

# ACCENTURE TURKEY DIGITIZATION INDEX



**R**apidly evolving technology makes the generation of data faster and more accessible. We witness more and more companies from different industries transforming part of their businesses into digital businesses with the help of wider access to internet and an increase in data processing power. Today, we find ourselves in the middle of a great technological revolution, and digital is a part of the DNA of any institution.

The topic of digital transformation is at the center of Accenture's operations in Turkey and around the world. This index study reports on how much progress industry leaders have made towards digitization. After the positive reception of last year's Accenture Digitization Index, which was a first for Turkey, we are now pleased to unveil this updated second edition of this study, which was made possible through the cooperation of Boğaziçi University, Middle East Technical University, Turkish Informatics Foundation and Vodafone. We believe that this index will serve as a beacon for companies on their transformation journeys, and thus contribute to Turkey's economic growth.

Bringing together private sector and academic world, the Accenture Digitization Index study aims to present the digital profiles of companies and industries, while also evaluating to which extent companies digitize their strategies, customer facing services and internal operational capabilities. We prepared a report which is based on data and aim to convert quantitative data into useful insight, as we believe that these companies are among the most significant engines for change... And in order to grow and obtain a competitive advantage, they need to undergo a digital transformation.

In the Accenture Digitization Index study, companies which successfully integrate digitization into their corporate strategy and their main business objectives to reach competitive advantage; use digital products and services in interacting with their customers in a way that would provide the highest possible customer satisfaction; conduct communication, internal process and operations within the organization in the most efficient way via digital technologies, and are among the largest companies in Turkey in terms of revenue/assets, are defined as "Digitization Pioneers". In this sense, with a successful digitization process, the leading companies in Turkey can design new business models, gain competitive advantages, discover new growth areas, increase customer satisfaction, boost their service quality and grasp the opportunity to enter new markets. The opportunities that come with digitization can have a huge impact on the Turkish economy and thus strengthen the country's position in the global market.

When we look at the results of this year's Index in Turkey, we observe that the average score went up to 61% with an increase of 1% compared to last year in spite of the expansion in the criteria set. We would like to thank the participating companies which made this Index study possible, as well as Boğaziçi University and Middle East Technical University for their academic support, the Turkish Informatics Foundation for their industry support, and Vodafone, which has been making great contribution to Turkey's digital transformation.

#### **Dilnişin Bayel**

Country Managing Director  
Accenture Turkey

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**Engin Aksoy**  
Vodafone Turkey  
Enterprise Business Unit Director

## **RECIPE FOR A DIGITAL FUTURE: CREATE AN ‘ANYTIME ANYWHERE’ PARTNERSHIP EXPERIENCE FOR ENTERPRISES**

**T**he world is rapidly evolving towards a digital future; every object, individual, organisation, briefly, everything around us is becoming digitalized at a great speed. In order to address the key challenges ahead in an effective and sustainable way, we need to make sure that we make the most of the Fourth Industrial Revolution i.e. “Industry 4.0” brought by technological advancements radically altering the way we live, work, survive and interact. In tomorrow’s world where “Digital Transformation and Ground-breaking Technologies” become common in all parts of our lives, we will witness a parade of cutting edge technologies and scientific inventions. These technologies, which have the potential to disrupt the status quo, alter the ways in which people live and work, reform their value judgements and enable emergence of brand new products and services will make radical and lasting changes in our lives. Today, the greatest benefit technology offers is the new ways of doing business. Mastery of technology will bring along permanent changes, which will become “indispensable” for the organizations and cultures.

Supporting Turkey’s journey towards digitalization, Vodafone develops and implements ‘anytime anywhere’ end to end solutions. Acting as a “digital business partner” for enterprises, we are committed to make digitally connected life easy and accessible through bundled offers. To fulfil this commitment, we take a detailed picture of the current digital landscape in

Turkey. As we guide the organisations –both private corporations and public bodies- along their digitalization journey, we assess opportunities and risks to help them ensure business continuity. We developed the Ready Business Platform to map out the digital business landscape across Turkey and identify businesses’ needs for effective competition. Using this platform to measure enterprises’ digital maturity and to create digital roadmaps, we have calculated the Digital Index and identified the needs of 45.000 enterprises since July 2014. We increased the Digital Index of Turkish enterprises from 48% to 53%. However, we have a bigger ambition: we want to increase Turkey’s overall Digital Index to 75%.

In line with our vision for digitalization, we have been partnering with Accenture for the last 2 years and supporting the Accenture Digitization Index, which we believe has a pivotal role for end-to-end digital development of Turkey. This index offering significant insights into Turkey’s digital performance shows that digitization makes a positive impact on the profitability of businesses. A 10 point increase in Accenture Digitization Index corresponds to an average 1% increase in EBIT (Earnings Before Interest and Tax) margin. The index further reveals that businesses in Turkey mostly focus on digital operational capabilities and therefore, there are great opportunities in terms of digital services as well as demonstrating that businesses creating a digital ecosystem both gain capabilities required for digitization and draw maximum benefits from open innovation. These findings, among many others, reaffirm the importance of digitization for enterprises.

Although the majority of the companies participating in Accenture Digitization Index have managed to integrate digitization into their corporate strategies and created a roadmap for implementation of their digital strategies, the fact that only 55% of the businesses in Turkey feel fully ready for digitization shows that we still have a large room for progress. We therefore find this study’s recommendation very valuable which says: “Companies should build their strategy for their digital transformation journey, build the right foundations, differentiate themselves through digitization, monitor continuously their progress as well as collaborate and think on macro-level”.

Digitization will be the assurance of sustainability for businesses enabling economic and social development and promoting their presence and position in the market. From this point of view, Accenture Digitization Index fills a major gap in terms of digitization of enterprises in Turkey. We hope that the index inspires and leads the way for the businesses so that our country can achieve its well-deserved level of digitization.



**Faruk Eczacıbaşı**

Chairman, Turkish Informatics Foundation

**E**lectricity made it possible for us to move from Industry 1.0 to 2.0. After candles were used to generate light for hundreds of years, the idea to use gas for lighting emerged. However, this did not benefit industry. After electricity became a part of everyday life, the second era in industry commenced. In today's world, electricity is something as ordinary as air. We do not give a thought as to where it comes from or how it is generated, that is, until a power outage occurs. Similarly, digitization is an ordinary, indispensable element of Industry 4.0. Even now, the presence of internet is unnoticeable in advanced information societies. In the near future, digitization, like electricity, will be an element of which the source and the presence will not be questioned.

It is vital for public institutions to run faster in the digitization competition as much as it is true for private companies. This is because digitization enables economic growth and social development. In this race, the countries that fall behind have much greater trouble in addressing shortcomings as much as private companies in similar positions do.

As a monitor and interpreter of global trends, the Accenture Digitization Index has been mapping out the digitization status of Turkey since 2015, with contributions from Middle East Technical University (METU), Boğaziçi University and the Turkish Informatics Foundation (TIF). The 2016 Accenture Digitization Index is a report on the progress of the past year and Turkey's work towards becoming an effective and globally competitive economy. This alone is an added value of the Accenture Digitization Index. It also deserves to be acclaimed as a joint project prepared with the exemplary cooperation between university, private sector and non-governmental organizations.

As the Chairman of TIF, I am proud to be supporting such a source. It is my wish that the Accenture Digitization Index will also serve as a source to decision-makers at every level of the economy.



**Prof. Dr. Ayşegül Toker**

Dean, Faculty of Economics and Administrative Sciences

**T**he Accenture Digitization Index, and its outstanding conceptual design, measures the digital capabilities of companies using 119 indicators with 10 criteria for three main pillars of digitization. The comprehensive approach employed in this study not only produced a robust scoring scheme, but also resulted in detailed scorecards for participating companies. These scorecards pinpoint the strengths, weaknesses and areas to be improved upon in the digitization efforts of companies, and are a means of creating a roadmap that will support their digital transformation. Moreover, the Accenture Digitization Index reveals the practices of digitization pioneers and highlights critical success factors thus providing a guide for companies aiming to identify their priorities and strategies on their own digitization journeys.



**Prof. Dr. Murat Köksalan**

Chairman  
Industrial Engineering Department,  
Middle East Technical University

**M**asurement is in the core of diagnosis, evaluation, and improvement. Choosing criteria compatible with the main objectives, developing correct scales, determining criteria weights through a rigorous study of experts, and verifying the reliability of collected data are important issues in measurement. This study has scrutinized all these phases based on the scientific method to develop a digitization index and measure the scores of companies. The results provide important information to the companies regarding their overall statuses, strengths and weaknesses, and development directions in terms of digitization.

# EXECUTIVE SUMMARY

**W**hile digitization prompts both Turkish and other companies around the world to go beyond conventional ways of doing business, both the organizational structure and customer relations of companies are affected by this transformation. Digital transformation is creating a different business environment with new rules. Instead of forming an Information Technologies (IT) infrastructure that is not integrated, companies are using the opportunities brought on by digital technologies to use their resources to generate new revenue, growth and operational outputs that will add value.

The Accenture Digitization Index was developed to evaluate the status of Turkish economy's leading sectors on their digitization journey, to examine companies' digital capabilities, and to highlight their digital potential. This second edition of the Accenture Digitization Index uses evaluative data to measure to what extent companies' strategies, their customer services and their internal operations have been digitized; it also aims to help them apply the qualitative data towards solutions.

The Accenture Digitization Index's methodology, which was also applied in other countries, has been adapted to the Turkish market, thanks to the collaboration of Boğaziçi University, Middle East Technical University, the Turkish Informatics Foundation and Vodafone Turkey. The Accenture Digitization Index measures companies' digital capabilities across three main pillars: Digital Strategy; Digital Services; and Digital Enablement, along with 10 main criteria. Companies' digitization performances are measured by aggregating the results obtained from 119 indicators under these criteria.

Accenture Turkey invited 476 companies that met pre-defined financial criteria to participate in this study. From this list, 106 companies from various sectors agreed to participate in the Accenture Digitization Index. Our study shows that the average Accenture Digitization Index score in Turkey is 61%, based on a percentage scale between 0 and 100%.

Participating companies were evaluated in 18 industry clusters. Among the sectors that were present, the sector with the highest digitization performance was Financial Services, just as in 2015. Other highly performing industries were: Services, Retail, and Motor Vehicles Sales & Repair.

Based on our methodology, we can see that companies whose Accenture Digitization Index score is one standard deviation or more points above the average in Turkey (81% and higher) meet a great deal of what is necessary for a successful digital transformation journey. These companies are called "Digitization Pioneers". Among 106 participating companies, 23 scored a minimum of 81 percentage points, and thus earned the title of Digitization Pioneer. While providing recommendations to companies on how they can improve their digitization maturity, we have also found it necessary to highlight what constitutes a Digitization Pioneer.

During the course of creating the Accenture Digitization Index study, we also spotted a positive and statistically remarkable correlation between digitization and companies' profitability. Our analysis indicates that a 10% increase in a company's Accenture Digitization Index score corresponds on average to a 1% increase in their Earnings Before Interest and Tax (EBIT) margin.

Digitization also offers Turkish companies an opportunity not just for productivity and growth, but also for increased competitiveness, thus making an important contribution to the Turkish economy. Alongside detailed recommendations on what companies need to do in order to differentiate themselves through digitization, this study also shows companies what capabilities they need in order to maintain competitiveness during their digital transformation process. We believe that this study will be an important guide for Turkish companies on their digital transformation journey.



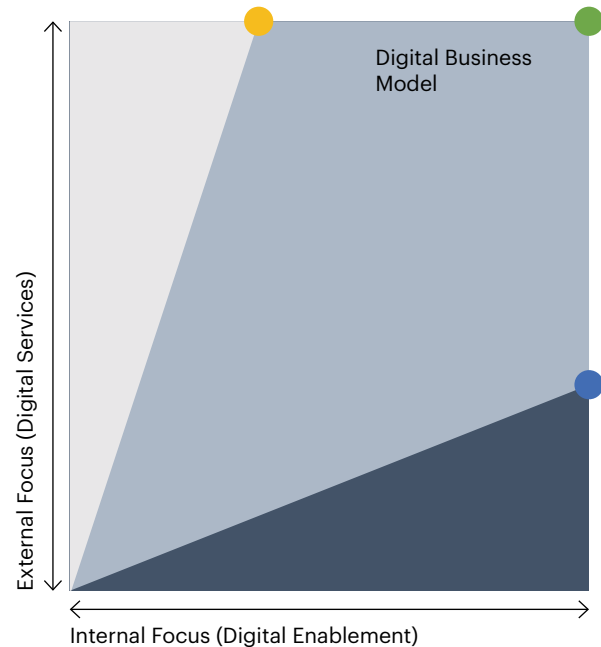
# **WHAT IS DIGITIZATION?**

## Digital transformation is transforming products, sectors and consumer expectations. Are Turkish companies ready to keep up with this transformation?

