

# DIGITAL CYPRUS

## INDUSTRY DIGITAL POTENTIAL

VOLUME 2

NOV.2018

Presented by

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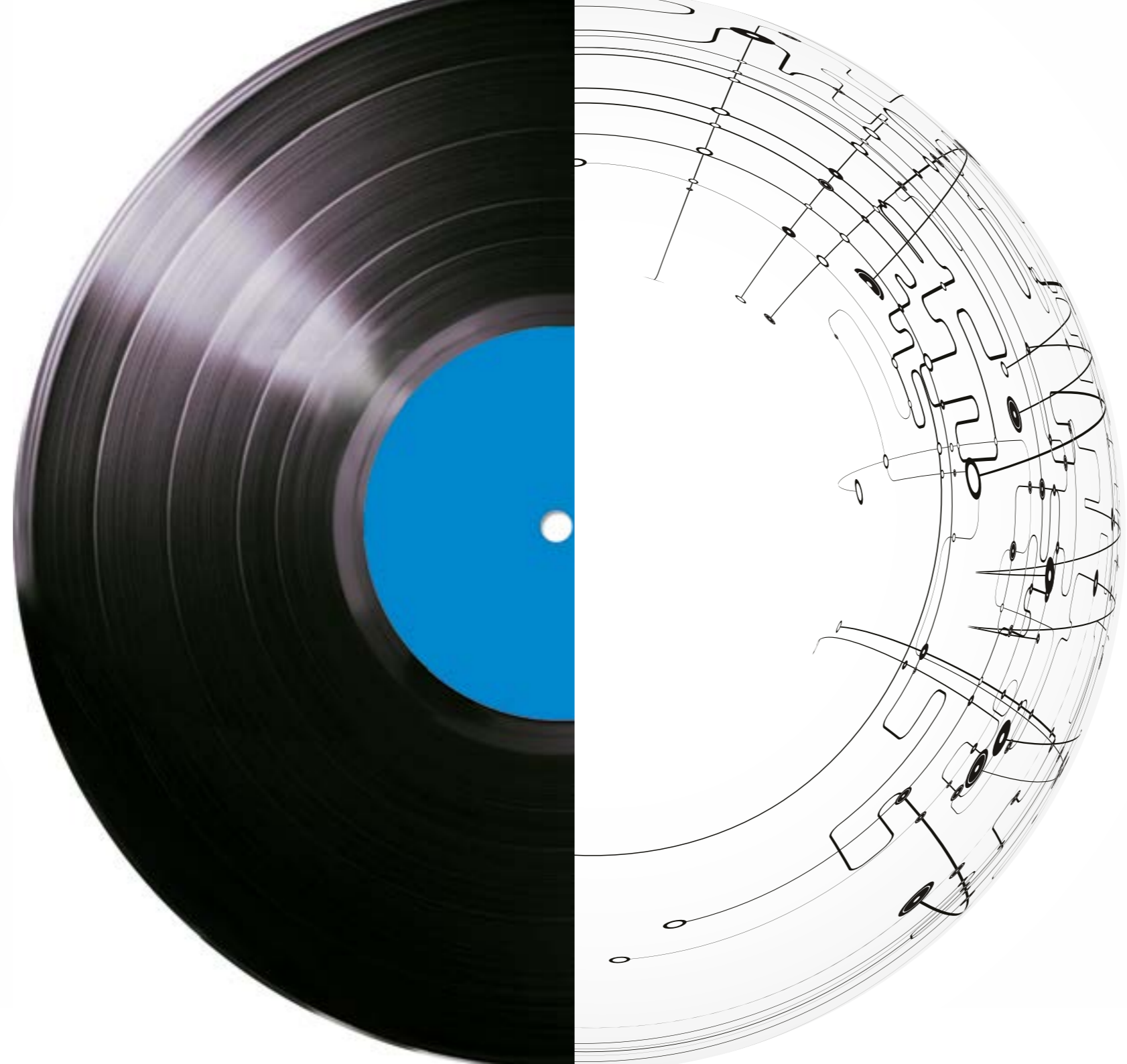


**INDUSTRY  
DIGITAL  
POTENTIAL**

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# 1. INDUSTRIES' ROTATION TO DIGITAL



# 1.1 THE DIGITAL PIVOT POINTS

No industry remains unaffected by digital. In fact, for Accenture, “every business is a digital business”. Digital is no longer optional.

Organizations across all industries must face the fact that investing in digital is rapidly becoming a “survival” necessity. Digital is no longer confined to the IT divisions, to product development, or left as a side note in the company strategy. The influence of digital is pervasive. Its role and influence spreads from the customer interface to the supply chain and beyond.

The questions have changed from “What is digital?” to “How do we bring digital into our business?” and to “Who is doing digital well?”.

Our point of departure is the fact that there is no “one-size fits all” digital strategy and no “blanket” approach for digitalization.

The degree of impact that digital has on each company and the digital journey that the latter shall follow, is contingent to multiple factors.

As each industry is unique, the respective digital rotation is likely to influence different areas of the industry value chain. These, we refer to as “digital pivot points”.

## What are the digital pivot points?

Companies organize their business activities against value chains that typically consist of strategy, production, sales and customer services and operations. As each industry is unique, the respective digital rotation is likely to influence different areas of the industry value chain. These, we refer to as “digital pivot points”.

Below we present an indicative value chain that will be used as the guiding framework to identify the relevant digital “pivot points” for the Cypriot industries (see Figure 1.1).

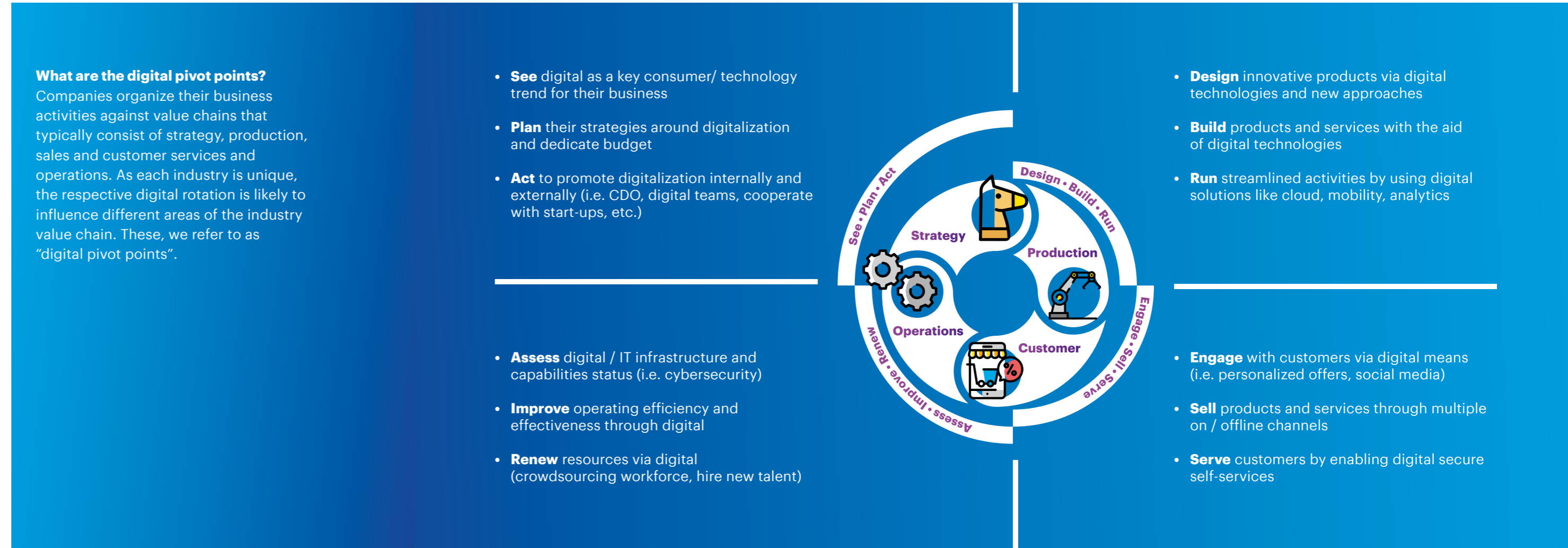


Figure 1.1. The industries' value chain

# 1.2 THE “PRODUCTION-CENTRIC” GROUP

Digital can affect industries across four different areas of their value chain:

- > **Strategy:** Understand the digital trends that impact the organization. Develop an actionable and sustainable strategy.
- > **Production:** Design and produce products and services through the use of digital technologies. Leverage digital solutions to streamline manufacturing processes and supply chain networks.
- > **Customer:** Engage with customers via digital means to meet their changing expectations and provide a seamless, engaging omnichannel customer experience.
- > **Operations:** Leverage digital technologies to improve operational efficiencies. Adopt digital means to empower the employees. Digitally “new-skill” the workforce and foster a digital culture.

The impact of digital on the value chains of different industries follows a set of different patterns. According to these patterns, industries are classified into three distinct groups: the “production - centric”, the “customer - centric” and the “digital multipliers”.

Firstly, we see the “Production-centric” group (see Figure 1.2). Automotive, Industrial, Infrastructure & Transportation, Chemicals & Refined Petroleum, Construction, Natural Resources and Utilities are the industries which belong to this group. Asset-heavy, fixed capital-intensive structures, as well as high number of field workers are some of the commonalities observed amongst these industries. In fact, these industries mainly focus on the digitalization of their production and internal operations. Digital initiatives that companies typically undertake across these areas are, the automation of plant operations, the augmentation of their workforce’s capabilities and the deployment of predictive asset management solutions.

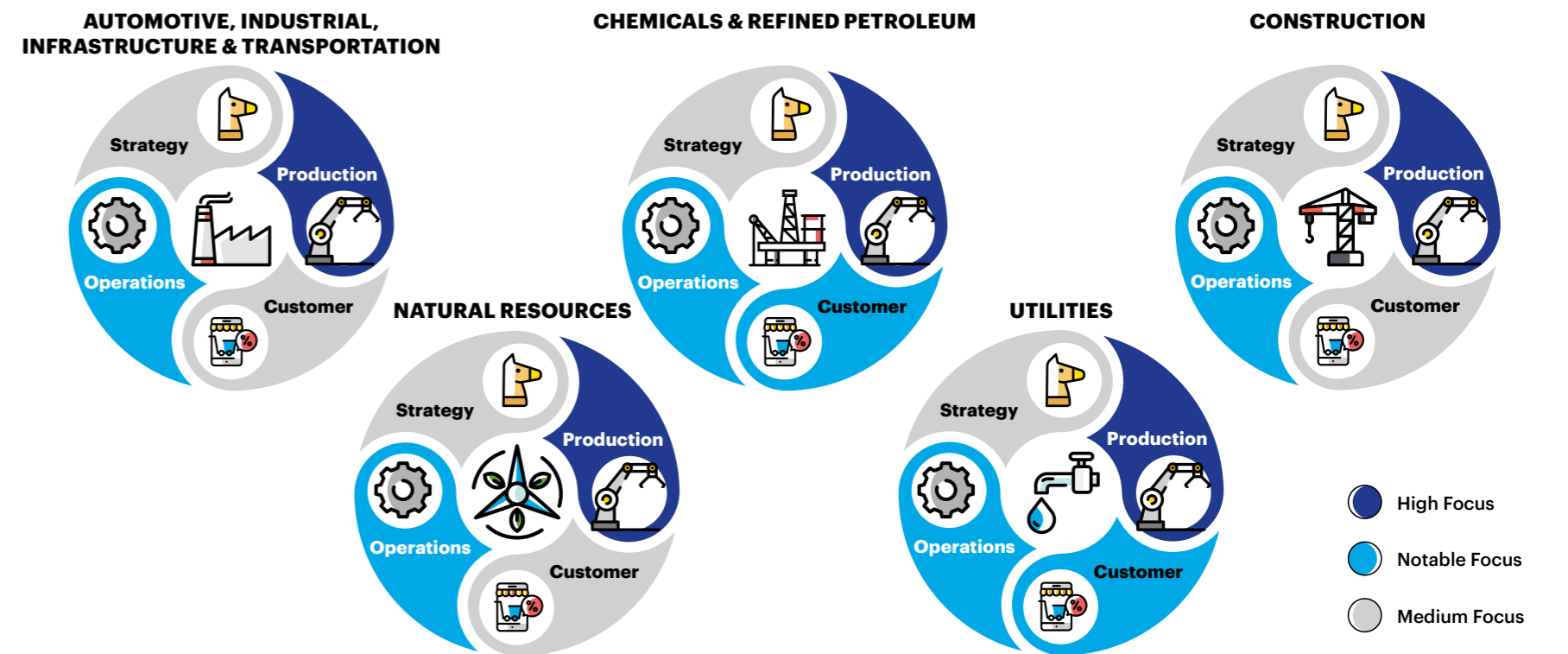


Figure 1.2. The “Production-Centric” Industries

# 1.3 THE "CUSTOMER-CENTRIC" GROUP

Secondly, we see the "Customer-Centric" group. Retail, Consumer Goods and Tourism, are the three industries that comprise this group (see Figure 1.3). Digital affects all areas of their value chain with primary emphasis to be placed on the digitalization of their sales channels and the digital enhancement of the customer experience and operations.

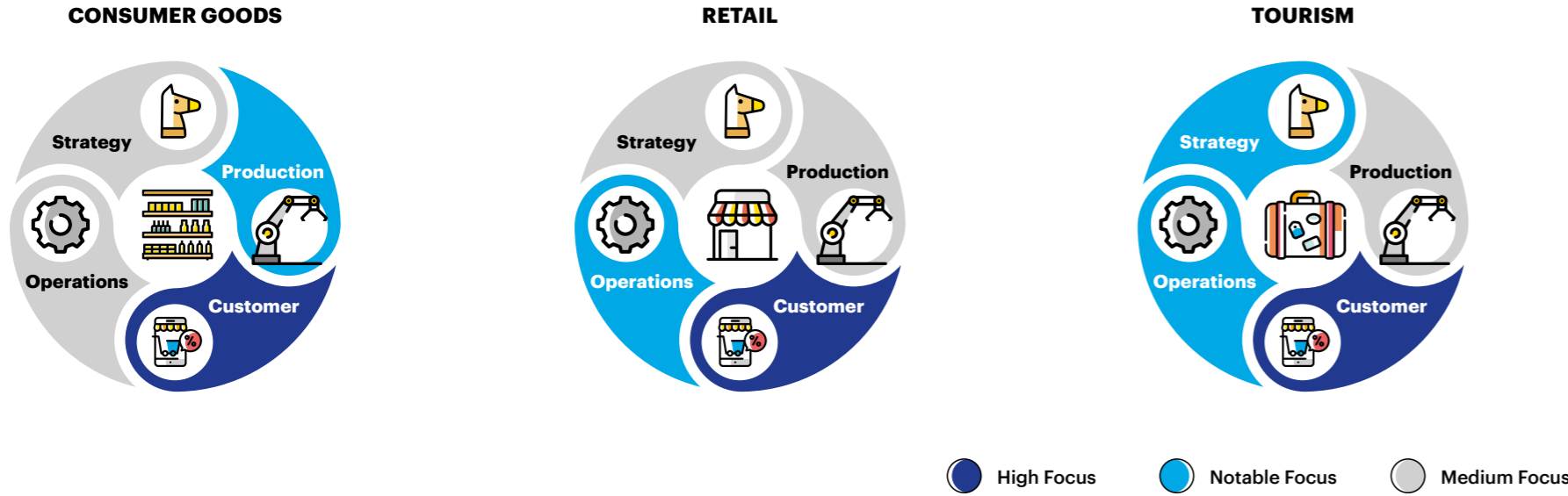


Figure 1.3. The "Customer-Centric" Industries

# 1.4 THE "DIGITAL MULTIPLIERS" GROUP

Thirdly, we observe a different pattern of digitalization evident in the following industries: Business Services & Technology, Communications and Financial Services. These industries form the third group. Industries in this group have a service orientation and are significantly affected across their respective value chains. Accenture research notes that industries which belong to this group, demonstrate the highest levels of digital maturity. They are understood to be the "drivers" of their countries' digital transformation and are considered to be the national "Digital Multipliers" (see Figure 1.4).

