers.

KATRI HARRA-SALONEN

Which emerging technologies and future skills are crucial?

What does the future hold? We invited the executives to gaze into our crystal ball and give their predictions of what their technology portfolio might look like five years into the future, and which of these technologies would be most disruptive in their industries. Compared to a benchmark run by PwC in 2016, the portfolio of emerging technologies the Finnish organizations expect to invest in and prioritization within it are no different to those of their international competitors.

Overall, the respondents evaluated AI to be the most disruptive technology within the next five years. Common use scenarios also touched on the subject of machine learning, as current amounts of generated data are already virtually impossible to put into use manually. This problem will only continue to grow along with the generalization of IoT – the technology deemed second most disruptive.



Digital transformation is about amplification of our core competencies, augmenting into new areas and accelerating the speed of doing so.

> MARCO RYAN WÄRTSILÄ

Finnish leaders share the global vision of AI being the most disruptive technology over the next 5 years.

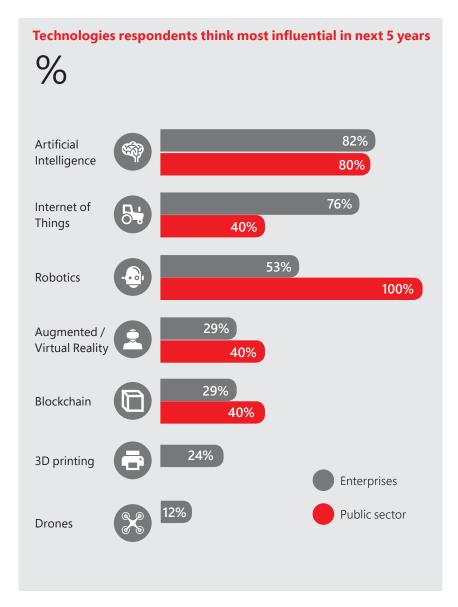
In the public sector, robotics has everyone's attention. Every respondent saw robotics as being influential within the five-year time span, due to the sector's predominant business aspirations of gaining efficiencies and optimizing operations. While practically all respondents have already had positive experiences of implementations with robotics, even in large-scale process automation contexts, one respondent did make an interesting point: They had already met their first unemployed software robot. A worrying vision of the future, perhaps?

These technologies have already begun to show their promise, and expectations for future developments are continuing to mount. Throughout the interviews, the respondents had plenty of examples of promising proof-of-concept types of initiatives utilizing the most recent technologies, such as drones, blockchain, 3D printing, and VR -- but stories about turning these into real value-producing applications are still in the making. As a number of interviewees pointed out, scaling these technologies into feasible value-added products and services is heavily dependent on the distribution of commercial applications of the technologies. Put it this way: Do you carry the cardboard 3D goggles you got for your last birthday to the grocery store with you?

We asked the executives to assess their currently available skill set in using and benefiting from these technologies in their businesses. Paradoxically, these leading enterprises tend to evaluate their skills as average, or even slightly below, when compared to their competitors. Even though not an objective measure of true skill pool within the enterprises, this result likely

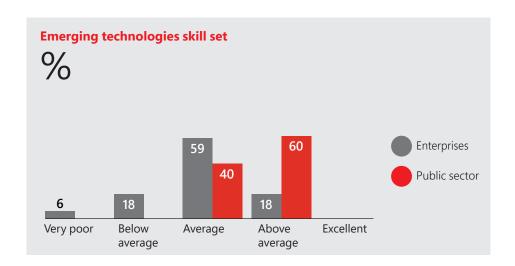
reflects the main difficulty enterprises encounter in leveraging emerging technologies: overall scarcity of high-skilled resources and lack of successful production-state implementations exploiting the newest breakthrough techs.

In addition to the lack of satisfaction success in competence creation, even these high-profile enterprises are struggling to fill the skill pool with experts in all relevant emerging technology categories. The situation is certainly not as bleak as one respondent put it: "Com-



Most of the current emerging technologies are still yet to prove their real business value. pared to peers we are at the average level, which equals 'very poor'". Nevertheless, supply does not appear to meet demand when it comes to innovative technology resources. Interestingly, the public sector respondents were much more confident in their ability to leverage these emerging technologies in the future. Still, no respondents were satisfied enough to evaluate their level of available skills as excellent.

The shortage of digital talent is making it hard to exploit emerging technologies.



LähiTapiola

Emerging Technology

LähiTapiola has a broad portfolio of ideas and concepts related to leveraging emerging technologies to deliver additional business value. In the customer interface IoT is clearly one of the technologies with the biggest of potentials to transform the insurance business. All customer-facing digital initiatives are closely linked to LähiTapiola's strategy of enabling people to live healthier lives.