**A**s the technological revolution continues to occupy our attention, we see that we are now in the final phase of Industry 3.0, thus making it necessary to discuss the role digitization will play in the transition to Industry 4.0. This has become an obligation for companies and urges them to act.

Let us first take a short look at history. Up until the end of the 17th century, industry was powered solely by physical labor. Eventually, water, steam and machine power emerged, resulting in an unprecedented increase in the volume of production and thus constituted the first era of the Industrial Revolution. Just before the 20th century began, the invention of electricity enabled mass production. This was followed by another leap with the emergence of Information Technologies (IT), otherwise known as digitization, which brought automation in production systems in the second half of the 1900's<sup>1</sup>. Cyber physical systems are accepted as the fourth phase of the industrial revolution. Although some steps are being taken towards the transition to cyber physical systems, systems which link the physical world to virtual IT systems with the help of sensors, we have not yet fully completed the third industrial revolution.

We can define the digitization concept, which the revolution we are studying has been named after, as follows: Digitization is the process of shifting a company's resources into new sources of revenue, growth and other operational results that add value to the company by leveraging opportunities offered by digital technologies. In other words, digitization means developing new business models, creating unique customer experiences, building new products and services and utilizing a company's resources much more efficiently through new combinations of information, human capital and technological assets. Leaders who aim to gain a competitive advantage have placed the concept of digitization at the center and differentiate their respective companies with internal (Digital Enablement) and customer facing (Digital Services) digitization practices and corporate strategy activities. The preliminary condition for companies not to fall behind in this competition is the utilization of balanced digitization in all of these different areas, and the formation of corporate structures which enable them to make the most of new digital business models (Figure 1).



### Digital Services

Digitization of product/service portfolio, marketing, sales and after-sales channels

### Digitally Transformed Company

Companies which have completed their transformation in Digital Services and Digital Enablement areas, and have designed their corporate structures in order to achieve the maximum benefit from digital business models

### Digital Enablement

Digitization of a company's internal operations and processes

**Figure 1: Balanced internal and external digitization of a company**

# WHY IS DIGITIZATION IMPORTANT FOR BUSINESSES?

**Digitization is transforming organizations and customers as well as the relationship between them.**

**G**one are the days when companies were only offering their customers products and services. What matters now is the collaboration with customers. Today's customers have become stakeholders with whom companies collaborate. This revolutionary change in the relationship between customers and companies stems from a great transformation that both entities have experienced themselves. While digitization is changing organizational structures and their ways of doing business, it also rapidly changes customer expectations, demands and their consumption behaviour.

Digitization is overhauling sectors' existing structures by bringing together organizations, representing the supply side, and the customers, who create the demand, and making them one entity. With the opportunities that digitization offers, users, products and services and the data generated from the use of these are becoming more interrelated. While it creates new ways of consuming products and services, digitization also facilitates the interaction between enterprises and individuals.

Customers, on the demand side, would like to have a voice when it comes to the products and services they buy, and seem willing to use every tool at their disposal to that end. Those who use a 3D printer for a couch they would like to have, those who contact the designer via social media for a pair of pants they would like to buy, and those who use crowd-sourcing sites in order to lobby an airline to provide more gates have gone beyond conventional models. Companies aware of this reality are making digitization a part of their corporate culture.

**Digitization converts the relationship between customers and organizations into a new form based on data and democratizes it.**

**Digitization removes the boundaries between products and services from different industries and creates entirely new collaboration models.**

They meet their customers on various platforms thereby increasing their loyalty and satisfaction.

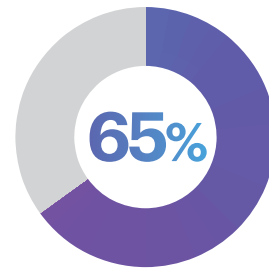
In a similar manner, the value chain undergoes a remarkable change in the face of digitization. Companies intending to offer more sophisticated features and thus a richer customer experience, are engaging in new collaboration models with other companies from different industries and are using various platforms. Thus, digitization becomes a catalyst for new collaborations. Digitization blurs the boundaries between products, by removing the notion of using different products for different purposes. Digitization has the same impact on companies and industries as well. According to a research conducted by Accenture with 2,000 senior executives from nine countries, 81% of them believed that borders between different industries will disappear as a result of the fact that the platforms transform industries into interconnected ecosystems<sup>2</sup>. Companies can see an increase in their effectiveness as they continue to use digital technologies. More visionary companies realize that all businesses are being digitized and are developing a collaborative working culture and thus choose to engage in a greater transformative process. When this collaboration is shaped properly, it has the potential of generating a much wider gain than ever before.



# CONCRETE PROOF OF DIGITAL DISRUPTION: MACROECONOMIC EFFECTS OF DIGITIZATION

**T**he “digital economy” indicates the share of numerous digital inputs in the total economic output. These inputs are composed of digital capabilities, digital equipment (hardware, software and communication devices) and intermediate digital products and services.

Statistics show that only 15% of the world economy was digital in 2005. This rate climbed to 22% in 2015. In 2020, it is expected that the digital economy will constitute 25% of the global economy<sup>3</sup>. Similarly, digitization has been playing a role in the structural transformation of employment. For example, studies show that in the United States, 5.8 million people lost their jobs between 2000 and 2008, and that 80% of this loss stems from the direct or indirect effects of technology and digitization.<sup>4</sup> Based on this information, one should certainly not conclude that digitization reduces employment. The nature of employment changes with digitization. The Digital Economy Report, published by OECD in June 2016, suggests that 65% of today’s children will start working in jobs that have not yet been discovered<sup>5</sup>. According to the results of 2016 Tech Nation study conducted in the U.K., the digital industry created around 1.5 million new jobs in the country, and 41% of those appeared in conventional sectors<sup>6</sup>. This striking figure provides a highly important clue about how digital technologies transform existing conventional economies.



**The characteristics of employment changes with digitization. 65% of today’s children will work in jobs that have not yet been discovered.**



# **ACCENTURE DIGITIZATION INDEX**

## WHAT IS THE ACCENTURE DIGITIZATION INDEX?

**A**ccenture developed an indexing methodology (Accenture Digitization Index) to identify where companies stand on their digital transformation journey, analyze their digital capabilities and reveal their digital potential. The Accenture Digitization Index was initially conducted in Germany and eventually was applied to other countries such as Switzerland, Australia, Netherlands and Austria. Accenture Turkey took the indexing study one step further through one-on-one interviews with each participating company, thus making it more than only desk research.

In 2016, the Accenture Digitization Index study has been published second time in Turkey. The study measures to what extent companies' strategies, their customer facing services and their internal operations have been digitized, and turns quantitative data into useful insights.

While the Accenture Digitization Index provides an opportunity for the executives of Turkish companies to measure the digital maturity of their companies, it is also a reference as it measures digitization progress in the top industries of Turkish economy.

This study provides an examination of Turkey's "digitization maturity" via the results of a comprehensive survey conducted with the executives of 106 companies operating in Turkey. It gives recommendations by identifying the improvement areas based on the indicators which determine the level of maturity.

**For the Accenture Digitization Index study, Accenture Turkey conducted one-on-one interviews with the executives of 106 companies and produced a research report which will serve as a guide and provide insights on Turkey's digital transformation journey.**

## METHODOLOGY

The Accenture Digitization Index examines companies' level of digitization in three main categories: Digital Strategy, Digital Services and Digital Enablement (Figure 2). An assessment based on these three dimensions and their 10 main underlying criteria reveal a snapshot of a company's "digital maturity."

**Digital Strategy:** This dimension shows to what extent digitization is integrated into a company's strategy towards achieving its objectives and goals.

**Digital Services:** This dimension assesses a company's products, solutions and services as well as the associated functions. The extent to which companies have digitized their interactions with their customers before, during and after the sales also contributes to the assessment.

**Digital Enablement:** Digital Enablement considers the use of digital technologies and applications as well as governance structures to support organizational workflow, internal processes and operations.

In order to calculate the Accenture Digitization Index score of a company, we used a hierarchical scoring system. A weight has been assigned to each of the 10 criteria underlying the three above mentioned dimensions. The weight reflects the importance of the respective criterion in the Accenture Digitization Index score. Companies' digitization performances were measured by aggregating the results from 119 indicators under these 10 criteria. The weights of these 119 indicators were also determined based on their respective importance within each criterion.

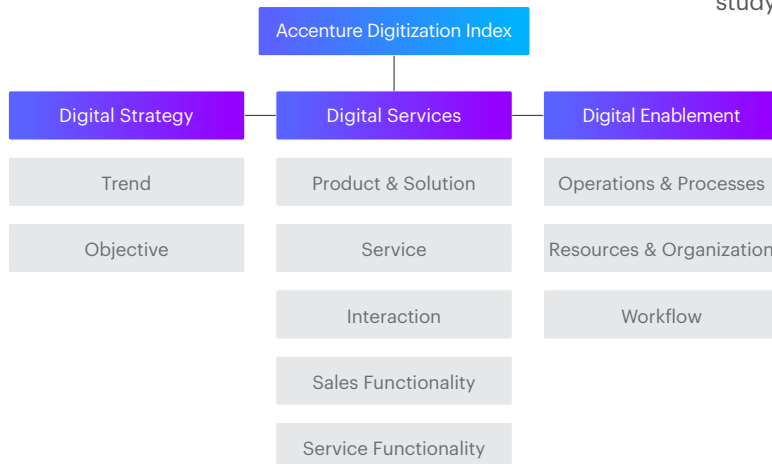


Figure 2: Components of the Accenture Digitization Index

## PARTICIPATION CRITERIA

Accenture invited around 450 companies in Turkey to participate in this study which fulfilled in 2014 one of the criteria below:

- Companies with an annual revenue of at least 500 million TRY
- Public and private banks with consolidated assets of at least 30 billion TRY
- Non-life insurance companies generating at least 500 million TRY in annual premiums
- Life insurance companies generating at least 100 million TRY in annual premiums
- Investment banks and companies with a total transaction volume of at least 70 billion TRY

106 companies which met these criteria accepted to participate in the Accenture Digitization Index study. To collect data on the 119 digitization indicators mentioned above, face-to-face interviews were conducted with companies' leaders working in IT and digital domains. The information obtained from these interviews was complemented by data collected from publicly available sources such as companies' websites, annual reports, investor relations documents, company communications, presentations and news.

Based on the findings from this study, the Accenture Digitization Index scores were calculated on a percentage scale (0-100) by using the weighted averages of the 119 indicators. Further information on the methodology utilized for this study can be found in the Appendix section.

# ACCENTURE DIGITIZATION INDEX STUDY RESULTS

**O**ur analysis shows that the average Accenture Digitization Index score from the 106 participating companies in Turkey is 61% (Figure 3). Although some industries are not expected to digitalize at the rate that other industries will, this overall score of 61% indicates that there is still room for improvement in digitization in Turkey.

The slight difference between last year's average score (60%) and this year's (61%) does not mean that companies have not made progress in digitization area. Two important elements should be taken into consideration while comparing this year's average score to last year's. First, as a result of developments in the digital world, the indicators we used this year have undergone some modifications, and some additional indicators that did not appear in last year's index were used. There is also a difference in the list of participating companies from both years. Of the 106 companies that participated in this year's study, 54 also appeared in last year's Accenture Digitization Index. The average score of these 54 companies surveyed last year was 67%; if these companies had been subjected to the same indicators that were used last year, their average would have been 71% this year; however, their score drops to 69% when calculated with this year's indicators. This shows that even though companies made significant progress in digitization, they need to sustain their efforts in digital transformation, as advancements in the digital world continue to take place.