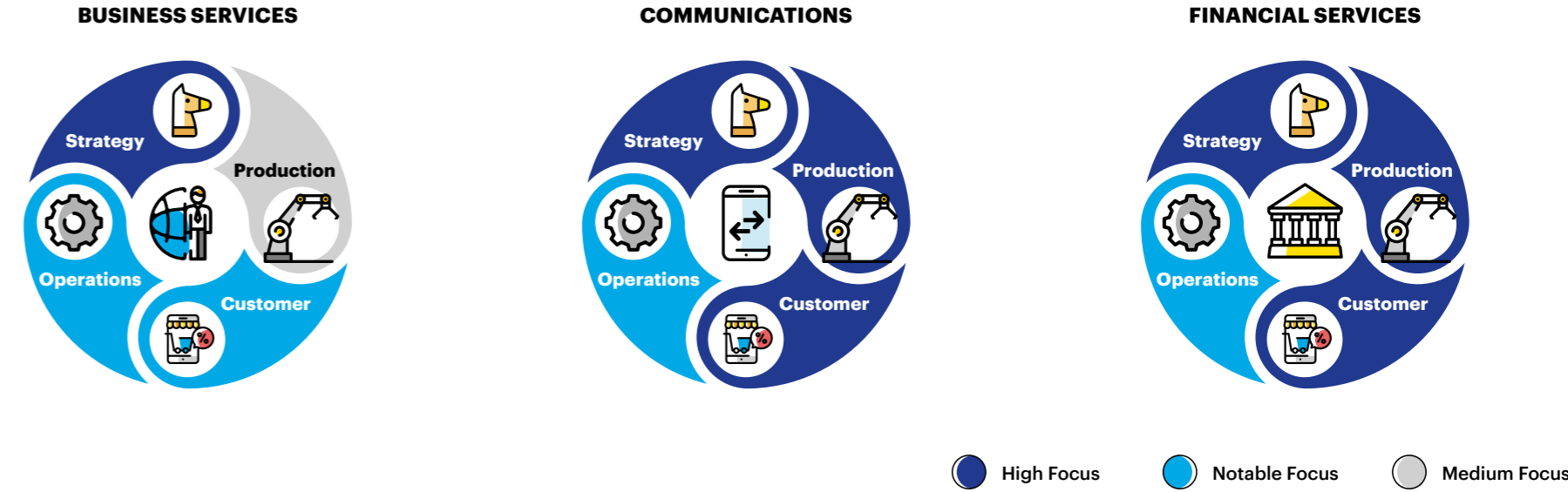


Figure 1.4. The "Digital Multipliers"





The marked significance of the “multiplier” industries as “drivers of digitalization” is attested by the position they occupy versus other industries on the Digital Economic Opportunity Index (see Figure 1.5). As evident by the DEOI analysis, the “multipliers” occupy top digital maturity positions across the 11 countries of our sample.

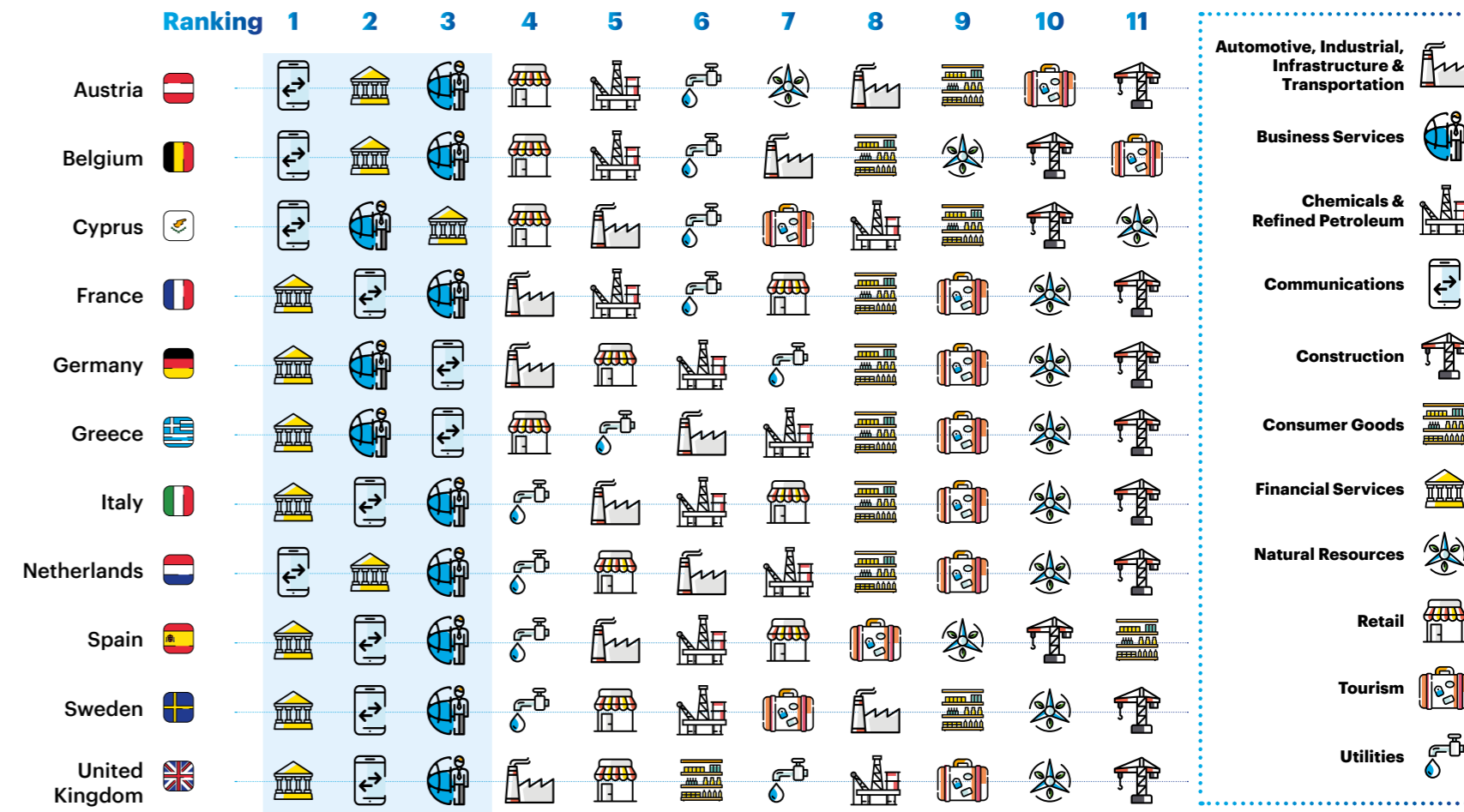


Figure 1.5. Industries’ estimated digital maturity (DEOI Scores, 2018)

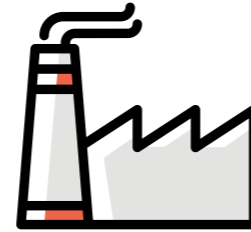


# **2. THE DIGITAL ANATOMY OF CYPRUS'S INDUSTRIES**



# 2.1 THE “PRODUCTION - CENTRIC” INDUSTRIES

## “AUTOMOTIVE, INDUSTRIAL EQUIPMENT, INFRASTRUCTURE & TRANSPORTATION” INDUSTRY



Our analysis of the Automotive, Industrial Equipment, Infrastructure & Transportation (AIIT) industry's digital maturity demonstrates that in 2018 the Cypriot industry scored 30,6 points, situating itself at the lower end of the digital maturity curve (see Figure 2.1). This is also reflected in our “Digital Capabilities” survey results, where more than 70 percent of Cypriot AIIT executives attested their belief that their organization's business units are not yet fully aligned towards their organization's digital transformation<sup>1</sup>.

Despite its position on the digital maturity curve, worth noting is that the Cypriot AIIT industry demonstrated an increase by 2,5 points during the last four years.

However, as the digital economic opportunity index (DEOI) is a relative one, the higher increase manifested by other European counterparts indicated that Cyprus's peers have already accelerated their efforts towards digitalization. The fact that only 43 percent of the surveyed AIIT executives consider digital strategy to be an integral part of their organization's strategy is testament to the industry's hesitant stance towards digital rotation<sup>2</sup>.

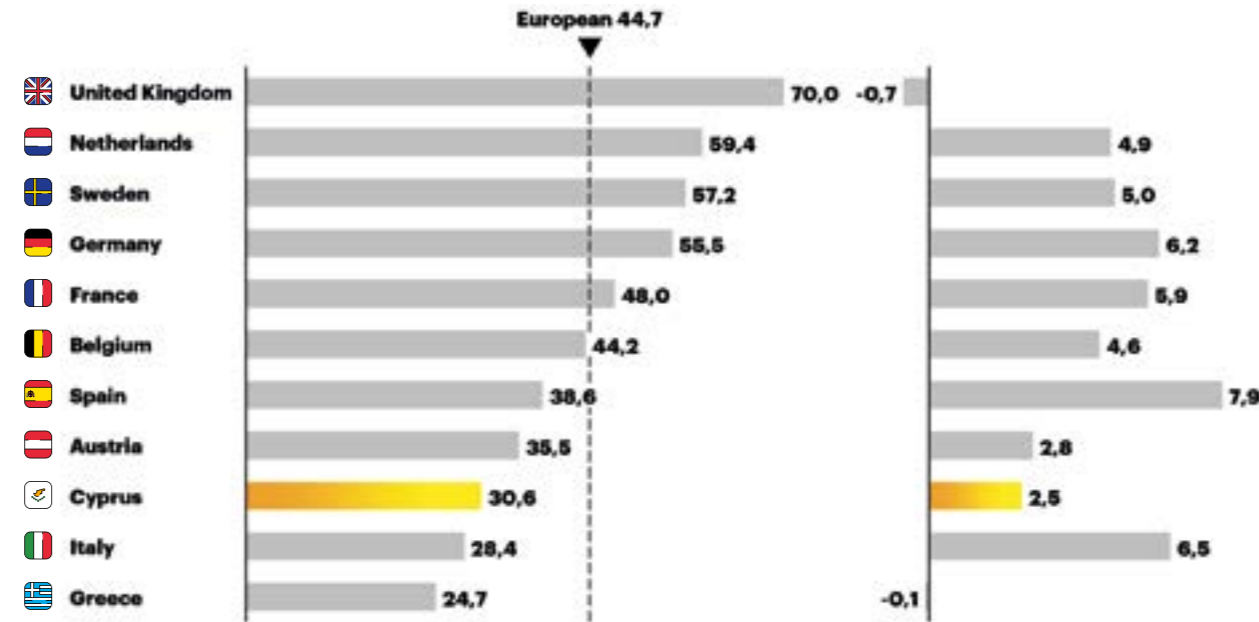


Figure 2.1. The digital economic opportunity index (DEOI) 2018 & evolution 2015 - 2018, European sample (# out of 100)

Looking into the three levers that make up the Digital Economic Opportunity Index, namely, Digital Skills, Digital Technologies and Digital Accelerators, we can gain a more detailed understanding of each lever's contribution to the industry's score (see Figure 2.2).

Our analysis demonstrates that the Cypriot AIIT digital maturity index is mainly driven by the Digital Skills lever (52 percent). Both the Digital Technologies and Digital Accelerators levers record a significantly low impact (18 percent and 30 percent respectively). It is worth noticing that the industry score is underpinned by a “digital paradox”. Namely, it holds the first position with regards to its Digital Skills percentage contribution but at the same time the lowest with regards to the percentage contribution of Digital Technologies to its overall maturity.

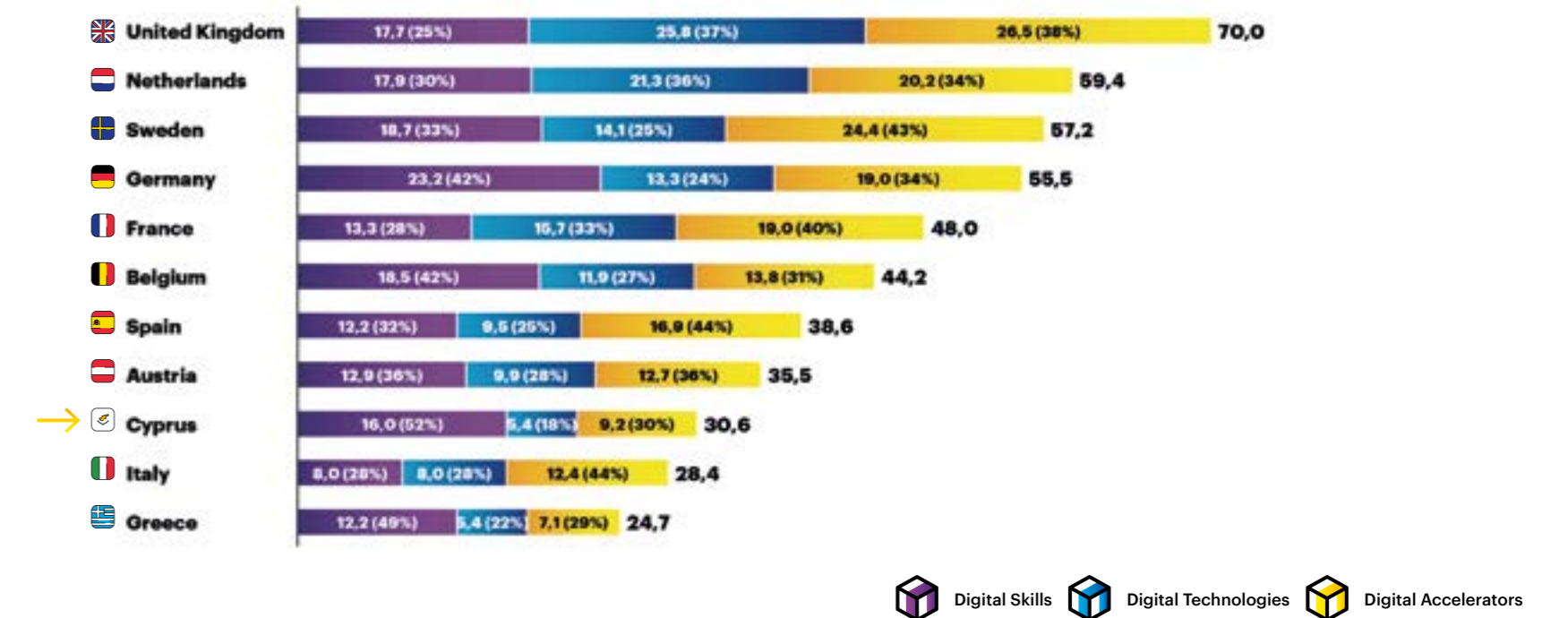


Figure 2.2. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - breakdown per lever

1. The performed analysis and the respective conclusions were based on data recorded through Accenture's “Digital Capabilities” survey. The survey ran from July 13, 2017 to October 30, 2017 and more than 80 Cypriot organizations across 11 key Cypriot industries participated.  
2. ibid

For a more in-depth understanding of the key drivers we have further dissected the index into its nine dimensions (see Figure 2.3).

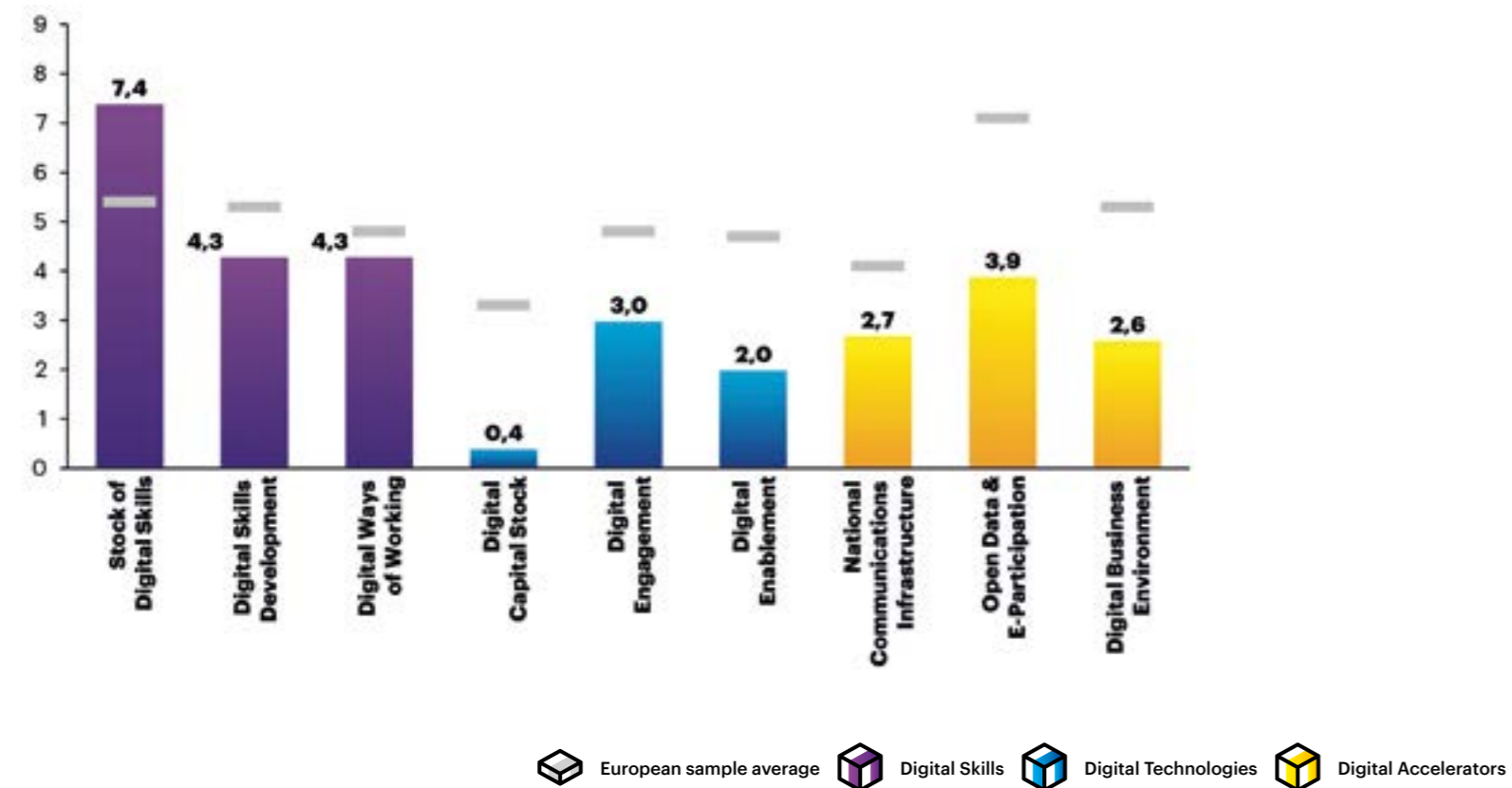
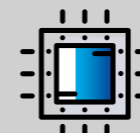


Figure 2.3. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - analysis per dimension



**Digital Skills:** As discussed at an aggregate level, the Cypriot AIIT industry performs on par with the European average across its Digital Skills lever. Cypriot AIIT companies employ a relatively high number of ICT specialists and a workforce that exhibits mastery of basic digital skills. This is reflected by the industry's high score across the "Stock of Digital Skills" dimension. In terms of investments in digital training and development, the Cypriot industry performs on par with its European peers, ranking slightly below average. In addition, the industry has already adopted digital practices to enhance its workforce mobility, such as remote access to enterprise's IT systems. This brings Cypriot companies closer to the sample's average score across the "Digital Ways of Working" dimension. The surveyed AIIT executives appear to agree with the abovementioned outcomes of the analysis. In fact, 72 percent of them believe that their organizations' workforce is open to adopt the new digital skills that will be required in the future. In fact, 43 percent of them claim to have already identified the competencies required for their organizations' digital transformation<sup>3</sup>.