The main logic behind LähiTapiola's strategy is to create win-win scenarios for both the insurer and the customer. For example, in the concept of intelligent health insurance, the end customer is given an activity wristband to provide inspiration and insights for the person to drive their behavior towards a healthier direction resulting in a longer, happier lifetime. At the same time, this reduces the insurer's risks and amount of health insurance payments.

Similarly, the concept of intelligent home insurance builds on a connected home ecosystem, in which different devices and sensors connect to provide data related to e.g. moisture and temperature conditions, helping the customer to take better care of the property and once again reducing risk for the insurer. One interesting development path in this context are the smart contracts where, for instance, the connected home could directly alert the contracted plumber in case of a water leak, reducing the severity of potential damage and minimizing repair costs.

LähiTapiola has a strong collaboration and partnership approach with technology and other service providers in creating and delivering digital customer-facing solutions.

About LähiTapiola

LähiTapiola is a mutual group of companies owned by its customers. It serves private customers, farmers, entrepreneurs, corporate customers and organisations. LähiTapiola's products and services cover non-life, life and pension insurance, as well as investment and saving services. They are also professionals in corporate risk management and welfare in the workplace.

Source: Company's web page



All products will be digital-enabled to allow for more customizable modularization than ever before, thereby providing the customer with the opportunity to mold their own product and price point.

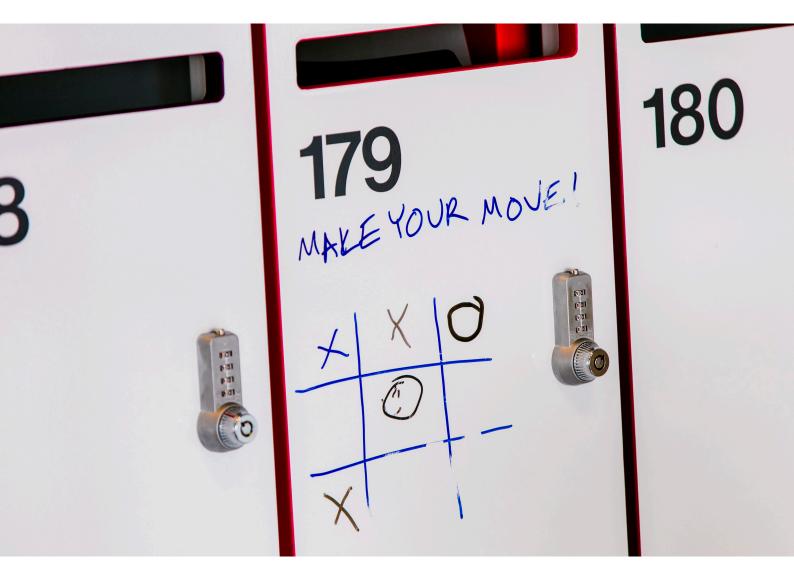
MIKKO VASTELA

Conclusions

Finland's leading organizations might have diverse views on what matters most in strategy and operations - but the majority are all on the same path towards being champions of digital transformation.

The interviews with the highest level of executives in these leading Finnish organizations shed light on the differences and similarities in their digital transformation journeys, and gave us deep insight into the diversity of approaches, agendas, and priorities that are powering digital opportunities.

These approaches ranged from emphasizing growth through enhancing customer-facing activities and overall service experience, to putting efficiency first through operational excellence and employee empowerment -- and everything in between. A divide emerged between the enterprise and public sector respondents. Enterprises focused more on external customer-facing domains of engagement and product or service transformation, while public organizations invested more in internal operations and empowering employees. From one end of the spectrum to the other, every organization had addressed the evolution towards a digital-first world in their agendas and visions. In fact, 19 out of the 22 organizations saw digital transformation as one of the topmost priorities,



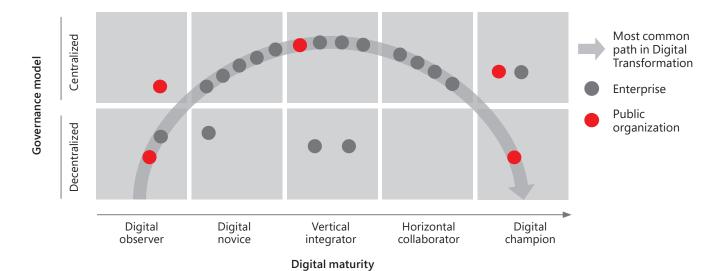
with nine seeing it as the most important on their current agenda.

By evaluating the organizations based on their digital maturity and the governance model applied for their digital transformation, we can see that the organizations are on the way to becoming digital champions in their own fields. Most organizations follow a common trajectory of centralizing their digital development governance to refine and spread the best practices within the organization before putting the separate functions themselves behind the wheel. However, some organizations have intentionally adopted different

approaches: managing it from a central role, or giving rein to functional units closer to the day-to-day operations, where they see the most innovative ideas arise.