As expected, we have identified significant differences between the average scores of assessed industries. These differences can be partly attributed to the variations between the digitization needs of different sectors. However, in some cases, some significant differences were also observed between direct competitors in the same industry.

## Average Accenture Digitization Index Score

	2015	2016
Number of Participated Companies	104	106
Number of Indicators Used in the Study	91	119

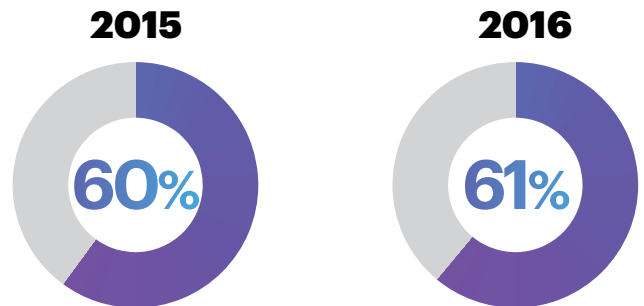


Figure 3: Accenture Digitization Index scores of Turkish companies in 2015 and 2016

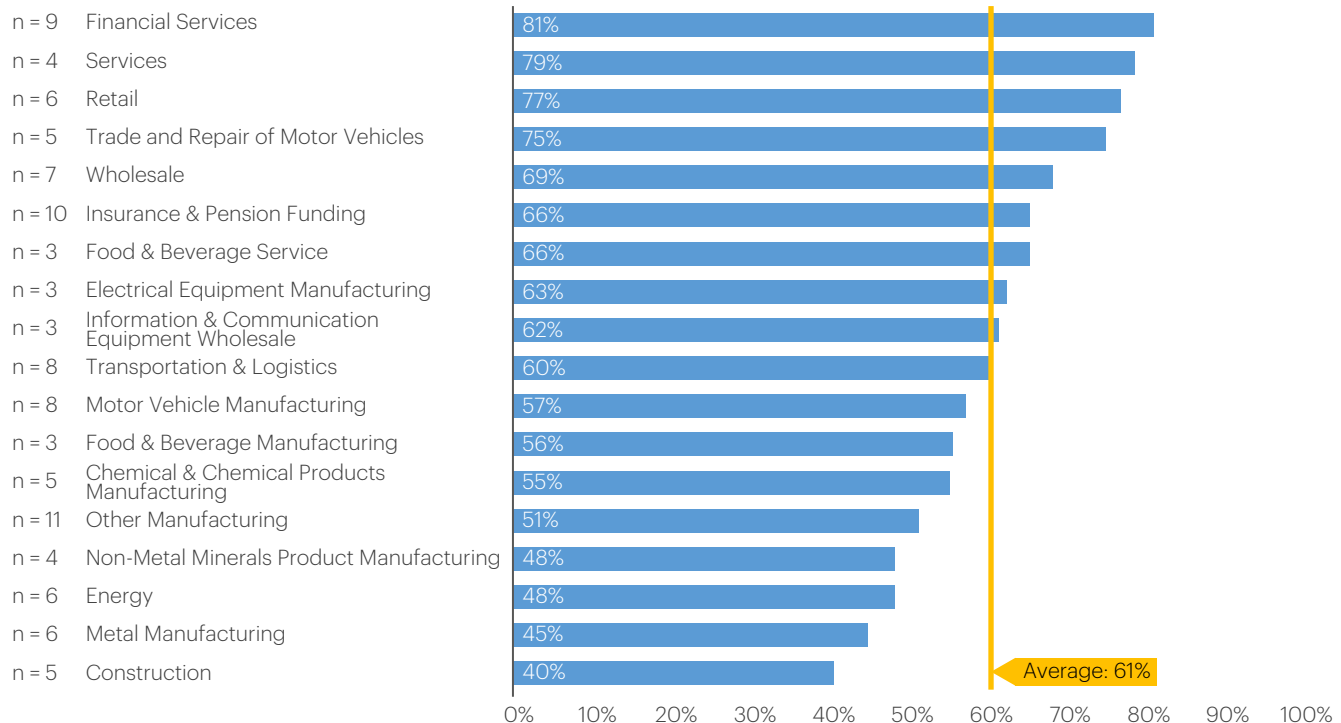
# INDUSTRY SCORES

The companies that participated in the Accenture Digitization Index study were grouped into industry clusters based on NACE, the European Union’s classification of economic activities. Participating companies were evaluated across 18 industry clusters. Among these, Financial Services, Services, Retail and the Trade & Repair of Motor Vehicles industries turned out the best performers with regard to digitization (Figure 4). These scores show that, since the previous Accenture Digitization Index study, the industries that performed the best have remained the same.

It can be concluded from the study that not only do the digitization performances of different industry clusters vary, but digitization capabilities of companies from the same industry cluster can differ from each other as well. One reason is that all companies in the same industry cluster are not necessarily direct competitors with each other and that some of them operate in complementary fields. For instance, the Financial

Services cluster includes both banks and investment firms. Due to nature of their work, the digital maturities of these companies are at different levels. Banks score at the upper end of the industry cluster while the investment firms scored lower than the average of the Financial Services industry as a whole. Similar observations can be made in other industry clusters, and this explains partially the variations within an industry cluster.

**Aligned with last year’s results, Financial Services, Services, Retail and the Trade & Repair of Motor Vehicles industries turned out the best performers with regard to digitization among 18 industry clusters**



n= Number of Companies in the Industry  
 Companies were clustered in high-level industry groups based on classification of economic activities in the European community (NACE Rev. 2)

**Figure 4: Accenture Digitization Index Scores across Industries**

We however found differences between direct competitors within an industry cluster as well. For example, one of two direct competitors scored 93% and ranked as one of the leading companies in that industry cluster, while its direct competitor scored 68%. We can see that although these companies operate in the same industry, one is positioned at a much higher level in its digital transformation journey, while its competitor lags behind significantly. The score difference between these two direct competitors is one indicator as to which company will be more likely to gain a competitive advantage over its peers.

The Accenture Digitization Index study results show that Turkish companies are more successful in the Digital Enablement dimension, compared to their performances in the Digital Services dimension (Figure 5). The average score of companies in the Digital Services dimension is 52%, while the average score in Digital Enablement is 69%, indicating that companies have focused predominantly on the digitization of their internal operations and processes and less on digitization of their customer facing capabilities. Global studies conducted by Accenture

shows that findings in Turkey is consistent globally. According to the results of an Accenture survey of 1,000 C-suite executives from 20 countries and 12 industries, 58% of executives use digital technology primarily to improve process efficiencies and reduce costs, while less than one-third use these technologies primarily to drive growth and reach new customers.<sup>7</sup> This is mainly due to the fact that most executives reap the results more quickly from the digitization of internal operations and processes while they are more prudent and risk-averse when it comes to the use of customer facing digital technologies.

## In parallel to global trends, Turkish companies display a better performance in Digital Enablement when compared to Digital Services.

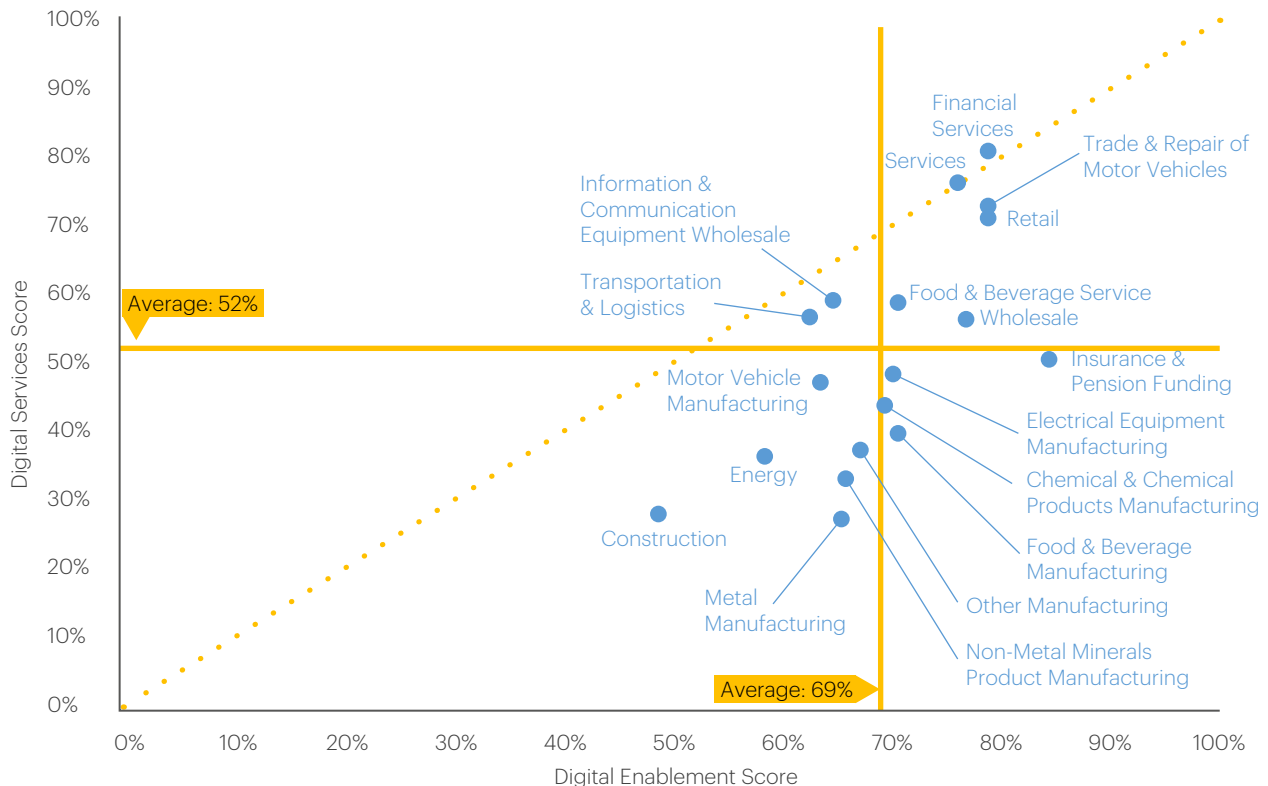


Figure 5: Digital Services vs. Digital Enablement Scores across Industries

# EFFECTS OF DIGITIZATION ON FINANCIAL PERFORMANCE

**A**s in the 2015 study, after calculating the Accenture Digitization Index scores, we wanted to test the hypothesis that the higher the digital maturity of a company, as measured by Accenture Digitization Index, the better that company's profitability performance will be.

According to this hypothesis, digitization leads to an increase in the productivity and efficiency and thus enables companies to operate at lower costs and reach a higher profit margin. In order to test this hypothesis, regression analysis was used to determine the relationship between different parameters, using a sample of 38 companies for which we could find EBIT (Earnings before Interest and Tax) margin values from publicly available sources.

Similar to our findings from last year, the results of the analysis suggest a relationship between a company's Accenture Digitization Index score and its EBIT margin, and indicate a 10-point increase in the Accenture Digitization Index score (out of a maximum of 100 points) can be associated on average with a 1% additional EBIT margin for a company. This analysis indicates a positive and statistically significant relationship between the Accenture Digitization Index and the profitability of a company (see the Regression Analysis section in the Appendix for more details).

This finding highlights the fact that digitization is also important from a financial perspective. For example, a company whose annual revenue is 1 billion TRY is expected to generate on average an additional annual EBIT amount of 10 million TRY compared to its peers, whose Accenture Digitization Index score is 10 points lower.