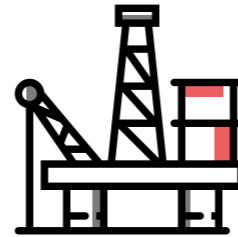
**Digital Technologies:** In contrast to its high performance across Digital Skills, the industry exhibits significant room for improvement across its Digital Technologies lever. Our DEOI data indicates that Cypriot AIIT companies have yet to make significant investments with regards to their ICT hardware and software stock. This contributes to the industry's low score across the "Digital Capital Stock" dimension. Furthermore, the industries appear to have already adopted digital collaboration practices. This has led to a 3-point score under the "Digital Engagement" dimension. The picture becomes more problematic with regards to the industry's adoption of enabling digital technologies. According to the DEOI findings, AIIT organizations in Cyprus demonstrate a low adoption rate amongst digital technologies such as IoT, cloud and analytics. This has led to a "Digital Enablement" score which is significantly behind the European average. Interestingly, even though the industry ranks significantly below the European average on the Digital Technology lever, the majority of the questioned AIIT executives perceive their industry to be highly competent with regard to digital technologies. As a matter of fact, more than 70 percent of those surveyed, claim that their organization's existing applications and infrastructure platforms successfully support the new digital operating model. In addition, 43 percent of them believe that their organizations are well prepared to utilize the potential of IoT, machine learning, cognitive computing and other digital technologies to optimize their internal operations and increase growth<sup>4</sup>.



**Digital Accelerators:** Finally, the Cypriot AIIT industry lags behind the European sample on all dimensions of its Digital Accelerators lever. Our analysis of the underlying dimensions suggests that the Cypriot industry's underperformance could be mainly influenced by structural inhibitors that decelerate digital transformation and contribute to the industry's low maturity score on the "Digital Business Environment" dimension. According to our "Digital Capabilities" survey, instigating innovation appears to be a top priority for the AIIT executives within the next five years. In fact, 57 percent of them state that in the near future, embracing innovation will be of paramount importance for their enterprises<sup>5</sup>.

3. *ibid*  
4. *ibid*  
5. *ibid*

# “CHEMICALS & REFINED PETROLEUM” INDUSTRY



Our analysis of the Chemical & Refined Petroleum (CRP) industry’s digital maturity for 2018 suggests that the Cypriot CRP industry holds the last position in the European sample, with a total score of 20 points (see Figure 2.4). This however, openly contradicts the perception of the surveyed Cypriot executives within the Chemicals and Refined Petroleum industry. In fact, 34 percent of them believe that their organizations perform on par with their global counterparts, while 32 percent of them perceive their organizations to perform above par with regards to their digital readiness<sup>6</sup>.

Nevertheless, the CRP industry’s score has increased by 2,9 points over the past four years. This indicates that the Cypriot CRP industry has already acknowledged the importance of embracing new digital technologies and capabilities and is actively working towards this goal. This is further confirmed by the interviewed Cypriot CRP executives, where 60 percent set ambitious goals for the digitalization of their operations<sup>7</sup>.

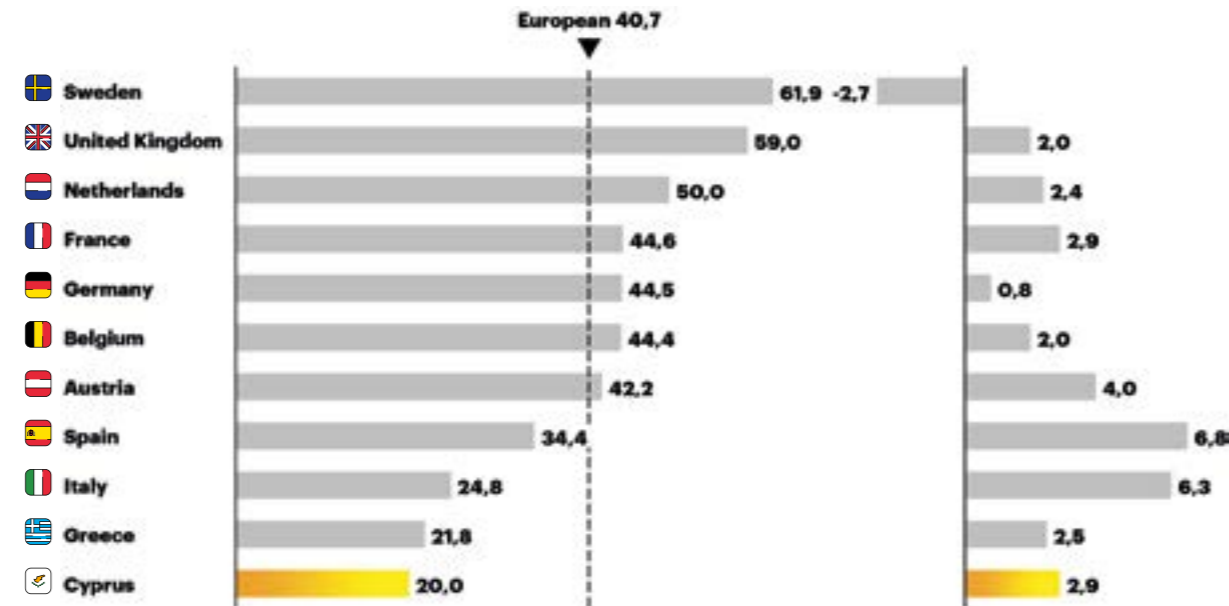


Figure 2.4. The digital economic opportunity index (DEOI) 2018 & evolution 2015 - 2018, European sample (# out of 100)

Digital Accelerators account for the highest contribution towards the Cypriot industry’s overall digital maturity, while Digital Technologies have the lowest contribution. In fact, the Cypriot CRP Industry scores the lowest in Digital Technologies amongst its European peers.

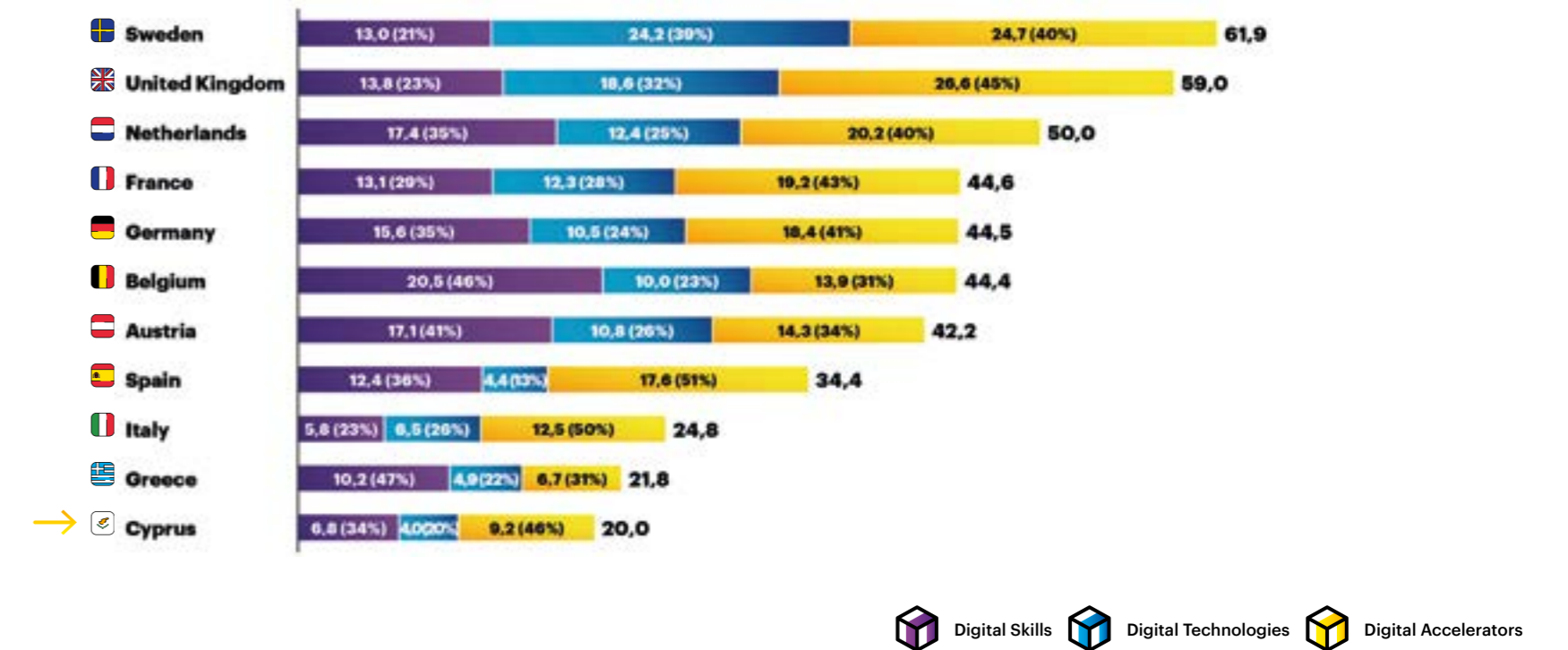


Figure 2.5. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - breakdown per lever

6. The performed analysis and the respective conclusions were based on data recorded through Accenture’s “Digital Capabilities” survey. The survey ran from July 13, 2017 to October 30, 2017 and more than 80 Cypriot organizations across 11 key Cypriot industries participated.

7. *ibid*



For a more in-depth understanding of the key drivers we have further dissected the index into its nine dimensions (see Figure 2.6).

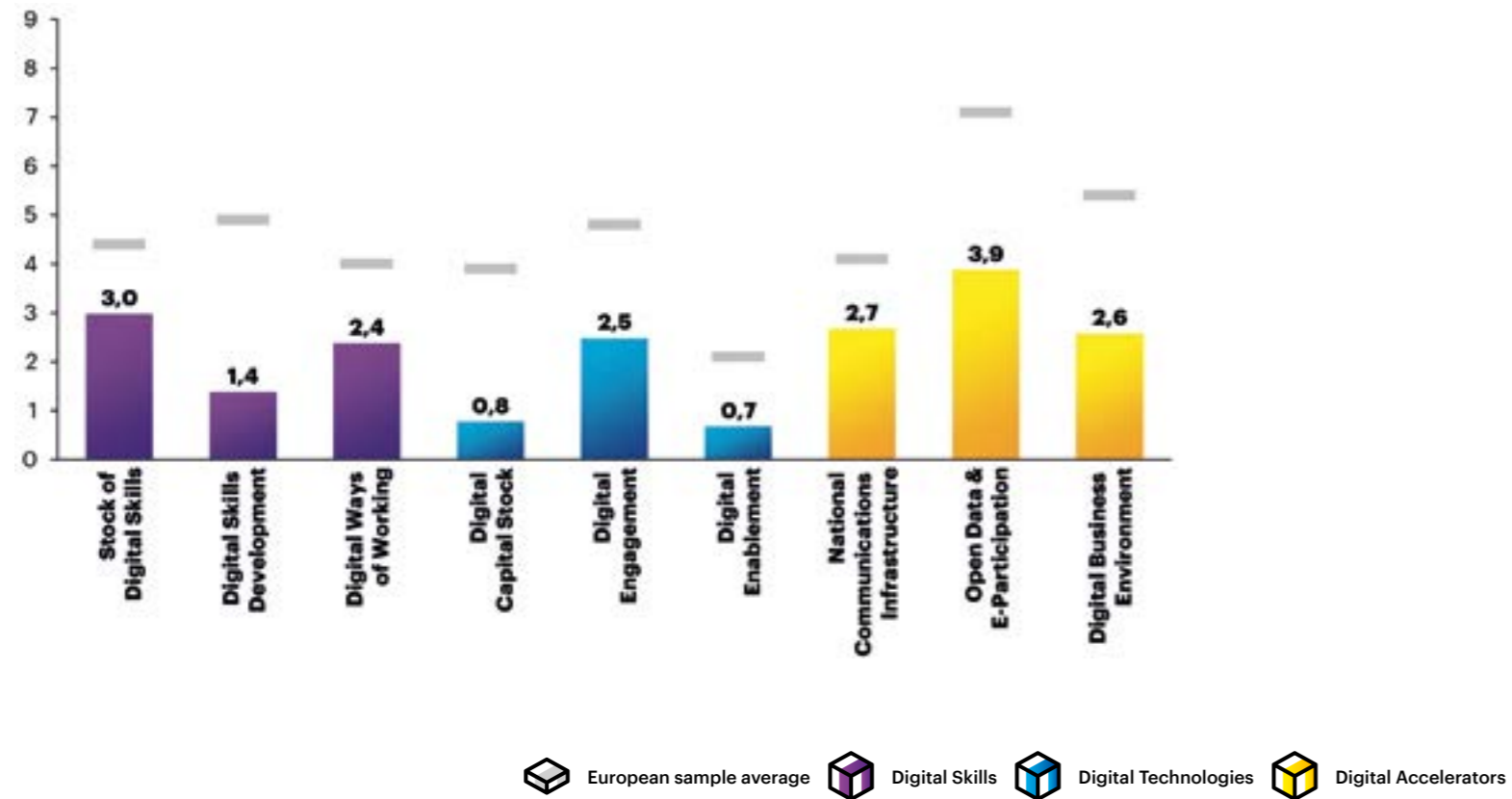
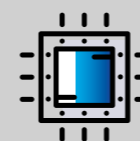


Figure 2.6. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - analysis per dimension



**Digital Skills:** Zooming in on the Digital Skills lever, the Cyprriot CRP industry performs close to its European peers on the “Stock of Digital Skills” dimension but appears far less competent across the “Digital Skills Development” dimension. This reflects a relatively poor commitment to digital training and digital talent recruitment. In addition, it appears that the Cyprriot CRP industry has adopted limited digital practices to facilitate its workforce mobility (i.e. remote access to enterprise IT systems), knowledge sharing, and overall attitude towards innovation, as it scores approximately 1,5 points below its European competitors on the “Digital Ways of Working” dimension. Testament to the industry’s shortcomings in Digital Skills is the fact that only 33 percent of CRP executives consider their company’s workforce to be open in adopting skills that are future proof<sup>8</sup>.



**Digital Technologies:** The Digital Technologies lever appears to require considerable effort to reach a market-competitive level. Our analysis indicates that Cyprriot companies score poorly with regards to “Digital Capital Stock”, exhibiting an inadequacy of investments in hardware and software assets. At the same time, customer engagement and internal company collaboration methods are failing to fully leverage digital tools and capabilities.

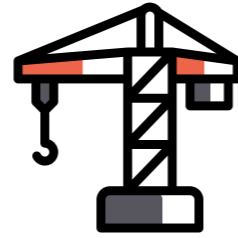


**Digital Accelerators:** Finally, zooming into the Digital Accelerators lever, the Cyprriot CRP industry performs below the European average across all three dimensions. The biggest gap is observed in the “Open Data & E-Participation” dimension, indicating that the Cyprriot Public Administration shall invest more to facilitate the economy’s digitalization through the provision of user-centric, open data fuelled digital services. The higher level of automation with regards to companies’ internal operations appears to be aligned with the vision of more than 80 percent of the interviewed CRP executives, who aim within the next five years to significantly digitize and automate their organizations’ daily operations<sup>10</sup>.

At the same time, our DEOI analysis indicates that the Cyprriot Public Administration shall intensively work towards establishing a more flexible regulatory framework to promote the establishment of a business environment that would support the digitalization of the Cyprriot CRP industry.

8. *ibid*  
9. *ibid*  
10. *ibid*

# “CONSTRUCTION” INDUSTRY



Our analysis of the Construction industry’s digital maturity ranks the Cypriot industry at 30,8 points in 2018, positioning it at the lower end of the maturity index together with Greece and Italy (see Figure 2.7). The need to accelerate the industry’s pace of digital transformation is reflected in our Digital Capabilities Survey, as more than 55 percent of Construction executives attest to the fact that Digital Strategy is not yet part of their organizations’ corporate strategy, while all of them plan to incorporate digital into their corporate strategy within the next five years<sup>11</sup>.