While central coordination promotes adoption of the best practices throughout the organization, a decentralized governance model lets different units adopt the practices most suitable for themselves. In a large corporation with several core business functions, one set of practices and guidelines may not work for everyone. In a decentralized model, open and instant communication becomes key – not a trivial issue, as is apparent from the Digital IQ benchmark results where

The journey towards digital maturity



Digital observer

Digital not a top priority. Initiatives run by individual people with a trial mindset. No goals or metrics for success agreed on. Business runs as usual, digital a notional topic in strategic discussions.

Digital novice

Digital recognized as a current or near-future priority. Sporadic digital initiatives run, results monitored and reported upwards. Initiatives by nature explorative and targeted at single functions or tasks. Digital approach regularly on the executives' agenda.

Vertical integrator

Digital a top priority in at least one business unit. Resources appointed and new ways of working encouraged. Digital initiatives seen as a cascade within a business process. Responsibility for driving the approach designated.

Horizontal collaborator

Digital articulated as a top priority. Ways-of-working and best practices shared and distributed. Corporate-wide added value sought for through governance, collaboration and communication. Key stakeholders share a common mindset and aspiration of what the digital future looks like.

Digital champion

Digital-first is the way the world works. Digital opportunities explored in all business areas. Resources and data shared throughout the organization to drive innovation. Company culture encourages a forward-looking approach with flat governance for initiatives.

one of the largest gaps against global top performers was enterprise-wide communication of business and digital strategies.

Overall, the shift to a more collaborative business environment seems imminent. None of the organizations reported complete satisfaction with their competence creation initiatives, and nearly all saw external collaboration as a priority to some degree. This emphasis was most noticeable in the public sector, where all respondents invested in collaboration to a high degree.

Both the Digital IQ benchmark and interview results have made one thing clear: measuring the success and potential of digital development initiatives is not straightforward. This also proved to be one of the most dividing factors for the enterprise executives, with responses somewhat equally distributed from low to high degree. The approaches ranged from employing traditional KPIs to more innovative initiative-specific measures, and both were backed up by stories of successes and shortcomings. Most organizations

reported that they have success in engaging the correct key people in driving digital initiatives, but some often encounter resourcing bottlenecks -- especially in middle management, where the managers cannot find the time to introduce, drive and monitor the new initiatives properly on top of their other day-to-day responsibilities.

Throughout the interviewed organizations, experiences of getting the most from their own customer data are scattered – and there is a notable lack of great success stories. Shortcomings in data utilization seem to be a wider problem, as this was perhaps the most striking feature in the Digital IQ benchmark. In the discussions, this also arose as one of the areas focus will turn to in the short-term. With the modern availability of scalable feedback channels and the emphasis enterprises place on customer engagement, one would expect a higher rate for inviting their customers to participate and contribute to development initiatives. However, none report a very high degree of effort or success in co-creation initiatives.



All in all, how can businesses and public organizations become champions of the digital-first era? These five things just might be the key to success:

5 things you can do to succeed at digital transformation

- 1. Craft a clear strategic statement for your organization-wide digital approach, and clearly communicate at all levels.
- 2. Foster a culture that encourages innovative initiatives, especially in environments with ever-increasing speed and complexity.
- 3. Use all available data assets to efficiently deliver insights and value-add for the business.
- 4. Tailor a fit-for-purpose approach to engaging digital talent and external insights that discover, create and capture the value of digital opportunities.
- 5. Strive rigorously to define and deploy the KPIs that enable impact assessment for digital investments and efforts undertaken.

Contributors

Microsoft Finland has worked on this in-depth study to investigate how digital transformation affects Finnish companies and organizations. The study is based on Microsoft's unique approach to the subject and experience as a global leader helping companies drive digitalization worldwide.

By combining deep business and industry insight with digital innovation, PwC's diverse teams of creative, industry and technology professionals help accelerate the successful impact digital can have. We help create

integrated, end-to-end digital solutions from strategy and innovation through to execution to solve our clients' most complex business challenges. PwC Finland is part of the global PwC network. www.pwc.fi

The companies and organizations that took part in this study gave us an invaluable insight into the benefits of digital transformation. Microsoft and PwC Digital Services would like to thank everyone who got involved for their thoughts and their time.



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COO,
Microsoft Finland

Andreas leads Microsoft's digitalization strategy and implementation within the Finnish market.



Malathy Eskola

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Antti J Saarinen

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Antti is a seasoned digital transformation professional with dedication to help customers discover, create and capture business value through technology.



Jani Lukander

Data Scientist, PwC Digital Services

With a 10-year background in human and technology research, Jani is helping customers find ways to directly turn their data assets into business value.