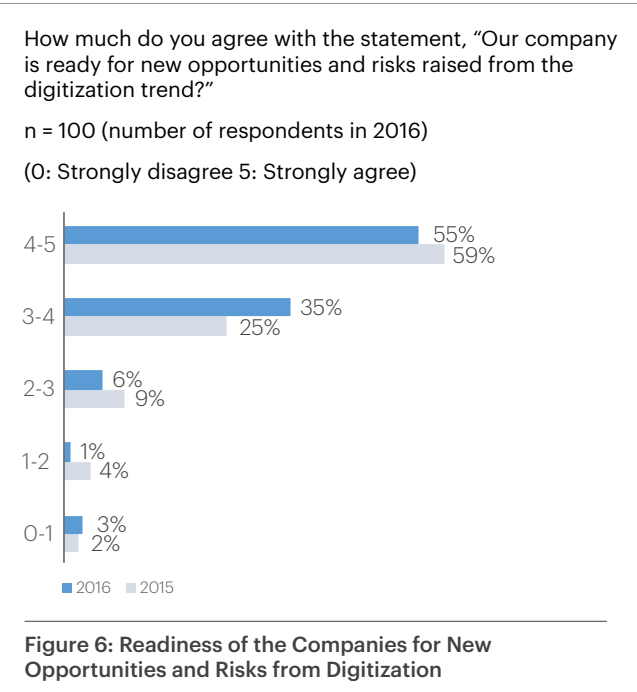
**Our study shows that a 10-point increase in the Accenture Digitization Index score can be associated on average with a 1% additional EBIT margin for a company.**



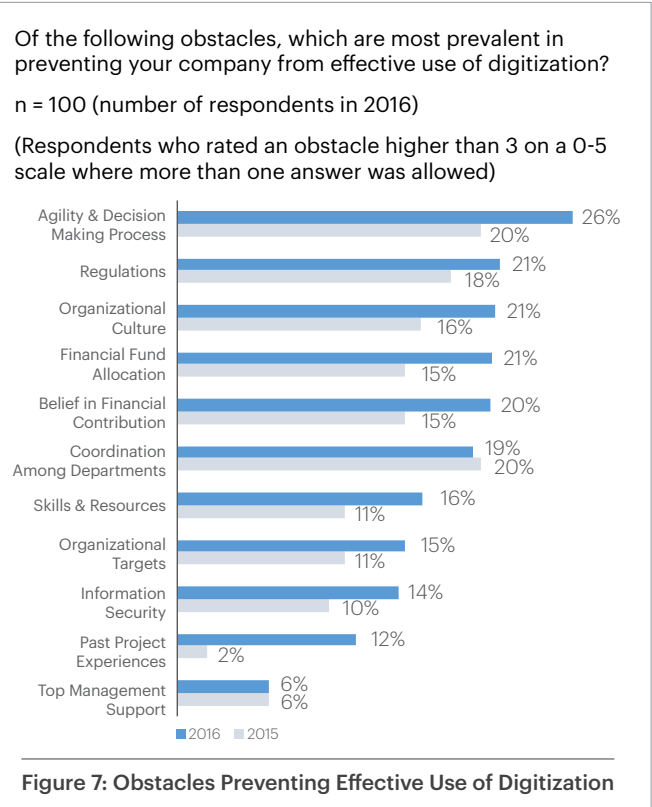
# CHALLENGES DURING THE DIGITIZATION PROCESS

**A**lthough digitization is inevitable, it is not an easy process. First of all, it requires the awareness that digitization is more than implementing the technology and necessitates a deeper transformation that resonates with the whole organization and should be ingrained into a company's culture.

As in the 2015 study, in order to understand the level of readiness of Turkish companies for digital transformation, interviewees were asked to rate their companies' readiness. According to the results, only 55% of Turkish companies felt completely ready for the digitization process by indicating a score of 4 or higher on a scale from 0 (strongly disagree) to 5 (strongly agree) that their company is ready for new opportunities and the risks from the digitization trend (Figure 6).



When we examine the challenges Turkish companies face in the digitization process, the interviewees ranked the issues of agile decision making, regulations, organizational culture and financial fund allocation at the top of their lists (Figure 7). In addition, we observed that companies in particular assessed the lack of talent and resources as a more significant obstacle as compared to the previous year. Nevertheless, this issue is globally considered to be one of the main obstacles in front of digitization like in Turkey. Although the digital natives have joined the workforce, studies show that a lack of skilled workers that can help implement digital transformation is at a critically low level, and approximately 40% of global companies are having trouble finding suitable talent to employ in this field.<sup>15</sup>





**Of the 106 total  
companies in this year's  
study, 23 achieved a  
score equal to or higher  
than 81%, earning them  
the title of Digitization  
Pioneer.**

# DIGITIZATION PIONEERS AND THEIR CHARACTERISTICS

**C**ompanies with an Accenture Digitization Index score of 81% or more (a standard deviation on top of Turkey's average score of 61%) met a significant number of requirements for a successful digital transformation journey and have thus been deemed a Digitization Pioneer. Of the 106 total companies in this year's study, 23 achieved a score equal to or higher than 81%.

Many Digitization Pioneers were identified from the Financial Services and Retail industries. Yet, the appearance of companies from various industries on the Digitization Pioneers list demonstrates that companies, irrespective of their industries, have the potential to reach higher levels of digital maturity. Therefore, while giving recommendations to Turkish companies to increase their digital maturity, we highlighted the areas in which Digitization Pioneers stand out compared to other companies.

The Accenture Digitization Index elaborates on factors that are needed to be successful in the digital transformation process, and illuminate the primary differences between Digitization Pioneers and other companies.

According to the Accenture Digitization Index, the key characteristic of a Digitization Pioneer is their awareness of the necessity to keep up with digital transformation, given the developments in the digital world. Digitization Pioneers are aware that digitization is not a choice, but an action that must be taken, and as soon as possible, to maintain their competitiveness. This is reflected in their strategic plans, operations and customer relations.

In order to highlight common characteristics of Digitization Pioneers, we conducted our analysis across three dimensions in the Accenture Digitization Index.

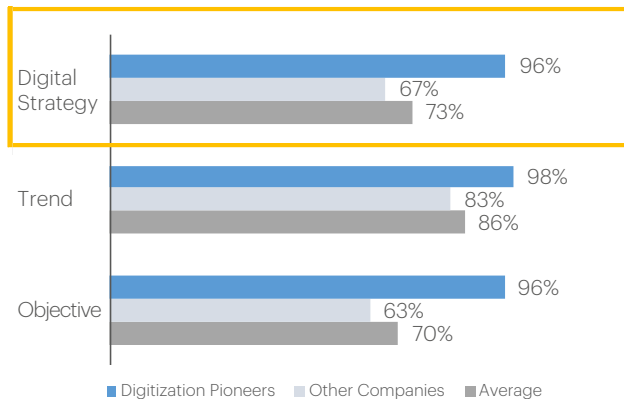
# DIGITAL STRATEGY

## The Digital Strategy dimension shows to what extent digitization is integrated into a company's strategy towards achieving its objectives and goals.

In a world where the digital economy constitutes one-fourth of the global economy, the success of a company will rely on a digital strategy that will accelerate adaptation to digitization and increase their competitiveness. In order to assess a company's Digital Strategy score, the Accenture Digitization Index focuses on two criteria with 11 underlying indicators:

<b>Trend</b>	Refers to what extent a company's strategy reflects digitization as a relevant industry trend and how it prioritizes digitization.
<b>Objective</b>	Refers to what extent a company's strategic objectives reflect digitization.

When the performance of Turkish companies in the Digital Strategy dimension is examined, we observe that many companies prioritize digitization, which is then reflected in that company's objectives. (Figure 8)



**Figure 8: Digitization Pioneers' and Other Companies' Digital Strategy Performance**

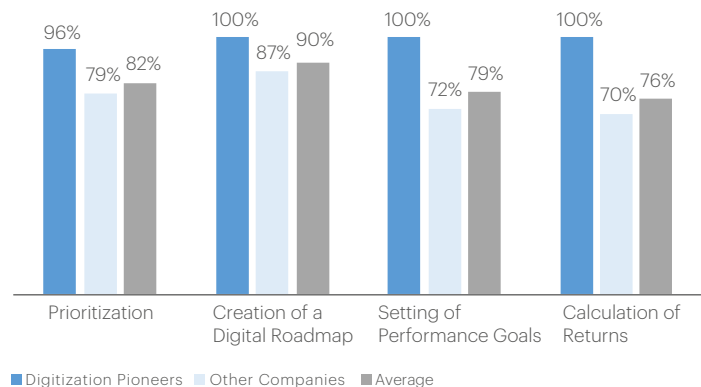
Under Digital Strategy dimension, the digitization maturity of companies is based on a couple of key indicators. These indicators, which constitute the essential elements of Digital Strategy, are as follows:

**Prioritization:** means that the digitization concept is considered to be one of the most essential components of a company's corporate strategy. Companies should regard digitization as a primary objective, and secure the commitment and support of top management to that effect.

**Creation of a roadmap:** refers to the planning of the implementation of a digital strategy, and its relation to the overall corporate strategy. During this phase, necessary initiatives and steps, allocated budgets and required changes should be planned in detail and the timing and duration of each project should be clarified.

**Setting of performance goals:** refers to performance tracking of projects and initiatives developed within the scope of digital strategy. By assessing the progress of projects against the plan, their completion within the allotted period and their achievement towards set goals, companies should set performance objectives for departments and employees.

**Calculation of returns:** The correct calculation of returns for the projects and investments, which were made within the scope of their digital strategy, is vital in order to assess the success of the digitization journey.

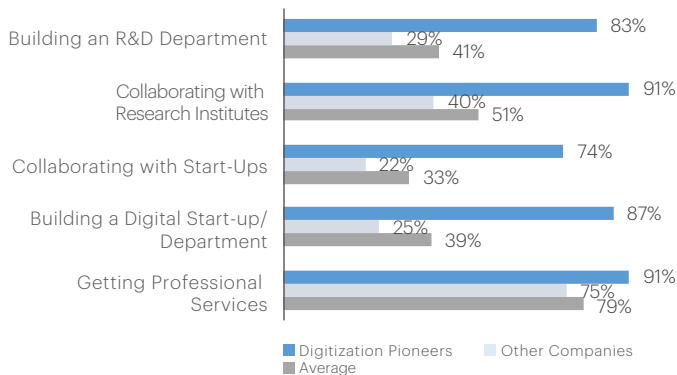


**Figure 9: Major Strategy Actions Taken towards Digitization**

According to the Accenture Digitization Index, most Digitization Pioneers in Turkey have managed to integrate digitization into their corporate strategy and all of them have created a roadmap for the execution of their digital strategy. Although the creation of a roadmap is an area where other companies have performed well in the digital strategy dimension, it has been observed

that these companies lag behind in setting performance goals and calculation of returns when compared to the Digitization Pioneers. Yet, the correct calculation of returns obtained from a company's investments and an evaluation of the teams working towards that purpose based on this calculation are very important in order to identify which digital action contributes more to productivity and profitability (Figure 9).

**Most companies that participated in our study have integrated digitization into their corporate strategies and have created a roadmap for the execution of their respective digital strategies. However, in terms of setting performance goals for digitization initiatives and calculating their returns, Digitization Pioneers stand out compared to other companies.**



**Figure 10: Strategic Actions taken to Support Digitization**

In order to promote digitization, companies may set up new departments within the company or hire external professional support. As can be seen in Figure 10, Digitization Pioneers stand out from the other companies with regard to this. Digitization Pioneers have implemented changes in

the organizational structure, such as creating R&D departments, in order to keep up with digitization, as well as have created a digital ecosystem by collaborating with various stakeholders such as research institutions and start-ups. In this way, they acquire new capabilities required for digitization, and also take full advantage of open innovation.

An initiative taken by a prominent Turkish bank may set an example for offering customers new services and experiences by creating an ecosystem. In order to rectify issues that customers may experience during online shopping with e-commerce companies, the bank-in-question has developed a platform that integrates technology start-ups in finance industry into its ecosystem. Thanks to this service, for the first time in Turkey, money transfers for payments/transactions for e-commerce, online gambling, ticketing, city-card or other pre-paid card applications could be made instantaneously, securely and smoothly via consumers' bank accounts without sharing their card information. This also enabled customers who do not hold a credit card or those who do not wish to share their card information, to shop or conduct transactions securely. Moreover, customer satisfaction has increased through a better shopping and transaction experience.

Digitization Pioneers also establish dedicated project based departments/teams working on this subject and are actively fostering innovation in their organizations.

Samsung, one of the global technology companies, has developed a program, C-Lab, where employees are invited to compete against each other to submit great ideas. C-Lab is a platform on which innovative ideas are discussed and evaluated. The winner of this competition is awarded a one-year-leave in order to execute the idea, and is given a small team to help realize the idea. This program has enabled the company to develop a new generation of products such as a refrigerator that sends an SMS if the door is left open, or a washing machine that operates when the electricity rate is at its cheapest.