Our digital maturity analysis over the past four years reveals that the Cypriot Construction industry has undertaken a significant digital leap that resulted in an increase of its digital maturity score by 8,7 points. The majority of European countries in our sample have experienced a similar surge in their score, indicating an acceleration in their efforts towards digitalization.

According to the Digital Capabilities Survey, the Cypriot Construction companies seem to have acknowledged the necessity for rapid digitalization and are taking actions in that direction<sup>12</sup>.

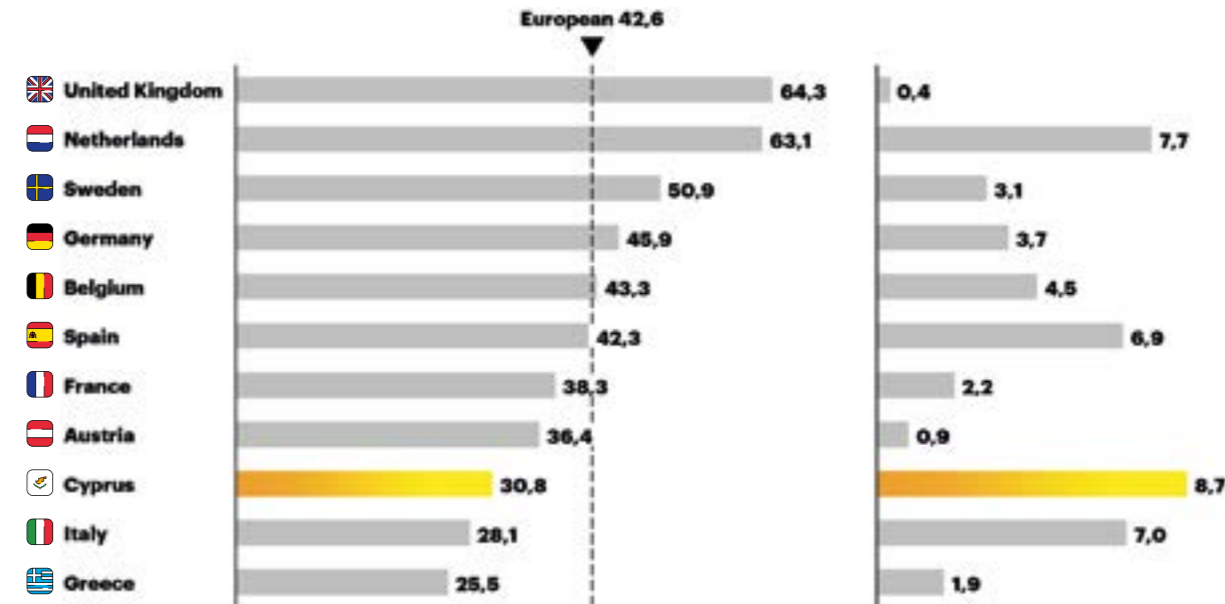


Figure 2.7. The digital economic opportunity index (DEOI) 2018 & evolution 2015 - 2018, European sample (# out of 100)

The breakdown of our data into the three levers that make up the Digital Economic Opportunity Index (Digital Skills, Digital Technologies and Digital Accelerators) exhibits a more granular view for each of the digital levers (see Figure 2.8).

As depicted on the graph, Digital Skills appear to have made the biggest contribution towards the industry’s overall digital maturity (more than 50 percent of the overall maturity), while Digital Technologies contribute the least. It is worth mentioning that the percentage contribution of the Cypriot industry’s Digital Skills lever to the industry’s overall digital maturity is the second highest across our sample. This is counterbalanced by the significantly low percentage contribution of the Digital Technologies lever. In fact, the Cypriot Construction industry has one of the lowest Digital Technologies DEOI scores in our sample, only a couple points higher than its Greek counterpart. The Digital Accelerators lever follows the same pattern as Digital Technologies. Overall, the Cypriot Construction industry has the lowest Digital Accelerators DEOI score in our European sample.

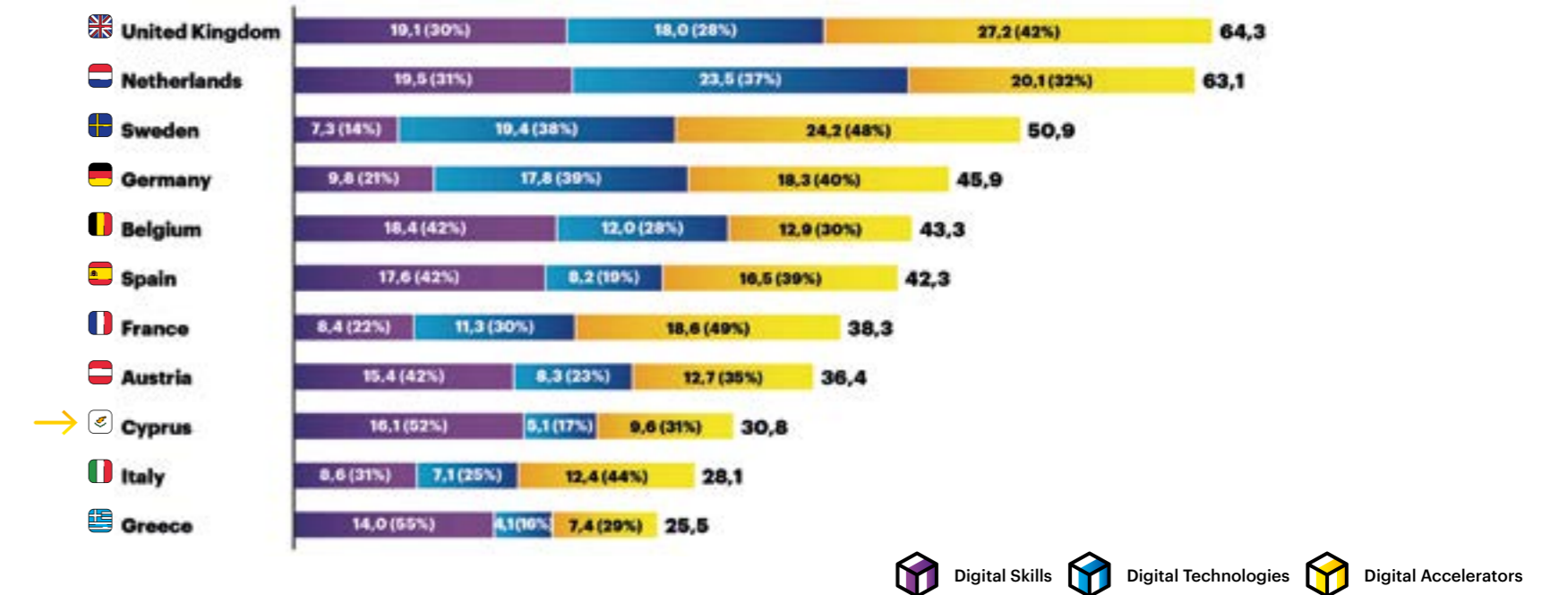


Figure 2.8. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - breakdown per lever

11. The performed analysis and the respective conclusions were based on data recorded through Accenture’s “Digital Capabilities” survey. The survey ran from July 13, 2017 to October 30, 2017 and more than 80 Cypriot organizations across 11 key Cypriot industries participated.  
12. *ibid*



For a more in-depth understanding of the key drivers we have further dissected the index into its nine dimensions (see Figure 2.9).

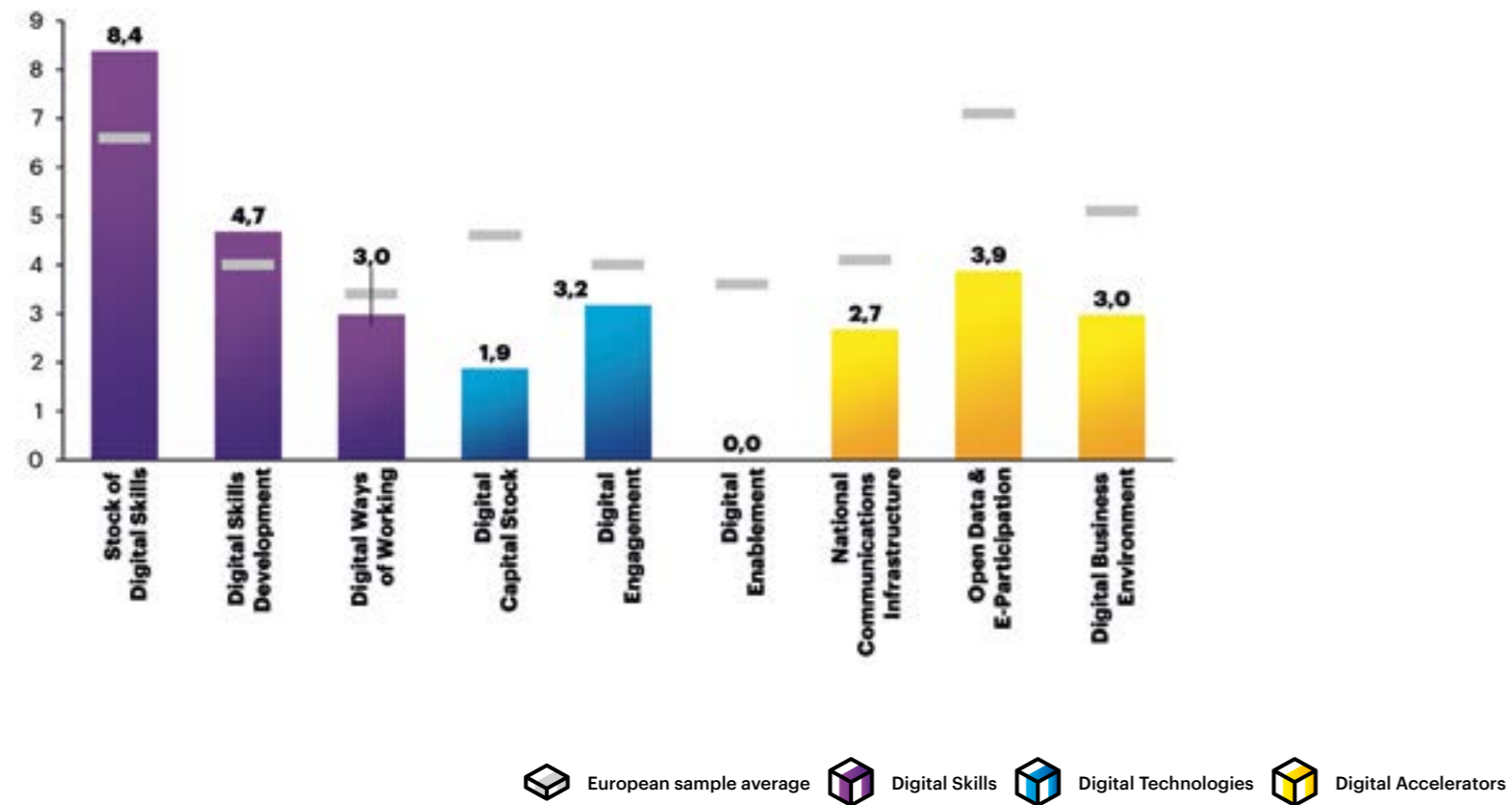
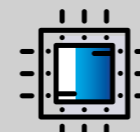


Figure 2.9. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - analysis per dimension



**Digital Skills:** With regards to the Digital Skills lever, the Cypriot Construction industry's score for 2018 is 16,1 points, 2,1 points above the European average. In more detail, the Cypriot Construction industry excels across its "Stock of Digital Skills" dimension, indicating that the Cypriot Construction companies employ a workforce that exhibits relative mastery of digital skills. In terms of investments in digital training and development, the Cypriot industry currently performs above its European peers.

On the other hand, the industry seems to slightly lag behind its European peers with regards to the adoption of digital practices to enhance workforce mobility (i.e. remote access to enterprise's IT systems). This brings them marginally below the sample's average score across the "Digital Ways of Working" dimension. In order to further enforce the industry's positive Digital Skills record, the surveyed Construction executives seem determined to continue upskilling their workforce. Testament to this stands the fact that more than 57 percent of the interviewed executives aim to build an actionable 5-year plan within their organizations with regards to the digital skills required for their companies<sup>13</sup>.



**Digital Technologies:** In contrast to the Cypriot Construction industry's high performance across the Digital Skills, its Digital Technologies lever presents significant room for improvement. Our DEOI data indicates that Cypriot Construction companies have yet to make significant investments with regards to their ICT hardware and software stock. This contributes to the industry's low score across the "Digital Capital Stock" dimension, measurably behind the sample's average maturity.

The industry's low score on the Digital Capital Stock dimension appears to resonate with the opinion of our interviewed executives. 45 percent of them believe that their organization's existing applications and infrastructure platforms do not currently support their organization's operating model. In addition, the questioned executives are aware that the implementation of digital technologies can significantly increase efficiencies and offer a meaningful competitive edge. For this reason, more than 70 percent aim to adopt new digital technologies and to automate internal operations and services. Realizing also that data has become their organization's "lifeblood", 57 percent of them aim to adopt data analytics solutions<sup>14</sup>.



**Digital Accelerators:** Our analysis of the Digital Accelerators lever reveals that Cyprus's Construction industry significantly lags behind its peers. In fact, the industry performs below the European average across all three dimensions. The widest gap is observed across the "Open Data and E-Participation" dimension.

13. *ibid*  
14. *ibid*

# “NATURAL RESOURCES” INDUSTRY



Zooming into the Natural Resources industry, our DEOI analysis reveals that Cyprus ranks last on the European ladder, scoring 23 points (see Figure 2.10). This score situates Cyprus more than 21 points below the European average. At the other end of the maturity spectrum, the UK Natural Resources industry appears to be the most digitally mature (with a score of 62,9 points) recorded. Paradoxically, despite the industry’s low digital maturity, 80 percent of Cypriot industry executives that participated in the “Digital Capabilities” survey, consider their organizations to perform on or above par within the global market<sup>15</sup>.

This being said, the Cypriot Natural Resources industry demonstrated a significant boost over the past four years (increase by 7,1 points). Nevertheless, European peers such as Spain and the Netherlands continued to progress at a faster pace, making it difficult for Cyprus to catch-up. The overall increase of the Cypriot industry’s digital maturity indicates that Cypriot companies of the industry are on the right track.

The surveyed industry executives appear to embrace the need to accelerate their organizations’ digital transformation, as 70 percent of them state that their organizations have already embedded digital into their corporate strategy. In parallel 72 percent of them aim to implement an actionable digital roadmap that will ensure the coordinated digitalization of their organizations in the next five years<sup>16</sup>.

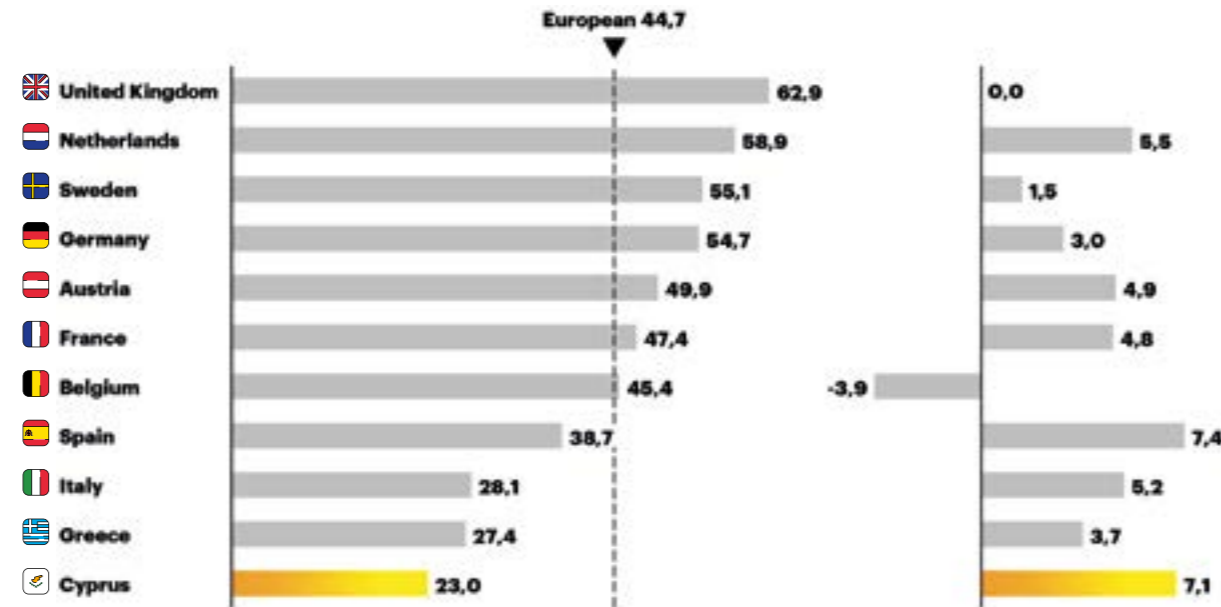


Figure 2.10. The digital economic opportunity index (DEOI) 2018 & evolution 2015 - 2018, European sample (# out of 100)

The breakdown of the Natural Resources industry’s score into the three levers that make up the digital maturity Index (Digital Skills, Digital Technologies and Digital Accelerators) allows for a more detailed understanding of the industry’s overall digital maturity (see Figure 2.11).