**Creating a digital ecosystem helps companies gain the capabilities necessary for digitization and reap the full benefits from open innovation.**

## DIGITAL SERVICES

The Digital Services dimension assesses the digitization of a companies' products, solutions and services as well as the associated functions. The extent to which companies digitize their interactions with their customers before, during and after the sales also contributes to this assessment.

Unlike conventional customer relations, customer relations in the digital world is not solely limited to the moment when goods or services are purchased, and it continues to exist in a more comprehensive way. In this continuous and mutual relationship, the efficient way of meeting customer needs depends on the actions taken in the Digital Services dimension.

The Accenture Digitization Index focuses on five criteria that covers 58 indicators in the Digital Services dimension to evaluate companies' maturity.

Product & Solution	Extent to which the company offers digitized products and solutions as well as tracks and analyzes customer behaviors through data generated by these products & solutions
Service	Capabilities in offering digital services
Interaction	Capability of the company to use digitization in its interaction with the customers
Sales Functionality	Extent to which the company offers customer-facing sales/order-specific digital functionalities
Service Functionality	Extent to which the company offers digital functionalities that are specific to after-sales services

When we examine the performances of Turkish companies in the Digital Services category, we see that Digitization Pioneers, with an average score of 88% (Figure 11), are highly successful in this area. When three dimensions that constitute the Accenture Digitization Index are taken into consideration, it appears that the greatest gap between the Digitization Pioneers and other companies is in Digital Services.

When three dimensions constituting the Accenture Digitization Index are examined, the greatest gap between the Digital Pioneers and other companies appears to be in the Digital Services dimension.

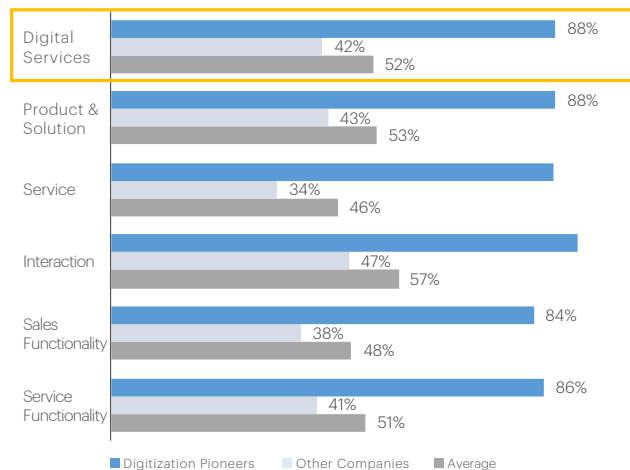


Figure 11: Digitization Pioneers' and Other Companies' Digital Services Performance

The five criteria that constitute the Digital Services dimension, Product & Solution, Service, Interaction, Sales Functionality and Service Functionality represent the customer-facing capabilities of a company. The digitization steps in this regard ensure a better customer experience and improves areas where customer interactions occur. Therefore, all these should be addressed within the customer lifecycle stages.

## DIGITIZATION IN THE STAGES OF THE CUSTOMER LIFECYCLE

In order to better analyze the impact of Digital Services capabilities, we examined the customer lifecycle in four stages and identified where Digitization Pioneers stand out from the other companies. To best examine these four stages, we mapped the suitable indicators of the study to the relevant customer lifecycle stage. Since some indicators concern more than one stage, these were evaluated more than once when it was necessary. In this regard, we examined 38 indicators at the Information/Attraction stage; 15 indicators at the Sales/ Shipment stage; 6 indicators in the Usage stage and finally, 24 indicators in the After-Sales Services stage. As a result, when the highest scoring companies in Digital Services dimension were examined, it was observed that these companies are also the ones which offer the best experiences to the customer throughout the entire customer lifecycle.

**The key to the success of companies in the Digital Services dimension is how they build their Digital Services in a way that offers the best experiences throughout the customer lifecycle stages.**

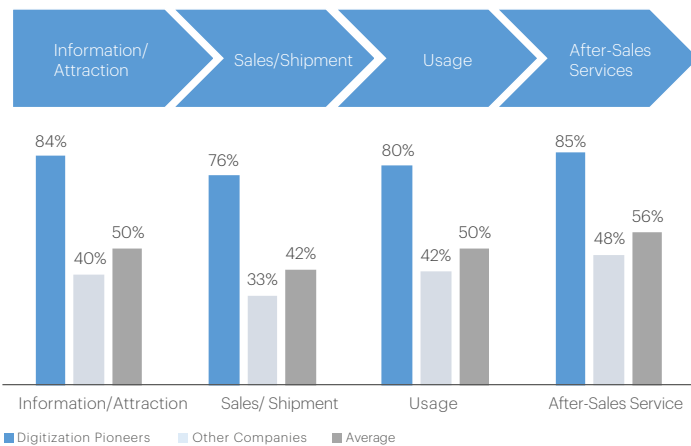


Figure 12: Digitization in the Customer Lifecycle Stages

## ► INFORMATION/ATTRACTION

This refers to the stage when companies promote their products and services through various digital capabilities. A nearby restaurant that extends a real-time offer to a potential customer by using cell phone location data is a good example of this. Tracking customers’ behaviors on the internet and taking relevant actions is another example of this.

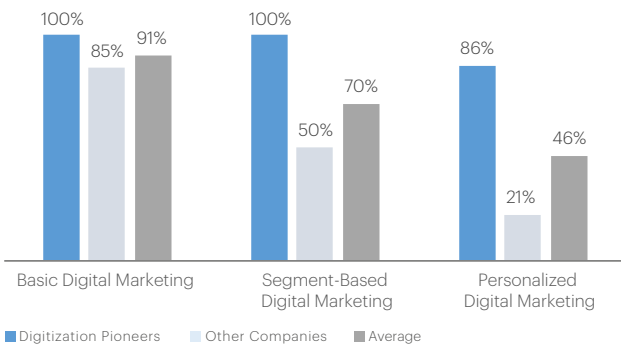
An automotive company that participated in our study launched a project entitled Mobile CRM and Lead Management after identifying a loss in sales that was due to a lack of a more rapid response to inquiries coming from digital channels such as the dealer’s website or social networks. With this project, the company integrated the leads from digital channels into its sales processes and ensured easy management of various pre-sales and after-sales activities such as test drives, follow-up calls and offer development. After launching this project, the sales conversion rate of sales leads coming from digital channels, increased by around 60%.

The case of the aforementioned Turkish automotive company demonstrates the direct impact of digital capabilities on attracting customers and turning opportunities into sales. Although the numbers are striking, for many Turkish companies, there is still room for improvement in making use of digital capabilities at this stage. The average digitization score of Turkish companies in the Information/Attraction stage is 50% (Figure 12). With a score of 84%, it seems that Digitization Pioneers are much more successful in attracting customers by making better use of digital capabilities.

When we examine digital marketing, an important topic in attracting customers, more closely, we face a similar situation.

## ▶▶ DIGITAL MARKETING

**M**arketing tools and channels are changing together with digitization. Companies' ability to know their customers and influence customer attitudes is becoming more important than ever. In an era when more than 60% of Turkey's population has access to the internet, online experiences are among the top factors which influence customer decisions.<sup>8</sup> A research published by AdAge shows that the impact of social media on customers' purchasing decisions can be as high as television commercials.<sup>9</sup>

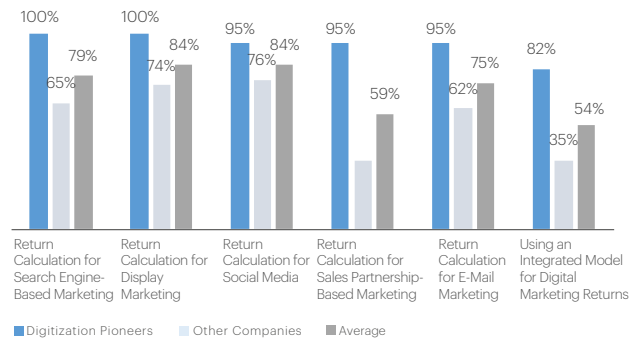


**Figure 13: Companies' Digital Marketing Capabilities\***

\*Based on data for 56 companies that are in direct interaction with their end-users

When Turkish companies' digital marketing performance is examined, it becomes clear that the gap between Digitization Pioneers and other companies is widening with respect to segment-based digital marketing, even though the use of basic digital marketing capabilities is more widespread. When it comes to personalized digital marketing capability, a relative decrease in the score of Digitization Pioneers appears. However, only 21% of the other companies (Figure 13) have personalized digital marketing capabilities.

In order for companies to increase their competitiveness in digital world, they need to go beyond basic digital marketing tools. In this regard, they need to propose different offers to different customer groups through customer segmentation, and develop more customized content, product and service offers. To achieve this, essential digital-era tools such as digital channel analytics, CRM and campaign management as well as more effective use of digital marketing channels (search engine marketing [SEM], social media and display) and content management must be employed.



**Figure 14: Companies' Capabilities for the Calculation of Returns and Optimization in Digital Marketing Channels\***

\*Based on data for 56 companies that are in direct interaction with their end-users

Channel-based evaluation of the returns of digital marketing investments and digital marketing expenditure optimization through aggregating all channels' data under an integrated model play a crucial role in the effective use of marketing budgets. Although a large proportion of Digitization Pioneers take measurements on digital marketing on individual channels, the proportion of companies which are optimizing these expenditures on an integrated model is low. When it comes to other companies, they lag considerably behind in terms of digital marketing return calculations and expenditure optimization (Figure 14). Companies that improve their digital marketing skills can achieve significant benefits in this area. All studies show that companies, which track the online journeys of their customers by using various digital marketing channels and redesign their digital marketing campaigns based on this data, can experience a remarkable increase in their profitability.

**Channel-based evaluation of the returns of digital marketing investments and digital marketing expenditure optimization through aggregating all channels' data under an integrated model play a crucial role in the effective use of marketing budgets**



Fairmont Raffles Hotels, an international hotel chain, benefited from the use of Google Analytics in tracking the digital behavior of Swissotel customers in England and measuring the performance of their digital marketing investments. Primary analysis showed that customers in England spent twice as much on online transactions, when compared to those in Australia and the US, but the number of English users who visited the company's website was quite low. After redesigning its digital marketing strategy based on these insights, the hotel chain not only doubled the number of reservations via the website, but also increased its revenue by 70%.

### ► SALES / SHIPMENT

This refers to the use of digital channels and capabilities in the purchasing and product shipment stage. Alongside basic digital capabilities such as companies' ability to sell via digital channels, the ability for customers to order via a digital channel and collect from a physical channel ("click and collect"), the capability to query the status of product shipment through various channels, more advanced digital technologies such as virtual reality (VR) may have an impact on customers' purchasing decisions in the purchasing / product shipment stage.

Virtual reality, which up until recently was only used for military flight simulations, has gained momentum since customer-oriented virtual reality products were launched in 2016 by prominent technology companies such as Sony, Oculus, HTC and Samsung. Virtual reality applications have started to be used among Turkish companies as well. For example, A Turkish building products company, which does not have the possibility of exhibiting all of its products to customers due to limited space at points-of-sale, developed a virtual reality application for customers to let them virtually experience the designed space, after it realized that customers were hesitant about making a purchase due to the fact that they could not see the final design. This application allows the company to offer its customers customized solutions, and a remarkable proportion of customers stated that this solution had an impact on their purchasing decision. As such, the company increased the sales of products with virtual reality option by 22% compared to the previous year.

The Accenture Digitization Index puts forth that for Turkish companies there is still significant work to do concerning the use of digital capabilities within customers' purchasing and product shipment stages. This stage of the customer lifecycle stands out as an area where Turkish companies have the lowest performance with a score of 42%, compared to the other three stages (Figure 12).

## The sales/shipment stage in the customer lifecycle is the stage where participating companies displayed the lowest performance.

### ► USAGE

This stage refers to customers' user experience after they have purchased a product or solution, and the stage at which tracking of this experience takes place. With digital capabilities such as collecting real-time data from products and services and taking actions based on that data and providing self-service options to customers, customer experience during usage stage can be improved. For example, a Turkish automobile tire manufacturer which participated in our study has been collecting data through the sensors from the tires which are sold to companies with vehicle fleets. Through the analysis of this data, this company knows when to get in contact with its customers to notify them for the replacement of the tires.