Our data indicates that the Digital Skills and Digital Accelerators levers are the primary contributors towards the Cypriot industry’s overall digital maturity (with 39 percent and 40 percent contribution to the overall maturity respectively). Conversely, the Digital Technologies lever demonstrates a much lower contribution. More specifically, Digital Technologies contribute 21 percent to the digital maturity score. This indicates that there is significant room for additional investments on enabling digital technologies to bridge the gap between the Cypriot Natural Resources industry and top European performers.

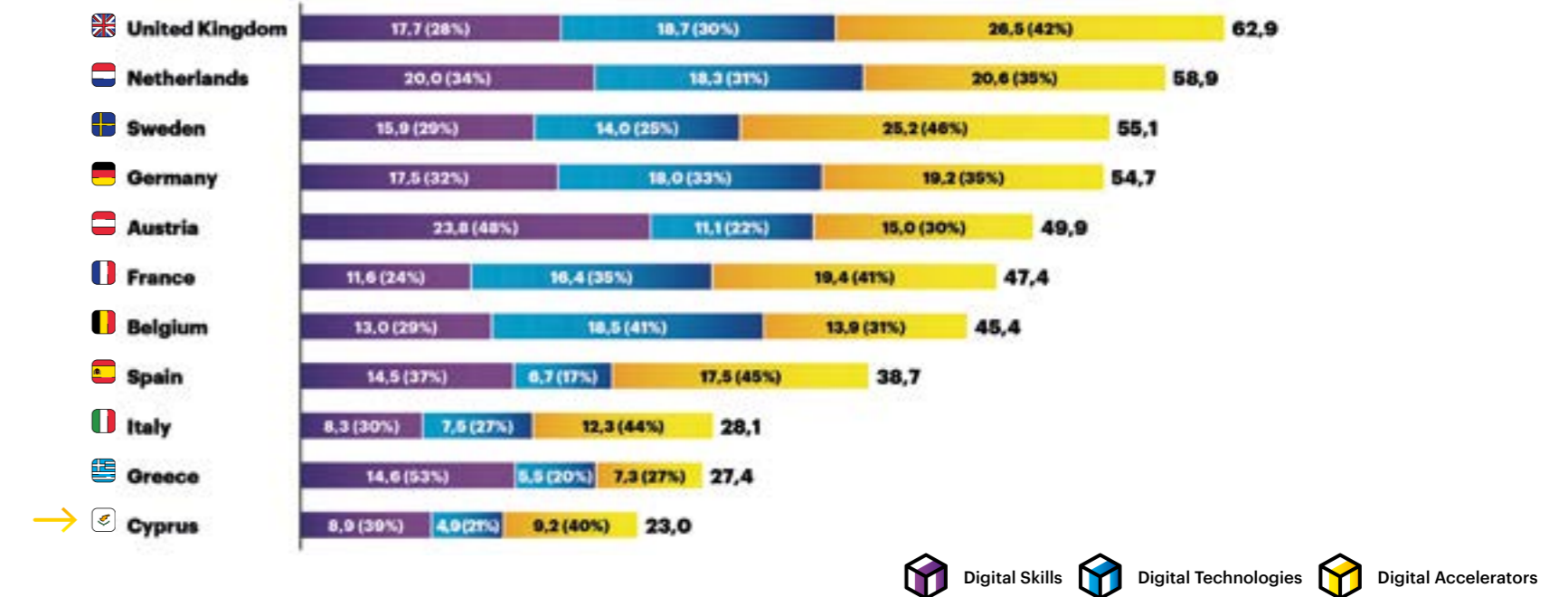


Figure 2.11. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - breakdown per lever

15. The performed analysis and the respective conclusions were based on data recorded through Accenture’s “Digital Capabilities” survey. The survey ran from July 13, 2017 to October 30, 2017 and more than 80 Cypriot organizations across 11 key Cypriot industries participated.  
16. *ibid*

For a more in-depth understanding of the key drivers we have further dissected the index into its nine dimensions (see Figure 2.12).

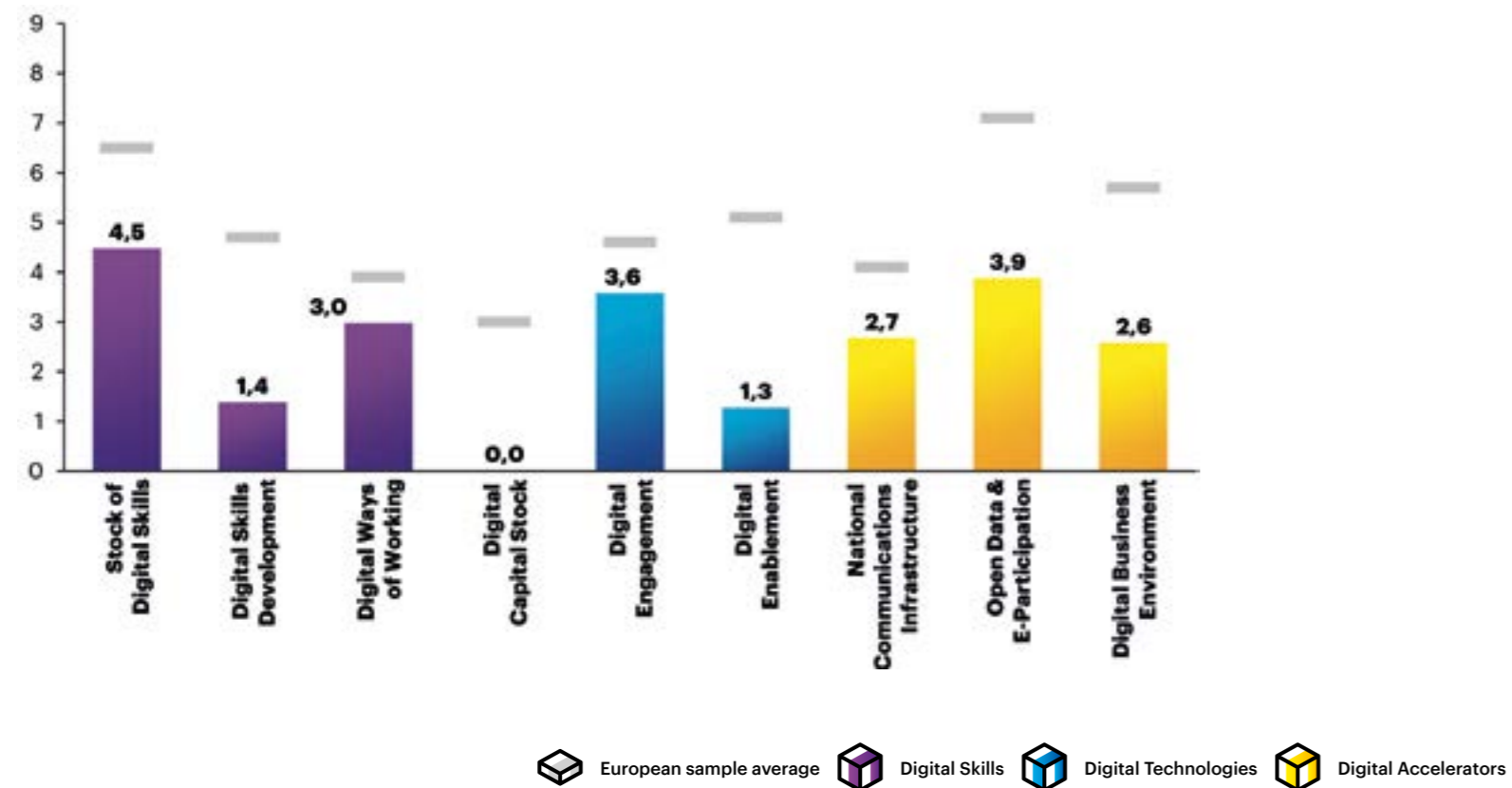
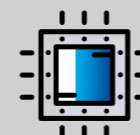


Figure 2.12. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - analysis per dimension



**Digital Skills:** The Cypriot Natural Resources industry scores behind its European peers across all three dimensions of the Digital Skills lever. In more detail, the “Stock of Digital Skills” dimension scores marginally below the European average and contributes the most to the Digital Skills lever. The “Digital Skills Development” dimension also scores below average and demonstrates the highest deviation from the European average.

This signals that Cypriot Natural Resources companies need to further invest in the development of the digital skills for their workforce. In fact, more than 90 percent of the surveyed industry executives recognize that their organizations currently lack a holistic plan regarding their workforce’s digital upskilling and reskilling. In addition, 71 percent of them state that they have only partially identified the key competencies required for their organizations’ transformation<sup>17</sup>. Furthermore, the Cypriot Natural Resources companies appear to have made limited investments with regards to their internal digital capabilities to enable workforce mobility (i.e. embedded policies for using digital conferencing instead of physical travel, digital collaboration, etc.), bringing the industry’s “Digital Ways of Working” score below the European average.



**Digital Technologies:** As indicated by our DEOI analysis, the Cypriot Natural Resources industry has thus far made limited investments across its Digital Technologies lever, leaving the Cypriot industry behind its international competition. This is in conflict with the perception of the surveyed industry executives, 85 percent of whom consider their organizations’ current technology capabilities fairly satisfying.

The Cypriot industry appears to perform better across its “Digital Engagement” dimension. The surveyed Cypriot industry executives appear to agree with the DEOI findings, since 57 percent of them state that their organizations already maintain a holistic profile of their customers and they are capable to generate insights based on customer data. Finally, the Cypriot Natural Resources organizations have yet to explore the value that enabling technologies can create, as is exemplified by the industry’s poor performance under the “Digital Enablement” dimension. In fact, the surveyed executives realize the need to explore use cases of enabling technologies, such as the Internet of Things and Big Data Analytics; however, more than 70 percent of those surveyed seriously doubt their organizations’ ability for digital technologies adoption<sup>18</sup>.



**Digital Accelerators:** With regards to the Digital Accelerators lever, the Cypriot industry performs below the European average across all three dimensions. The widest gap is observed across the “Open-Data & E-Participation” and the “Digital Business Environment” dimensions, indicating that the Cypriot Public Administration shall focus its activities on designing and implementing new digital public services.

17. *ibid*  
18. *ibid*



# “UTILITIES” INDUSTRY



Our analysis of the Cypriot Utilities industry’s digital maturity for 2018 ranks the industry at 25,1 points. This is at the rear end of the digital maturity curve<sup>19</sup>. The Cypriot industry’s a digital maturity score is more than 15 points lower than that of the European average and more than 35 points apart from the United Kingdom and the Netherlands, which are the top performers in our sample (see Figure 2.13).

The overall picture is more alarming if we examine the evolution of our sample’s digital maturity scores over the last four years (2015 - 2018). Contrary to the notable increase that most European Utilities industries have demonstrated with regards to their digital transformation, the Cypriot Utilities industry has not followed the same pattern. As a matter of fact, it has undergone a limited increase of 0,4 points in its maturity over the last years.

At the other end of the spectrum we find the Spanish Utilities industry that has recorded a digital leap during the last years, increasing its maturity by 6,1 points. This demonstrates that the Spanish Utilities companies have made significant effort in adjusting to the “fast lane” of digital rotation.

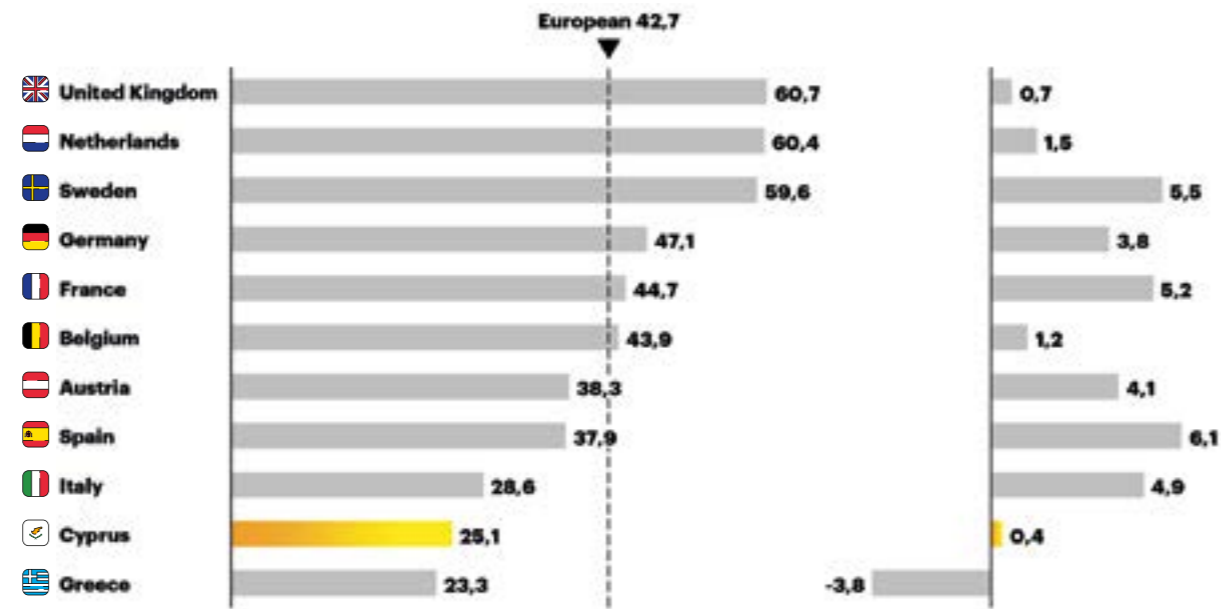


Figure 2.13. The digital economic opportunity index (DEOI) 2018 & evolution 2015 - 2018, European sample (# out of 100)

19. No “Digital Capabilities” results are available for the Cypriot Utilities industry, due to Utilities companies’ limited participation in the survey (only one completed questionnaire was received).

The breakdown into the three levers that make up the Digital Economic Opportunity Index, namely, digital skills, digital technologies and digital accelerators allows for a more detailed understanding of each lever’s contribution to the industry’s overall digital maturity (see Figure 2.14).

Our analysis indicates that the Cypriot Utilities industry scores low across all three digital levers. More specifically, the Cypriot industry holds the third to last position amongst 11 industries with regards to its Digital Skills maturity. In addition, it scores last across its Digital Technologies lever and second to last across its Digital Accelerators lever.

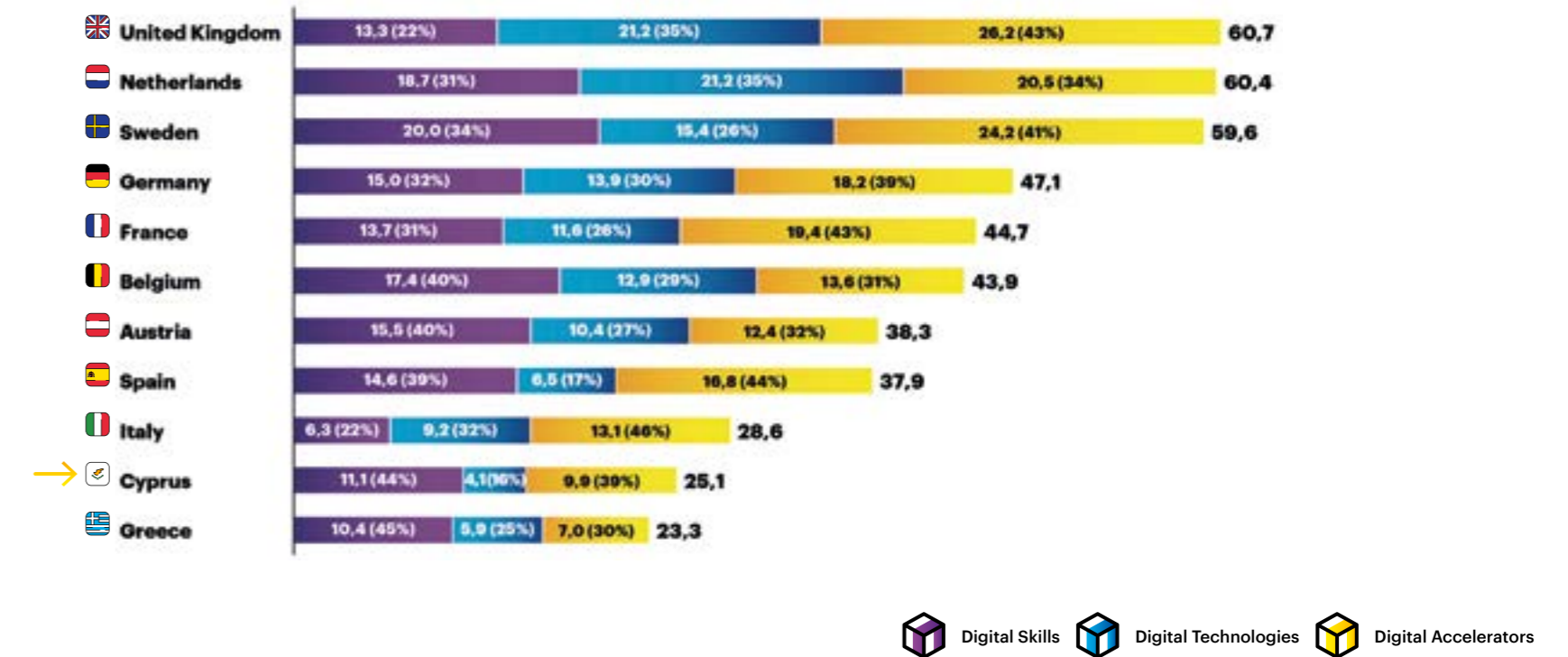


Figure 2.14. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - breakdown per lever

For a more in-depth understanding of the key drivers we have further dissected the index into its nine dimensions (see Figure 2.15).

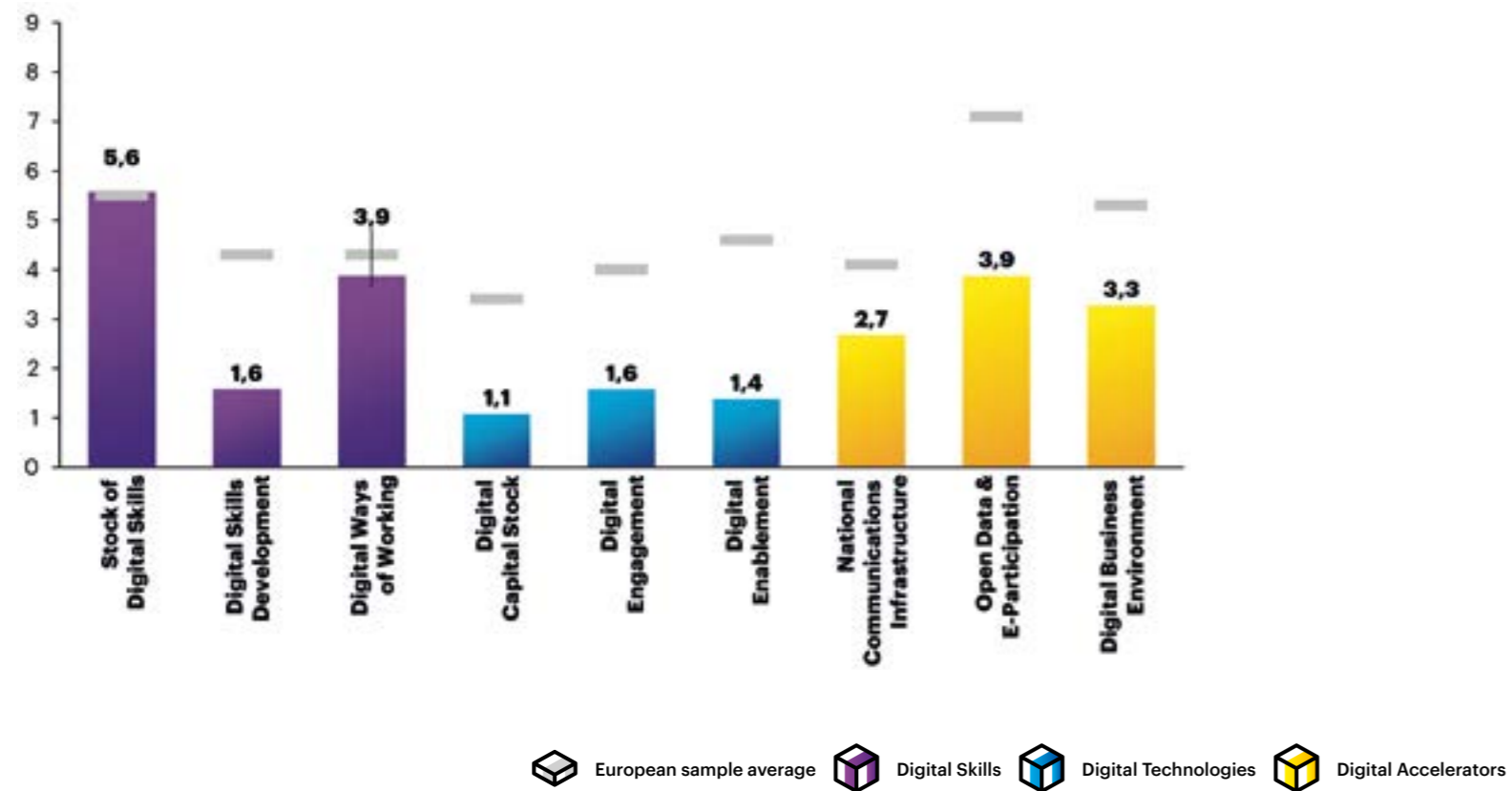
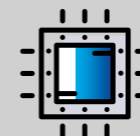


Figure 2.15. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - analysis per dimension



**Digital Skills:** As also observed at an aggregate level, the Cypriot Utilities industry performs significantly better across their Digital Skills lever. More specifically, the industry scores close to the European average across the “Stock of Digital Skills” and “Digital Ways of Working” dimensions. However, the industry’s performance is not the same under the “Digital Skills Development” dimension, indicating that Cypriot Utilities companies demonstrate low commitment to their workforce’s ICT training and place limited emphasis on the recruitment of talent with digital skills for their organizations.



**Digital Technologies:** Cyprus’s low score across the Digital Technologies lever suggests that although Cypriot companies have made moderate digital investments, there is significant room for improvement, especially under the “Digital Capital Stock” dimension. At the same time, the low-scoring “Digital Engagement” and “Digital Enablement” pillars suggest that Cypriot Utilities companies have yet to adopt enabling technologies like Internet of Things, cloud computing and big data analytics to transform their organizations, increase efficiency and provide data-driven insights that will enable management decisions.



**Digital Accelerators:** Finally, with regards to the Digital Accelerators lever, the Cypriot industry performs below the European average across its three dimensions. It is evident that Cypriot Utilities companies lag behind their European peers, which suggests that the market conditions and business environment impose structural inhibitors.

# 2.2 THE “CUSTOMER - CENTRIC” INDUSTRIES

## “CONSUMER GOODS” INDUSTRY



Our analysis of the Consumer Goods industry’s digital maturity for 2018 reveals that Cypriot companies score last amongst their European peers. The Cypriot industry, with an overall digital maturity score of 23,5 points, is positioned approximately 20 points below the European average (see Figure 2.16). As also noted in other industries, this comes in full contradiction with the perception of the interviewed Cypriot Consumer Goods executives. More than 65 percent of them believe that their organizations’ digital capabilities are currently on par with those of their international competitors<sup>20</sup>.

Despite its low position, our cross-country digital analysis (2015-2018) shows that the Cypriot industry recorded the largest increase with regards to its digital maturity over the past four years. This increase indicates that Cypriot Consumer Goods executives have indeed acknowledged the necessity for rapid digitalization. The manifested rotation to digital is in line with the Cypriot executives’ stated opinions. As a matter of fact, 83 percent of them deem digital of paramount importance for their organizations’ future growth and currently adopt digital capabilities in order to make their organizations adaptable to digital disruption and new customer needs and demands<sup>21</sup>.

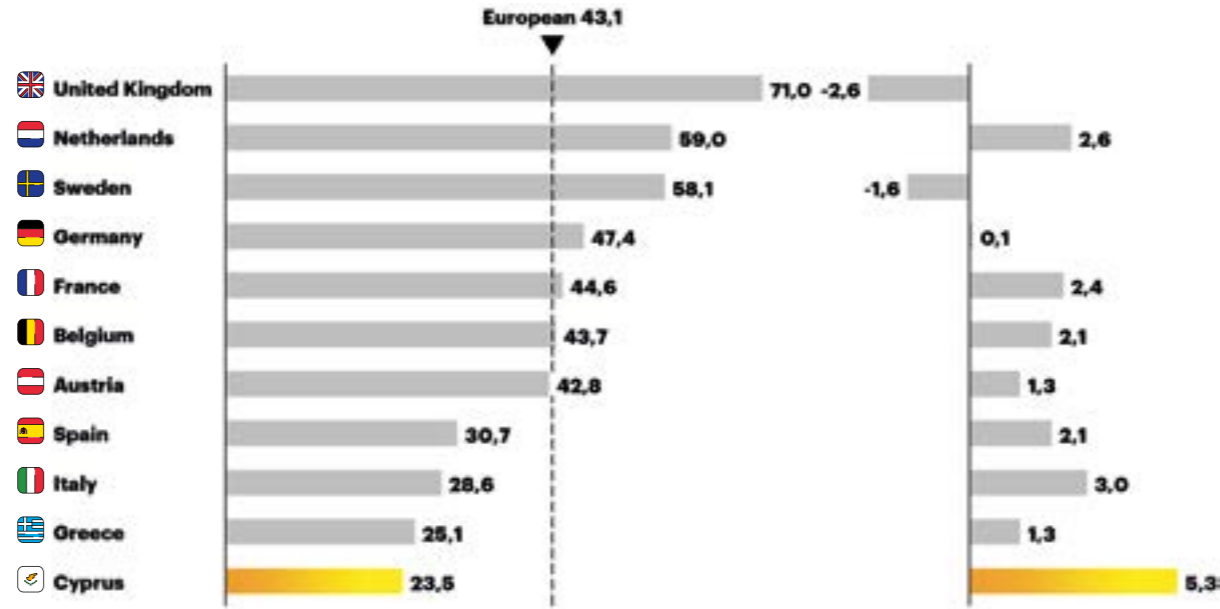


Figure 2.16. The digital economic opportunity index (DEOI) 2018 & evolution 2015 - 2018, European sample (# out of 100)

The breakdown of our data into the three levers that make up the Digital Economic Opportunity Index, (Digital Skills, Digital Technologies and Digital Accelerators) allows for a more detailed understanding of each lever’s contribution to the industry’s overall digital maturity (see Figure 2.17).

The Cypriot Consumer Goods industry scores near the bottom end of our sample across all three levers. More specifically, regarding the Digital Skills maturity, the Cypriot industry holds the second to last position. At the same time, the industry ranks last across the Digital Technologies and Digital Accelerators levers. Looking at the contribution of each lever to the Cypriot industry’s overall digital maturity, Digital Skills demonstrate the highest contribution (42 percent) and Digital Technologies the lowest one (18 percent).

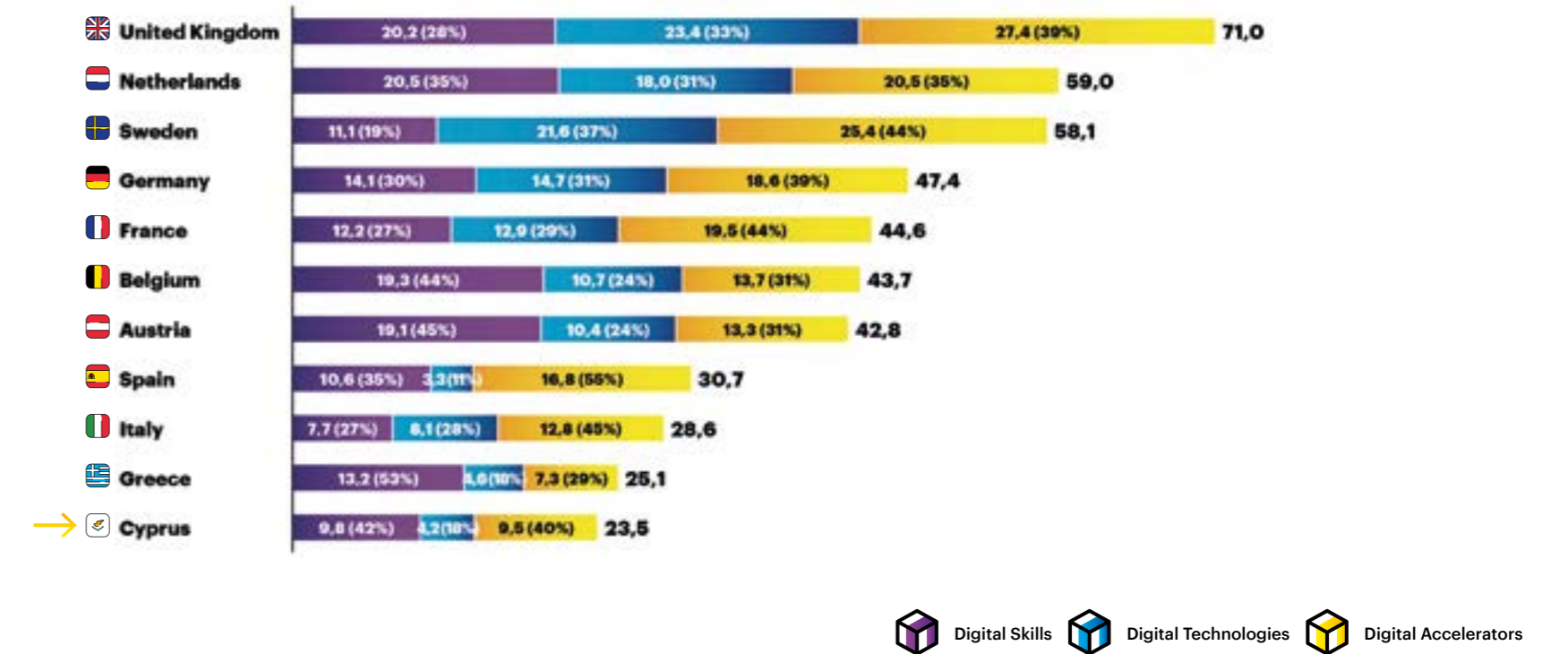


Figure 2.17. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - breakdown per lever

20. The performed analysis and the respective conclusions were based on data recorded through Accenture’s “Digital Capabilities” survey. The survey ran from July 13, 2017 to October 30, 2017 and more than 80 Cypriot organizations across 11 key Cypriot industries participated.  
21. *ibid*



For a more in-depth understanding of the key drivers we have further dissected the index into its nine dimensions (see Figure 2.18).

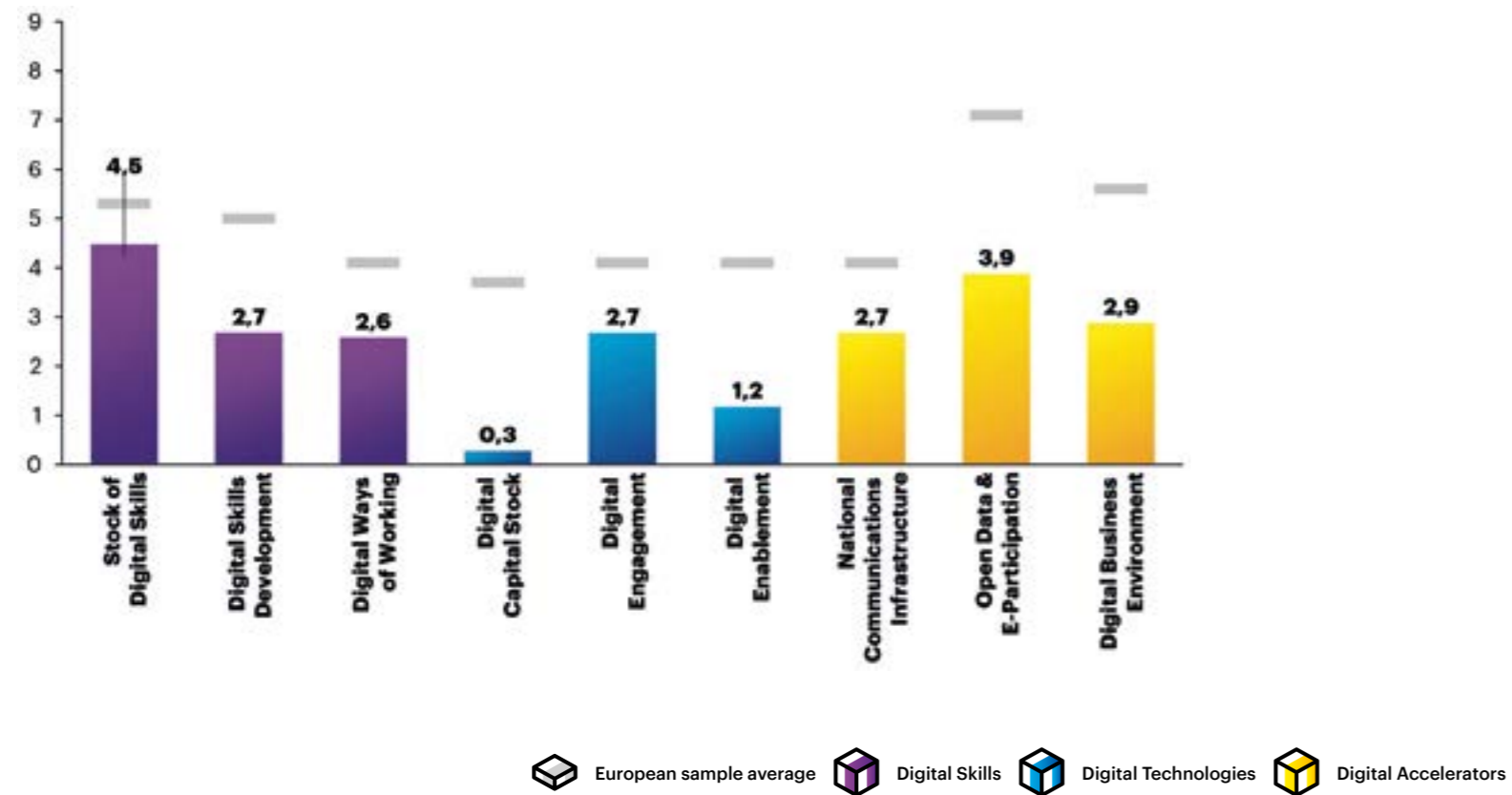
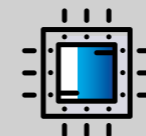


Figure 2.18. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - analysis per dimension



**Digital Skills:** The Cypriot Consumer Goods industry scores second to last across the Digital Skills lever. This score appears to be mainly attributed to the industry’s moderately high performance across the “Stock of Digital Skills” dimension, almost on par with our sample’s average. This denotes the presence of a relatively digital-savvy workforce. However, the industry currently performs below its European peers in terms of its provision of digital skills training and digital talent recruitment (Digital Skills Development score: 2,7 points). As a matter of fact, 83 percent of the interviewed Cypriot Consumer Goods executives realize that their organizations have a limited view with regards to the digital skills that are required. In addition, the “Digital Ways of Working” dimension, which includes factors such as remote working, knowledge sharing and a company’s overall attitude towards innovation, performs below average.