According to the Accenture Digitization Index, Turkish companies have a performance of 50 percent regarding the use of digital capabilities in usage stage within customer lifecycle. This result shows that a great deal of what they can do in this subject has not been achieved yet. (Figure 12)

## ► AFTER-SALES SERVICES

This stage refers to receiving customer complaints, feedbacks, product returns or similar cases by using various digital capabilities after the sales. Turkish companies' performance regarding this stage is at 56% (Figure 12). This score shows that the importance of the usage of digital skills in this stage has not been grasped yet. Companies should definitely put more focus on initiatives to enhance the use of digital channels, which reduce costs in after-sales operations and provide opportunities to boost customer satisfaction by allowing customers to have seamless experiences to which users are used to in today's digital world, instead of physical channels like shops and call centers. According to a global study conducted by Accenture, the proportion of Turkish customers switching their product or service provider due to dissatisfaction in after-sales services is much higher compared to other countries. This study suggests that in Turkey 85% of customers stop using a service providers' services when they are not satisfied. This proportion is 64% globally while it is 79% in developing markets. These proportions show that Turkish companies, which manage to make the right use of digital skills in this stage of the customer lifecycle, may gain a competitive advantage over their peers.<sup>10</sup>

**In Turkey, 85% of customers stop using a service providers' services when they are not satisfied. The right use of digital capabilities in this customer lifecycle stage gives companies the opportunity to differentiate themselves from their competitors.**

One prominent bank in Turkey made considerable gains in terms of both customer satisfaction and customer care costs, with projects in self-service channels. For example, in one of these projects, a new architecture was set up which receives, interprets and answers messages in the background or finds a suitable answer from internet banking infrastructure by leveraging Facebook Messenger. This way all messages began to be answered by a chat-bot. Shortly after the project had gone live, the company started to serve 350-400 customers on average per day without a call center attendant being involved.

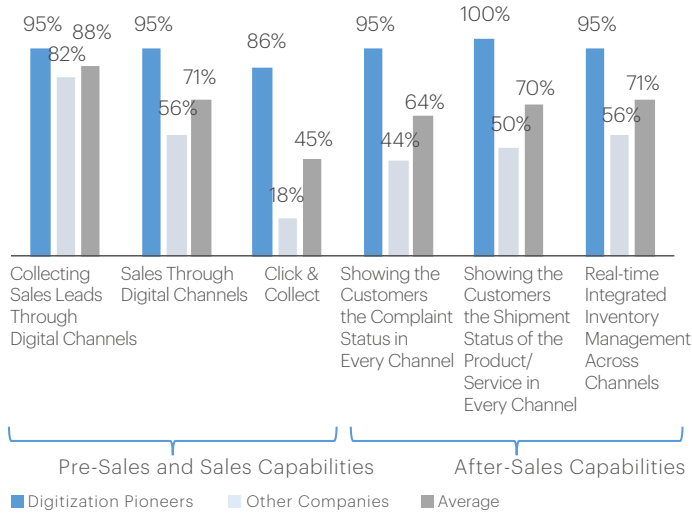
For the enhancement of customer experience, two subjects in particular come to the forefront across the customer lifecycle stages: omnichannel experience and customization.

## OMNICHANNEL EXPERIENCE

At the top of the list of tools that companies can use to enhance the customer experience, is the development of an omnichannel business model. Today's customer wants to be able to switch across online and offline channels smoothly and seamlessly. Nowadays, many customers choose the items online and then make the purchase in a physical store (webrooming). Similarly, making the online purchase of an item they have seen on offline channels is a popular method of shopping (showrooming) as well. In an Accenture study with 6,750 consumers from nine countries, 73% of participants say that they prefer making the online purchase of the items they see in a physical store, while 88% did online research and then made the purchase in a physical store.<sup>11</sup> Based on this data, the priority of companies should be to complete the integration that will provide a smooth and seamless switch across these channels. The companies that manage to attract customers in every channel and provide a perfect customer experience, hold the competitive advantage in the digital era. However, according to a recent Accenture research, only 13% of end users believe that digital channels and physical channels are designed to be compatible with each other. This, in general, shows that many companies in the world are far from providing customer satisfaction in the omnichannel.<sup>12</sup>

In the Accenture Digitization Index study, we observe that Turkish companies have significant room for improvement in both sales and after-sales capabilities in order to provide a seamless omnichannel experience to their customers.

**We observe that Turkish companies have significant room for improvement in both sales and after-sales capabilities in order to provide a seamless omnichannel experience to their customers**



**Figure 15: Digitization Pioneers and Other Companies’ Rate of Ownership in Capabilities Required for Omnichannel Experience\***

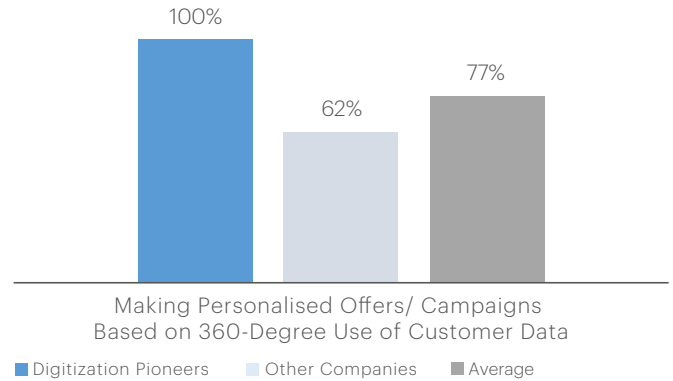
\*Based on data for 56 companies that are in direct interaction with their end-users

While Digitization Pioneers possess significant capabilities in the areas of collecting sales leads, making sales through digital channels, showing the customer the complaint and product/service shipment status on every channel, and simultaneously managing integrated inventory across channels, only 86% state that they possess the Click & Collect capability (choosing a product online and purchasing/collecting the item from physical channels). The other participant companies are far behind the Digitization Pioneers’ capabilities except collecting sales leads through digital channels (Figure 15).

## PERSONALIZATION

Consumers, whose expectations change with digitization, expect to receive a more personalized product, service and experience from companies through which they purchase products and services. Personalization is a concept that should be considered at every stage of the customer lifecycle. According to an Accenture study in the sectors of telecommunication, insurance, banking and air aviation in Turkey, nearly 40% of the customers pointed out the lack of personalized products/services and solutions as a primary reason to end their relationship with a company.<sup>13</sup>

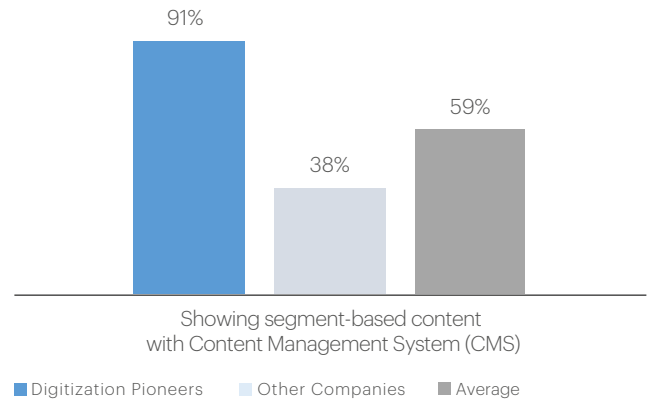
One of the main capabilities for personalization is using and making sense of customer data. Whereas all Digitization Pioneers state that they are capable of making personalized offers/campaigns based on 360-degree use of customer data, the ratio decreases to 62% among other companies and thus, makes us believe there is a long way to go (Figure 16).



**Figure 16: Digitization Pioneers and Other Companies’ Rate of Ownership in Capabilities Required to Make Personalized Offers/ Campaigns Based on 360-Degree Use of Customer Data\***

\*Based on data for 56 companies that are in direct interaction with their end-users

Another personalization example can be showing customers in different segments tailored contents by leveraging a Content Management System (CMS). We witness a widening gap between Digitization Pioneers and other companies in terms of utilizing this competency and reaching every customer (Figure 17).



**Figure 17: Digitization Pioneers and Other Companies’ Rate of Ownership in Capability to Display Segment-Based Content with CMS\***

\*Based on data for 56 companies that are in direct interaction with their end-users



## DIGITAL ENABLEMENT

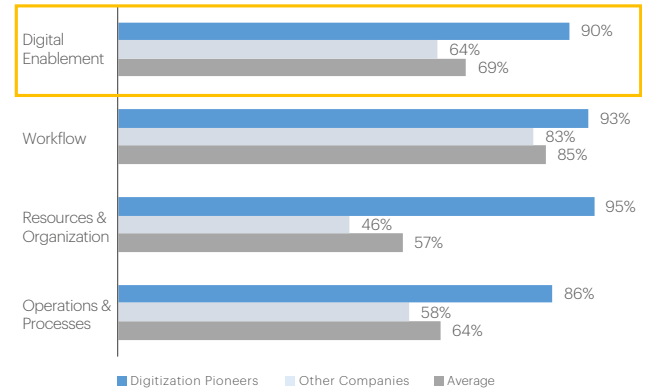
**Digital Enablement considers the use of digital technologies and applications as well as governance structures to support organizational workflow, internal processes and operations.**

For effective digitization, companies should adapt digitization to their internal operations as well and restructure them accordingly. While doing this, they have to make sure that they take concepts such as analytics, process automation, cloud computing, mobility, the Internet of Things and cyber security into consideration, and structure their organization and resources to facilitate digitization.

While evaluating the digital maturity of companies, the Accenture Digitization Index focuses on three criteria that reveal the results of the evaluation according to 50 indicators in the Digital Enablement dimension:

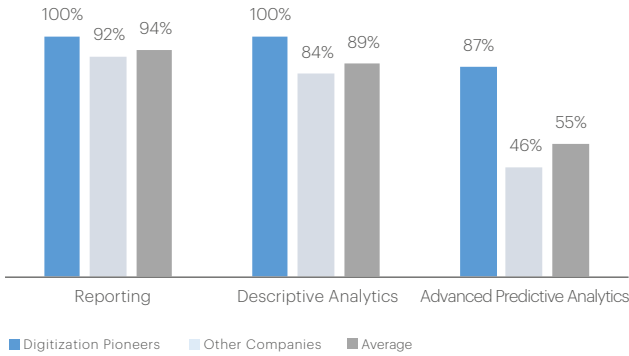
Operation & Processes	Extent to which a company is using digital and analytical capabilities to improve its internal operations and processes (e.g., process automation, tracking & management with digital solutions, usage of digital solutions by employees and suppliers, analytics solutions to improve internal operations & processes).
Resources & Organization	Extent to which the company leverages digitally powered resources and the required governance structures (e.g. analytics and/or digital departments and related KPI structure).
Workflow	Extent to which the company applies 'digital' to organize and perform its daily operations (e.g. virtual teams, video conferencing, social intra-networks, employees' usage of smart devices).

When we examine Turkish companies' performance in the Digital Enablement dimension, we see a considerable difference between Digitization Pioneers, although not as significant as in the Digital Services. We observe that the difference widens in the resources and organization criteria in particular (Figure 18).



**Figure 18: Digitization Pioneers' and Other Companies' Digital Enablement Performance**

One of the capabilities we evaluate for the digitization of companies' operational processes is analytics. A large number of companies interviewed for the study are using analytics to manage their internal operational processes. However, the analytical capabilities differ from each other: 94% of the interviewed Turkish companies use analytics for reporting, while only 55% state that they benefit from advanced predictive analysis by combining past customer behavior and future predictions (Figure 19). Companies however should plan their actions based on predictive decisions which are formed with the help of reliable and accessible data and not by empirical or intuitional decisions. Analytical solutions not only enable right decisions, but also help lower costs.