**Digital Technologies:** With regards to the Digital Technologies lever, the Cypriot Consumer Goods industry lags significantly behind its European peers. In more detail, our analysis indicates that the Cypriot companies have thus far made limited software and hardware investments. This positions them at the low end of the “Digital Capital Stock” dimension, far behind our sample’s average score. This point is further confirmed by the opinion of more than 80 percent of surveyed executives, who recognize that their organizations’ existing applications and infrastructure cannot fully support their operating model. Moreover, Cypriot organizations demonstrate a low adoption rate of various digital technologies such as IoT, cloud, analytics, scoring approximately 3 points lower than the European sample under the “Digital Enablement” dimension. This appears in line with the stated opinion of the questioned industry executives, where 50 percent considered their organizations not fully prepared to utilize the potential of enabling technologies to improve their internal operations and instigate growth<sup>22</sup>.



**Digital Accelerators:** Finally, the Cypriot Consumer Goods industry appears to lag behind the sample’s average across all underlying dimensions of the Digital Accelerators lever. Our DEOI analysis indicates that the industry’s poor performance can mainly be attributed to the regulatory and business environment.

22. *ibid*

# “RETAIL” INDUSTRY

Shifting our focus on the digital maturity analysis of the Retail industry, we find Cyprus situated at an unfavorable position on the digital maturity curve along with its Greek and Italian counterparts. The Cypriot industry, scoring 30,6 points in 2018, is positioned more than 15 points below the European average and almost 40 points away from the United Kingdom, the top performer of our sample (see Figure 2.19). Despite the industry’s low digital maturity, more than 70 percent of the surveyed Cypriot Retail industry executives see their organizations to have already embraced the required digital capabilities and are perceived to perform on par with their international counterparts<sup>23</sup>.

Analyzing the evolution of the industry’s digital performance over the period 2015-2018, we observe that during the past years, Cypriot Retail companies’ maturity has notably increased by 3,8 points. This evolution appears in line with most of its European peers, whose respective progress during the same period has improved significantly. Cyprus’s increase suggests that the Retail industry has already acknowledged the necessity for digitalization and has undertaken initiatives towards this direction. However, further action is necessary to ensure that the industry catches up with its top performing European peers. This need is further highlighted by the surveyed industry executives. In fact, within the next five years, 78 percent of them aim to implement a multi-year action plan to enable their digital transformation, while more than 90 percent of them plan to create a formal governance framework to manage their rotation to digital and accelerate growth<sup>24</sup>.

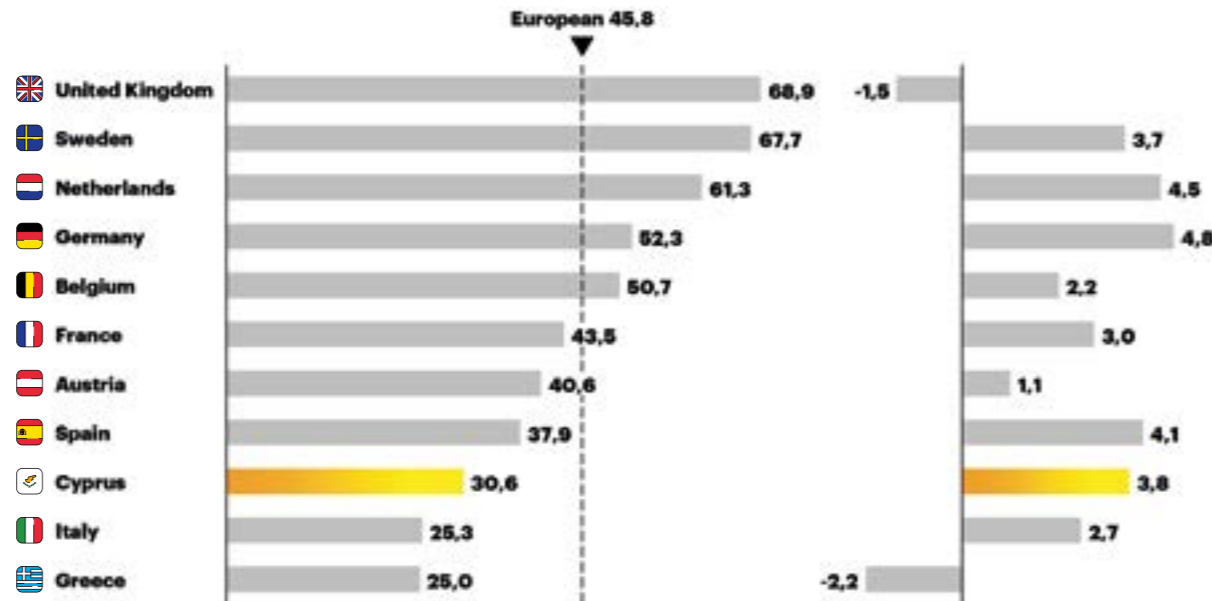


Figure 2.19. The digital economic opportunity index (DEOI) 2018 & evolution 2015 - 2018, European sample (# out of 100)

The breakdown of the industry’s score into the three levers that make up the Digital Economic Opportunity Index, namely, Digital Skills, Digital Technologies and Digital Accelerators surfaces a more detailed picture for the industry’s digital maturity (see Figure 2.20).

Similarly to other industries, Digital Skills appear to have the highest contribution towards the Cypriot industry’s overall digital maturity (approximately 40 percent of the industry’s overall maturity). On the other hand, Digital Technologies have the least impact, with a minor contribution of 26 percent to the industry’s total score. Digital Accelerators also appear to have a limited contribution to the overall digital maturity of the Cypriot Retail industry, indicating that the environment, in which the Cypriot retail companies operate, does not significantly help the industry.

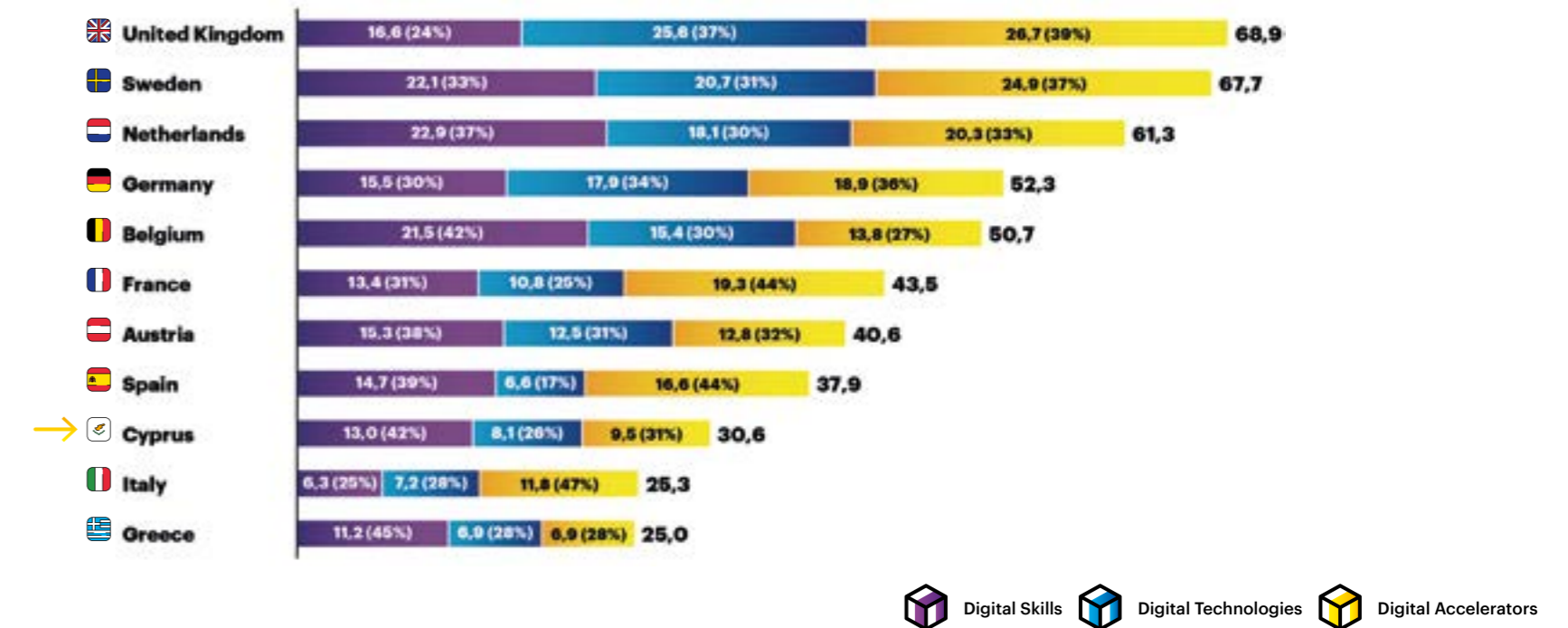


Figure 2.20. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - breakdown per lever

23. The performed analysis and the respective conclusions were based on data recorded through Accenture’s “Digital Capabilities” survey. The survey ran from July 13, 2017 to October 30, 2017 and more than 80 Cypriot organizations across 11 key Cypriot industries participated.  
24. *ibid*

For a more in-depth understanding of the key drivers we have further dissected the index into its nine dimensions (see Figure 2.21).

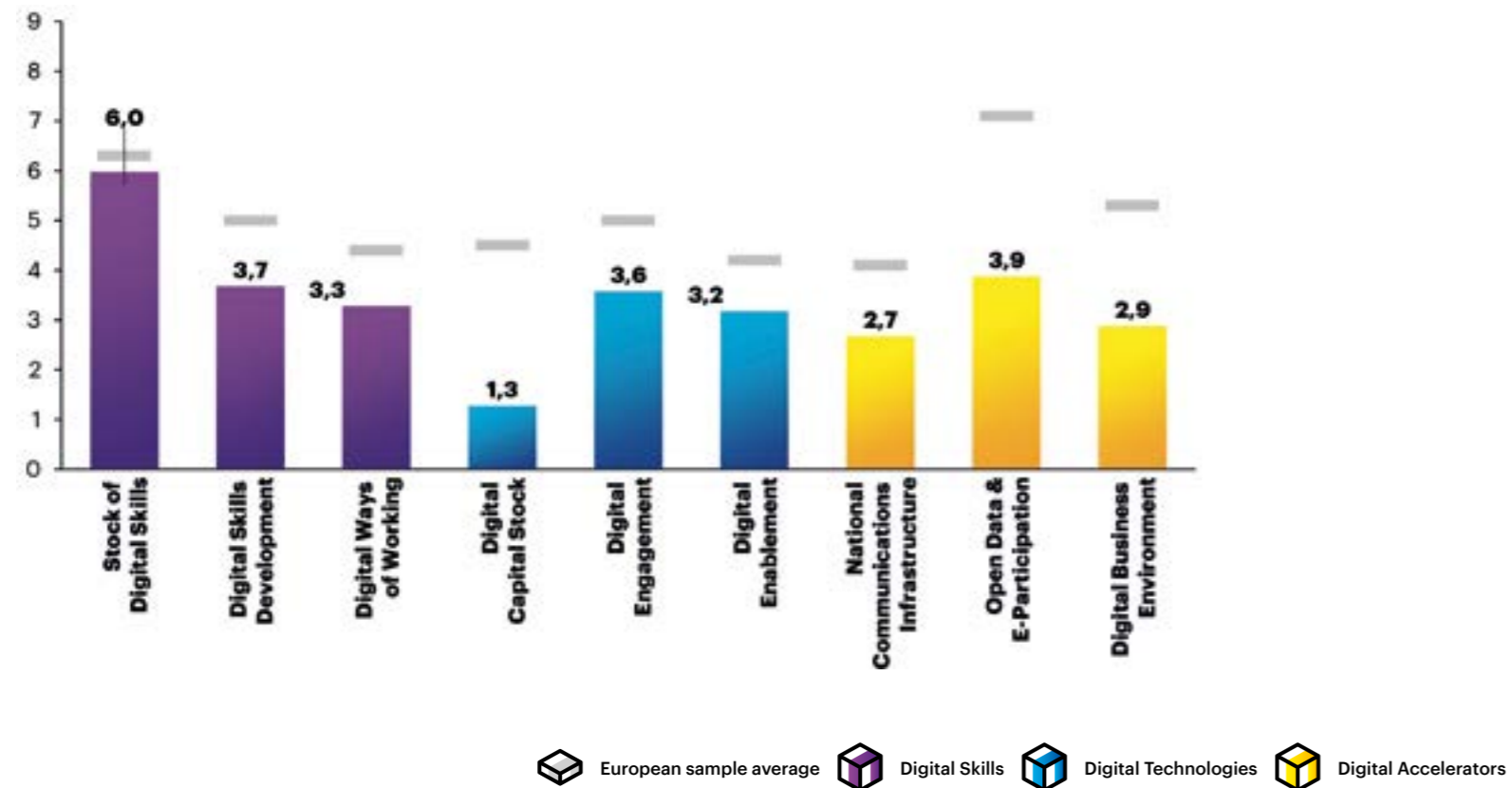
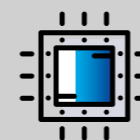


Figure 2.21. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - analysis per dimension



**Digital Skills:** The Digital Skills lever significantly contributes to the overall digital maturity of the Cypriot Retail industry. Major driver behind this score is the “Stock of Digital Skills” dimension that performs almost on par with the European average. This indicates that Cypriot Retail companies have already in place a digitally-literate and competent workforce that is competitive against its European counterparts. In fact, 50 percent of the surveyed Cypriot executives consider their workforce to be prepared to adopt next generation digital skills. Furthermore all of them plan to further invest in digital expertise and recruit new analytics talent within the next five years<sup>25</sup>.

Regarding investments in digital training and development, the Cypriot Retail industry performs below the European average. However, Cypriot executives foresee that their organizations will be able to cover the Digital Skills gap within the next 5 years by either upskilling their existing workforce or by recruiting specialized talent.



**Digital Technologies:** With respect to the industry’s exhibited performance across the Digital Technologies lever, Cypriot Retail companies have yet to make significant investments in ICT hardware and software stock. This setback contributes to the industry’s significantly low score across the “Digital Capital Stock” dimension, approximately 3 points below the European average. Recognizing this impediment, all surveyed Cypriot executives believe that their organizations should redesign their back-end systems as a means of enabling the digital transformation<sup>26</sup>.

On the other hand, Cypriot Retailers have started to exploit digital channels. This effort has positioned the Cypriot Retail industry close to the industry sample’s average score. The surveyed industry executives appear to be more ambitious. In more detail, more than 60 percent of them recognize that their organizations demonstrate significant room for improvement with regards to the digitalization of their sales channels and the type of services they will provide to their customers.

The “Digital Enablement” dimension appears to follow a similar pattern with the “Digital Engagement” dimension. indicating that Cypriot Retail companies have already begun to experiment with digital technologies. However, additional efforts are required to be made in this area, since more than 75 percent of the surveyed sample considers that their organizations face difficulties to successfully implement the new technologies<sup>27</sup>.



**Digital Accelerators:** Finally, the Cypriot Retail industry appears to trail behind its European peers across every dimension of the Digital Accelerators lever. Further analysis indicates that the industry’s poor performance can be mainly attributed to a less favorable regulatory and business environment. In addition, the limited degree of digitalization of public services acts also as an inhibitor.

25. *ibid*  
26. *ibid*  
27. *ibid*

# “TOURISM” INDUSTRY

Our DEOI analysis with regards to the Tourism industry’s digital maturity, ranks the Cypriot industry at the lower end on the maturity curve amongst its European peers. In fact, at 28,4 points, the Cypriot industry lags 10,7 points behind the European average score (see Figure 2.22). Despite the industry’s moderate maturity, more than 70 percent of the Cypriot Tourism executives that participated in our “Digital Capabilities” survey, perceive their organizations currently to perform on par with their international competition<sup>28</sup>.

Looking at the evolution of the Cypriot Tourism industry’s digital maturity over the last years, it is evident that the industry has accelerated its efforts towards digitalization and has gained momentum since 2015. This is manifested by the increase of 2,7 points of the Cypriot industry’s DEOI score over the past four years. This progress is also confirmed by the interviewed Cypriot Tourist executives, who state their intent to further accelerate the digital transformation and adopt a holistic plan to manage this<sup>29</sup>.