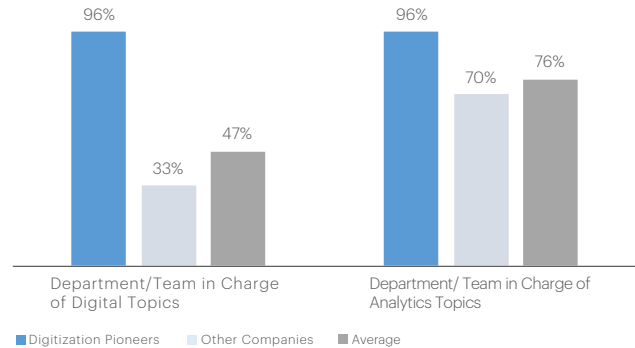
**Figure 19: Analytical Competencies of Digitization Pioneers and Other Companies**

With the Intelligent Operations platform, developed by GE Aviation in collaboration with Accenture, GE Aviation serves dozens of aviation companies which carry passengers and cargo. With this service, GE Aviation succeeded in lowering its customers' operational and maintenance costs while increasing their productivity. The platform uses analytics to predict, prevent and recover from setbacks, and helps aviation companies lower their plane maintenance and operation costs, increase the productivity of their crew and decrease compensations paid to customers and enables its customers to save billions of dollars every year.

## Analytics helps companies to reduce costs, provides better service by getting to know their customers better, and plays an important role in developing new products and services.

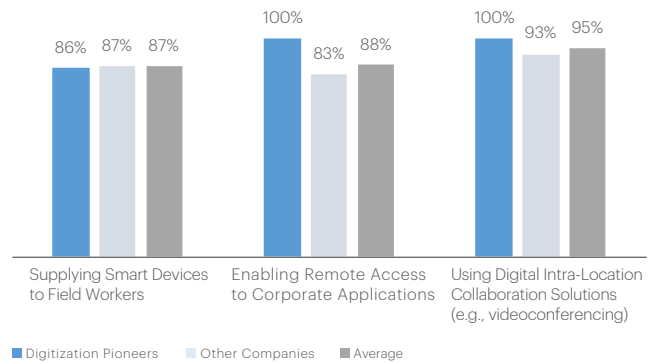
Data analytics is also about business intelligence, and provides companies a great competitive advantage in the launch phase of new products. For example, many insurance companies in other countries apply analytic solutions and determine the risk profiles of drivers by measuring various driving factors such as sudden breaks and acceleration which have a correlation with accidents, and thus forming different price offers.

Another important factor for companies in successfully putting digital transformation into practice is by developing KPI structures and building organizations in charge of this topic. The cooperation of these teams within the organization will increase the development of new skills, their productivity and effectiveness.



**Figure 20: Digitization Pioneers' and Other Companies' Rates of Putting a Team in Charge of Digital and Analytics Topics**

According to the Accenture Digitization Index study, a majority of Turkish companies still do not have a department or a team in charge of digital topics. In this field, while 96% of Digitization Pioneers have a department in charge of digital topics, the percentage descends to 33% in other companies. When it comes to having an analytics department, the general average in Turkey is up to 76% (Figure 20).



**Figure 21: Digitization Pioneers' and Other Companies' Rate of Using Digital Solutions to Improve Workflows**

Considering the digitization of workflows, Turkish companies are aware of the productivity contributions that are made when their employees use digital solutions, and the rate of Turkish companies that use digital solutions is significantly high. Our study shows that companies who do not fall into the category of Digitization Pioneers, supply smart devices to 87% of their fieldworkers, which indicates that they are not different from Digitization Pioneers in this regard. Similarly, the average in Turkey for enabling remote access to corporate applications and using digital intra-location collaboration solutions, such as videoconferencing, are 88% and 95% respectively (Figure 21).

## Other companies which are aware of the productivity contributions from their employees' use of digital solutions, deliver a similar performance to Digitization Pioneers in this domain.

Within the Digital Enablement dimension, security is another important issue for companies. The protection of data is critical not only for companies but also for customers and employees. According to an Accenture study, one of the most important matters for consumers in Turkey is a company's ability to protect personal information. Setting up the right operational models, processes and technologies are substantial for companies which would like to respond to their customers' demands. This statistic explains the risks of not designing these elements properly in a most striking way: 69% of corporate security specialists state that they have witnessed data theft by company employees.<sup>14</sup>

## Our study indicates that Turkish companies exhibit significant gaps in corporate security applications and protection of sensitive data, which is a very important topic underlying digitization.

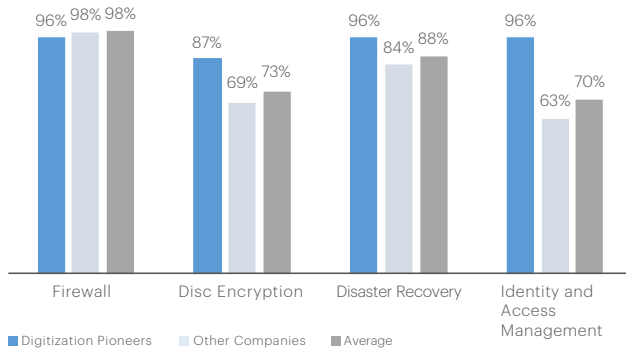


Figure 22: Digitization Pioneers' and Other Companies' Rates of Using Corporate Security Solutions

The majority of the 106 participating companies, some of which are the biggest corporations in Turkey, state that they use a firewall, a basic security application. However, when we look at more advanced security applications, we observe a decrease in the usage. For example, 27% of the interviewed companies do not use disc encryption, 12% do not use disaster recovery and 30% do not use identity and access management solutions (Figure 22). With regard to sensitive and personal data protection, the numbers are even more striking. The majority of companies in Turkey are not using solutions towards this matter. In addition, we observed that many companies do not follow the processes in order to protect sensitive data (Figure 23). These results show that there is a long way to go for Turkish companies in terms of corporate security, a very important pillar in digitization.

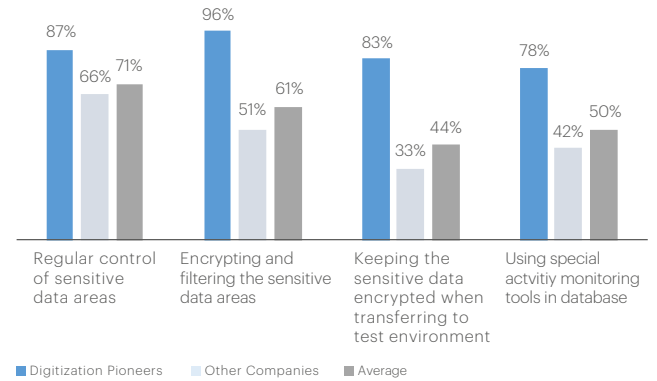


Figure 23: Digitization Pioneers' and Other Companies' Rates of Following Sensitive Data Protection Processes

# CONCLUSIONS AND RECOMMENDATIONS

**T**he Accenture Digitization Index study was prepared to underline the transformative effects of digitization in the business world and to clarify the position of Turkish companies in the process. This is why our study undertakes the mission of being an encouraging guide rather than a technical index. We have examined the digital strategies, digital services and digital enablement of Turkish companies and are sharing our insights obtained through extensive analysis.

In this respect, the index aims to reveal the necessary steps that must be taken in order to maintain companies' profitability, productivity and competitiveness by deepening senior management's comprehension of digital transformation. As digitization rapidly spreads in global business, this index will serve Turkish companies to help them position themselves properly, and to help the Turkish economy maintain its competitiveness within the global economy. Based on the results from the Accenture Digitization Index study, the following actions must be taken by business leaders in order to achieve these targets:



## UNDERSTAND WHERE YOU ARE AND DEVELOP YOUR DIGITIZATION STRATEGY

Digitization is not a phenomenon of which companies can choose to sit out; it is an inevitable necessity. Companies should first realize this fact and understand where they stand, and decide in which fields they can digitize in order to be able to compete in the digital world. And while doing that, they need to understand not just the position of their company but also the position of their customers, sectors and competitors in the digitization journey. In addition, they should consider the fact that their customers may demand a good experience, which they may have been experiencing in another sector. Companies must realize that the transformation may rise not only from within their sector but also from others.

After understanding their position on the digitization journey and identifying their needs, the primary step for companies is to develop their digitization strategies. In order to achieve that, they need to approach digitization as a whole. We witness that digitization efforts that include the whole organization are much more successful over ones that focus on either one field or department.

The alignment of capabilities developed both in the Digital Enablement and the Digital Services dimensions is a significant factor in successfully carrying out a company's digital transformation effort. Thus, the strategy developed by the company must consider the need of simultaneous development of an operating model, processes and technological capabilities to support the digitization of product and services, customer interaction as well as sales and after-sales service functions.

Companies who prioritize their digitization strategies, plot a roadmap based on this strategy, set performance goals for its employees in line with this strategy, and succeed in measuring the returns of digitization, have an advantage over their competitors.





## BUILD STRONG FOUNDATIONS

It is important that companies should build their digitization journeys on the right foundations. Many companies try to compete in a world that includes social media, mobile applications, cloud computing, and analytics with a technological infrastructure that was developed for an earlier and different era. Thus, while using their existing technological infrastructure, they also have to renew, modernize and transform it into a form that is responsive to the speed and complexity digitization brings along. This requires the building of three important strategy components:

- 1. Agility:** The technological infrastructure that allows faster realization of business needs, and the required capabilities such as modular architecture, new generation integration techniques, and mobility
- 2. Intelligent applications:** The technological infrastructure to process big data generated both inside and outside the organization, create meaningful insights from it and make it useful, and the required capabilities such as big data, artificial intelligence, and natural language processing (NLP)
- 3. Connected applications:** The technological infrastructure to stay in continuous interaction with business partners, customers and new-generation physical tools such as sensors as well as underlying capabilities such as security, device management, analytics

Thus, when putting these components into practice, technological structures must develop capabilities to respond to needs and risks such as data management and analytics, process automation, internet of things, cloud technologies, API management and cyber security.

While building technological foundations, it is important not to neglect the operating model that will put it into effect. Building an agile, fast decision-making and target-driven operating model with capabilities to put the Digital Strategy, Digital Services and Digital Enablement into practice, and setting up the right KPI structures, will enable each department of the company to move in a synchronized way through its digitization journey.



## DIFFERENTIATE YOUR COMPANY THROUGH DIGITIZATION

The companies who build the right foundation will gain a more robust, agile, lean and efficient structure. And companies should remember that, in order to be able to differentiate themselves, they should know that the transformation process is centered around the customer and innovation. Thus, companies should keep this perspective in clear focus when designing their value proposal and the experience they offer to their customers. They should make this the new way of doing business, make it a part of their organizational culture, and ensure it is embraced by all employees from top to bottom.

Companies may lack some of the capabilities such as service design, user experience, digital marketing, digital channel management, analytics and innovation to put this perspective into practice. What these companies should do is to cultivate human resources capabilities to support digital transformation and new ways of doing business; and for the capabilities which may not be possible to develop within the organization or may take a while to do so, to look outside their organizations for collaborations with research centers, start-ups and specialized companies. These collaborations can also make a great contribution to development of new ideas which companies need for their digital transformation as well as to an open innovation environment and gaining momentum on their digital transformation journey.



## **MONITOR YOUR PROGRESS CONTINUOUSLY THROUGH THE RIGHT GOVERNANCE STRUCTURES**

Another important factor in order to achieve digital transformation is receiving the support of senior management and forming the right governance structures. Adoption and communication of the strategy by top managers to help pursue the targets and intervene when obstacles appear, is crucial for a successful digital transformation.

Most of the time, companies do not establish a connection between digital investments and the growth and productivity and therefore fail to form a governance structure to regularly monitor the return of investments in this domain. Continuous analysis of to what extent the targets were met, which moves were positive and negative and the results of these moves, the returns of investments, regular briefing to decision-makers and continuous restructuring / improvement of initiatives which failed or did not yield satisfactory results, are necessary actions. This enables progress towards digitization and also reveals the fact that digitization is actually a self financing transformation, which ultimately stops the required financial fund allocation for digitization being an issue.



## **DO NOT UNDERESTIMATE THE IMPORTANCE OF MACRO-LEVEL COLLABORATION**

The requirements to speed up digital transformation may outrun companies' capabilities at certain points. Forming the necessary education infrastructure to cultivate the human resources required for digital transformation, issuing regulations to facilitate digitization projects and investments as well as giving incentives to these investments and regular monitoring of the regulations which put boundaries around the companies are some examples of those issues. To overcome these issues, companies should collaborate with various non-governmental organizations, industry associations, universities and governmental bodies which issue regulations and legislations.

# RESEARCH APPROACH

## METHODOLOGY

The measurement scales and identification of all criteria underlying the Accenture Digitization Index went through a rigorous selection, and the final set of assessment criteria was determined by experts from Boğaziçi University, Middle East Technical University, Accenture Industry leaders, and Accenture subject matter experts from the Digital Domain. The weight of each assessment criterion was defined according to its relative importance based on expert opinions.

Within this study, in order to ensure robustness, accuracy and reliability in the data, Accenture Digitization Index scores are based on a balanced mix of data collected from primary and secondary resources. We conducted in-depth face-to-face interviews with companies' IT and digital domain leaders as primary source of data to explore the companies' digital capabilities.

In total, 106 executives from various industries and leading companies were interviewed. We collected secondary data from publicly available sources, such as company annual reports, investor relations documents, company communications, presentations, and news. Moreover, companies' digital services, such as web pages, mobile apps, and social media channels, were evaluated.

The data from primary and secondary research were aggregated and quality controlled. All data was evaluated according to the assessment criteria, and final digitization scores were calculated on a percentage (0-100) scale by using weighted averages. The data has been studied carefully to eliminate the risk of distortions to ensure that the index scores and ranking are reliable. A sensitivity analysis was conducted on the weights of the criteria in order to see the robustness of the index scores.

In the robustness analysis of the index scores, we assigned 100 different weights to evaluation criteria within a +/-10 percent range of the existing weighting model, and calculated 100 separate Accenture Digitization Index scores for each company. Results showed that the index scores are not significantly sensitive to the assigned weights, and that the rankings of companies were not substantially affected regarding the robustness of the scores within this report.

## DISTRIBUTION OF COMPANY SCORES

In our analysis, we used descriptive statistics parameters to describe collected data in a meaningful way. Our overall data set consists of 106 companies from various industries whose distribution characteristics are as shown below:

- **Measures of central tendency**

Mean: 61%

Median: 59%

- **Measures of spread**

Max: 97%

Min: 22%

Standard deviation: 20%

We also examined how company scores are distributed (Figure 24). Approximately 64% fall within a 1% standard deviation of the mean, while 100% fell within 2 standard deviation of the mean.

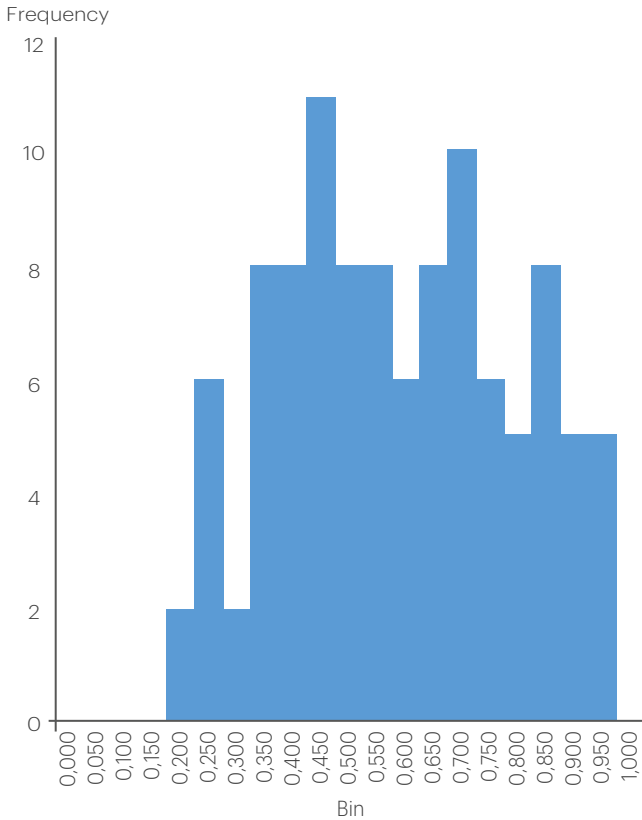


Figure 24: Distribution of Company Scores

## FORMATION OF INDUSTRY CLUSTERS

Due to fact that digital maturity and digitization requirements of a company are related to the industry they operate in, we aimed to build meaningful industry clusters to gain insight on the digitization levels in each industry and be able to make comparisons among different industries. We followed a systematic classification approach and grouped the evaluated companies into industry clusters based on classification of economic activities in the European Community (NACE Rev.2). We used a hierarchical classification approach to present industries at two cluster levels – Sections (Level 0) and Divisions (Level 1). In order to determine at which level a company will be classified, we looked at two criteria to make rational comparisons among the companies at the same level. The first criterion was to group companies performing similar economic activities together; the second was to build industry clusters with at least 3 companies. In case we could assign at least three companies performing similar economic activities (as defined by NACE classification) to the Divisions Level (Level 1), then these companies were also grouped at this level (Level 1) within NACE coding terminology. In case there were fewer than 3 companies at the Divisions Level, the companies were then grouped at the Sections Level of NACE (Level 0), which is one level higher than the Divisions Level.

## REGRESSION ANALYSIS

Interpreting the regression results:

- A positive coefficient means the relationship is positive (i.e., an increase/decrease in one explanatory variable is expected to cause an increase/decrease in the dependent variable in the amount of the factor.)
- A t-stat above 2 indicates that the result is very likely to be statistically significant. Correspondingly, a p-value below 0.05 means the same thing according to the confidence level of 95 percent.
- Adjusted R<sup>2</sup> represents the proportion of the variation in EBIT that is explained by the variation in the explanatory variables, and assumes value within a 0-1 range. A score close to 1 indicates a perfect explanation of EBIT by explanatory variables.

### Model

$$EBIT = a + b.ADIS + c.SEM$$

### Where:

- EBIT is the Earnings Before Interest and Taxes (EBIT) margin of a company in 2014 which was calculated by dividing EBIT value in 2014 to revenue generated for real sector companies in 2014.
- 'a' is the constant term.
- ADIS is the Accenture Digitization Index Score of the company
- In order to account for the differences among industries, we used an additional variable, SEM, which represents the average EBIT margin of the industry in which the company operates.

### Results

Adjusted R <sup>2</sup>	0.627
Sample Size	38

	Coefficient	T-stat	P-value
a	-0.061444489	-2.037	0.049
ADIS	0.095540101	2.535	0.016
SEM	0.935565595	8.005	0.000

- The model is highly significant as seen from the low p-values.
- As we can see from the Adjusted R<sup>2</sup> value, the model explains 63% of the variation in the EBIT margin with highly statistical significance.
- The outputs in the tables above suggest that a statistically significant relationship between the Accenture Digitization Index score and EBIT margin exists. According to this regression analysis, a 10-point increase in Accenture Digitization Index score (out of a maximum score of 100 points) is associated on average with a 1% additional EBIT margin for a company.

# PARTNERS

## VODAFONE TURKEY

**A** part of the Vodafone Group, which operates as one of the world's foremost mobile communication companies in terms of its revenues, Vodafone Turkey is Turkey's second largest mobile communication company with 22.6 million subscribers as of 30 September 2016. One of the leading foreign direct investments ever made in Turkey, Vodafone Turkey's total investments have neared TL20 billion since 2006. In 2010, Vodafone Turkey acquired Borusan Telekom, followed by one of Turkey's largest alternative telecom operators, Koç net in 2011. Offering mobile voice, fixed voice, mobile Internet, ADSL and fiber services to individuals and enterprises in line with its vision of leading Turkey's Digital Transformation, Vodafone Turkey operates with more than 3,300 employees, over 1,200 retail stores, and a family of stakeholders including 43,000 people.

## TBV

**T**he Turkish Informatics Foundation was established on April 14, 1995 to conduct activities towards the greater goal of transforming Turkey to an information society. The Foundation currently has 120 corporate and 217 individual members. The Turkish Informatics Foundation's primary mission is to expedite Turkey's transition into an information society, and the Foundation has completed several activities in this regard. During the globalization era, Turkey has set a new path towards increasing its competitiveness in the international arena and its efficiency in all aspects and considers the impact of informatics on these goals. The Turkish Informatics Foundation is the only entity that endeavors to spread informatics to a national level.

## PROF. DR. AYŞEGÜL TOKER, DEAN, BOĞAZIÇI UNIVERSITY FACULTY OF ECONOMICS AND ADMINISTRATIVE SCIENCES

**S**ince her start as a Boğaziçi University Department of Business faculty member in 1997, Prof. Dr. Toker has been doing research on the internet area and studies the field of consumer and corporate adaptation of new technologies. In line with the advancements in information and communication technologies, Prof. Toker has expanded her field and has published numerous respected articles in academic journals, presented at local and international conferences and written books and chapters on the topics of social media, location-based marketing, mobile marketing, online marketing, online communities and customer

relations. She is a co-author of Mobile Marketing: Fundamentals and Strategy published by McGraw-Hill in 2011. Recently, her most prominent academic studies and professional work have been on digitization strategies, social media and digital marketing. Currently, she teaches social networks and media, digital marketing, location-based marketing, e-commerce and entrepreneurship, and works as a researcher and consultant. In addition to her academic studies, Prof. Toker acted as Boğaziçi University's Social Media Team Coordinator and managed strategy and presence of the university in social media between 2011 and 2013. In 2016, she became Director of Boğaziçi University's Entrepreneurship Center, where she carries out projects to develop entrepreneurship culture and awareness.

## PROF. DR. MURAT KÖKSALAN, CHAIRMAN, METU INDUSTRIAL ENGINEERING DEPARTMENT

**P**rof. Dr. Murat Köksalan received his BSc. and MSc. degrees from the Industrial Engineering Department at Middle East Technical University, and received his PhD from the Industrial Engineering Department at SUNY Buffalo, NY, USA. He has worked as a visiting professor at SUNY Buffalo and Purdue University in the USA, and at Aalto University in Finland. Winning TÜBİTAK's Young Investigator Award, the Parlar Foundation's Science Award, and the Gold Medal from the International Society on Multiple Criteria Decision Making are among his accomplishments. He won the Institute for Operations Research and the Management Sciences' (INFORMS) case competition four times and was selected as Outstanding Teacher at both METU and Purdue University. Currently, he is the President of the International Society on Multiple Criteria Decision Making and the founding president of the INFORMS Section on Multiple Criteria Decision Making. His research interests include multiple criteria decision problems and optimization. He has done methodological and applied research and has published extensively in these areas. More specifically, he has developed and applied methodology for identifying criteria suitable for the addressed problem, determining the relative importance of criteria, developing scales appropriate for the measurements, measuring the performances of alternatives by evaluating different criteria, identifying the best alternative, and ranking or grouping alternatives with respect to their performances. More information is available at <http://www.metu.edu.tr/~koksalan/>. Dr. Gülşah Karakaya from METU, also worked as a researcher in the methodological aspects and the analysis of the results.

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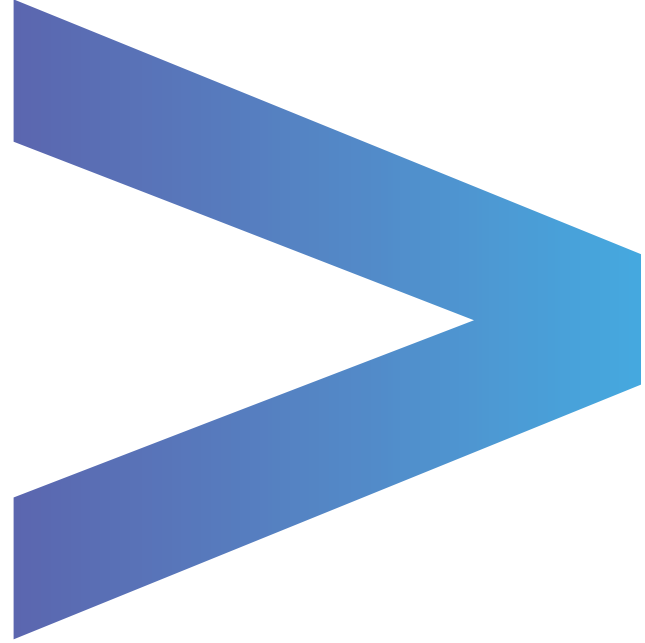
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