It is worth mentioning that most of digitally mature countries (i.e. Sweden, UK, the Netherlands) continue to pace upwards with regards to their rotation to digital, whereas the less mature (i.e. Belgium, Greece) have yet to gain momentum towards their digital transformation.

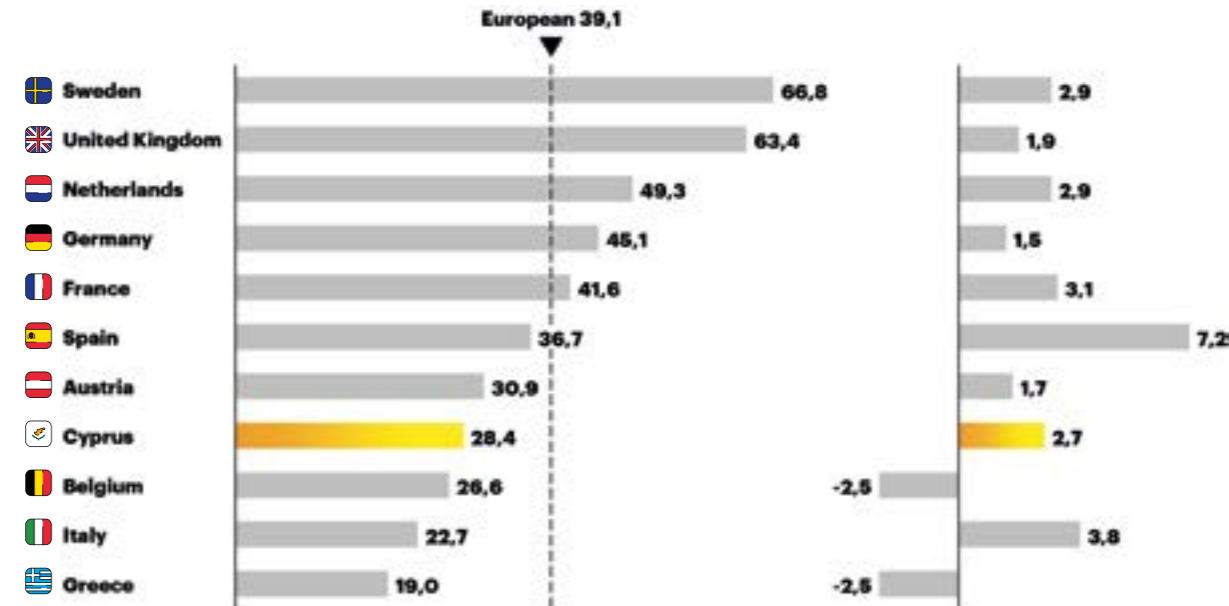


Figure 2.22. The digital economic opportunity index (DEOI) 2018 & evolution 2015 - 2018, European sample (# out of 100)

The dissection of the industry’s maturity score into the three levers, namely, Digital Skills, Digital Technologies and Digital Accelerators surfaces a more detailed picture of industry’s overall digital maturity (see Figure 2.23).

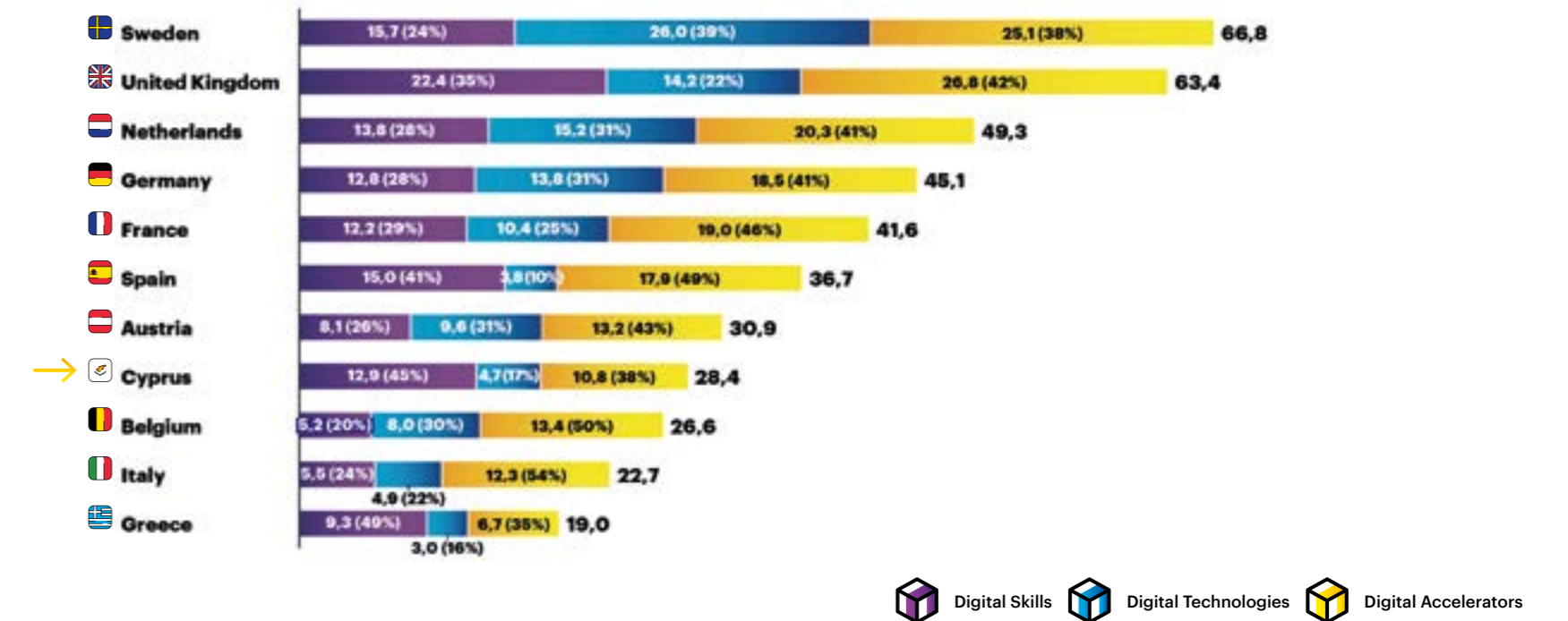


Figure 2.23. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - breakdown per lever

28. The performed analysis and the respective conclusions were based on data recorded through Accenture’s “Digital Capabilities” survey. The survey ran from July 13, 2017 to October 30, 2017 and more than 80 Cypriot organizations across 11 key Cypriot industries participated.  
29. *ibid*



For a more in-depth understanding of the key drivers we have further dissected the index into its nine dimensions (see Figure 2.24).

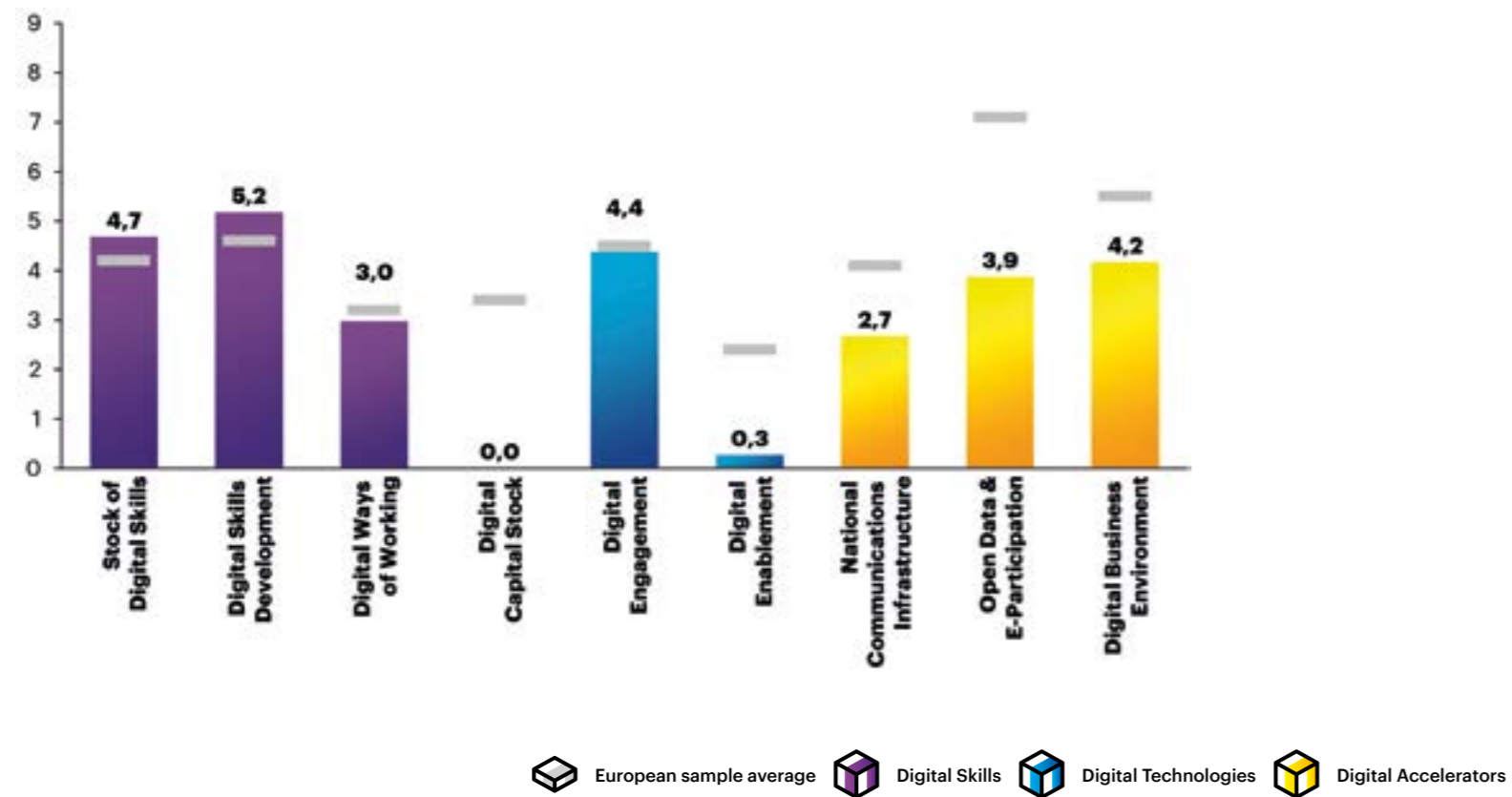
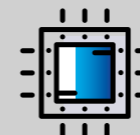


Figure 2.24. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - analysis per dimension



**Digital Skills:** At an aggregate level, the Cypriot Tourism industry performs on par with European peers across the Digital Skills lever. Cypriot Tourism companies appear to be relatively strong under the “Stock of Digital Skills” dimension, most likely because their workforce consists of more digital-savvy workers, with digital skills and comparable capabilities to those of their European counterparts. As a matter of fact, according to the “Digital Capabilities” survey, 71 percent of industry executives perceive that their organizations are well-equipped with a workforce capable to embrace the “New”. Moreover, Cypriot companies perform on par with the European average in terms of the “Digital Skills Development” and the “Digital Ways of Working” dimensions. This suggests that investments in digital training and the adoption of digital tools and technologies have started to surface results. As a matter of fact, 57 percent of the Cypriot Tourism executives that participated in our “Digital Capabilities” survey have stated that during the next five years they aim to implement a structured, company-wide plan to further equip their workforce with the necessary digital skills to drive the digitalization agenda<sup>30</sup>.



**Digital Technologies:** While Cypriot companies perform on par with the European average with regards to their Digital Skills, they seem to be less competitive on the adoption of Digital Technologies. In more detail, when compared to their peers, Cypriot Tourism companies have thus far made limited investments with regards to hardware and software assets. Moreover, the DEOI analysis indicates that the Cypriot Tourism industry has yet to adopt and deploy at scale new, enabling, digital technologies such as IoT, cloud and analytics. These results bring the Cypriot industry’s score across the “Digital Enablement” dimension far below our sample’s average. Such finding is in direct contradiction to the perception of the majority of surveyed executives. According to their view, existing digital infrastructures and applications suffice to meet digital requirements<sup>31</sup>.



**Digital Accelerators:** On the Digital Accelerators lever, the Cypriot Tourism industry performs below the European average across all three dimensions. The analysis of the underlying dimensions suggests that the Cypriot industry’s underperformance is mainly influenced by structural inhibitors that decelerate digital transformation and contribute to the industry’s low maturity score on the “Open Data & E-Participation” dimension. The Cypriot Public Administration shall accelerate its efforts to foster a digital business environment that will support innovation within the Tourism industry, enable the use of Open Data and facilitate the creation of new ecosystems. According to our “Digital Capabilities” survey, instigating innovation appears to be a top priority for the Tourism executives within the next five years<sup>32</sup>.

30. *ibid*  
31. *ibid*  
32. *ibid*

## 2.3 THE DIGITAL “MULTIPLIERS”

### “BUSINESS SERVICES & TECHNOLOGY” INDUSTRY



Our analysis of the Cypriot Business Services & Technology industry’s digital maturity reveals that Cypriot companies score near the bottom against their European peers in 2018. With a score of 34,6 points, Cyprus finds itself approximately 12 points below the European average (see Figure 2.25). This comes in contrast to the perception of the surveyed Cypriot executives, 75 percent of whom believe that their organizations perform above par regarding their digital readiness<sup>33</sup>.

If we examine the evolution of the Cypriot industry’s digital maturity over the last four years, it is evident that the industry has significantly accelerated its digital rotation. In fact, the Cypriot Business Services & Technology industry has manifested the widest digital leap amongst its peers and increased the digital maturity by almost 10 points.

Testament to this are the high ambitions that the surveyed Cypriot executives demonstrated in our respective survey. In more detail, 75 percent of the sample stated that within the next five years their organizations aim to further accelerate their digitalization efforts and perform above their European counterparts<sup>34</sup>. If this pace of progression is maintained over the next five years, we anticipate that the Cypriot Business Services & Technology industry will be able to catch up with the European digital frontrunners.

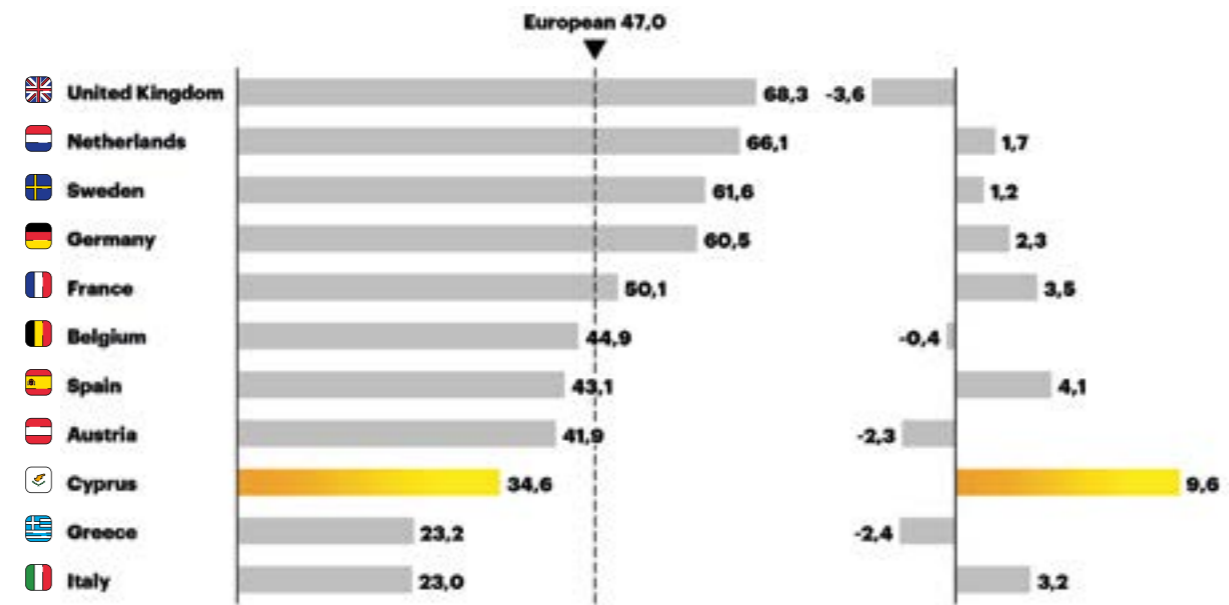


Figure 2.25. The digital economic opportunity index (DEOI) 2018 & evolution 2015 - 2018, European sample (# out of 100)

<sup>33</sup>. The performed analysis and the respective conclusions were based on data recorded through Accenture’s “Digital Capabilities” survey. The survey ran from July 13, 2017 to October 30, 2017 and more than 80 Cypriot organizations across 11 key Cypriot industries participated.  
<sup>34</sup>. *ibid*

The breakdown into the three levers that make up the Digital Economic Opportunity Index, namely, digital skills, digital technologies and digital accelerators allows for a more detailed understanding (see Figure 2.26).

Digital Skills appear to contribute the most towards the industry’s overall digital maturity (50 percent of the overall industry’s digital maturity), while Digital Technologies have the least impact (21 percent of the overall digital maturity). In fact, the Cypriot Business Services & Technology Industry demonstrates the second lowest Digital Technologies DEOI score amongst its European counterparts, scoring just above the Italian Business Services & Technology industry. The Digital Accelerators lever follows the same pattern with Digital Technologies and demonstrates the second lowest score within our sample.

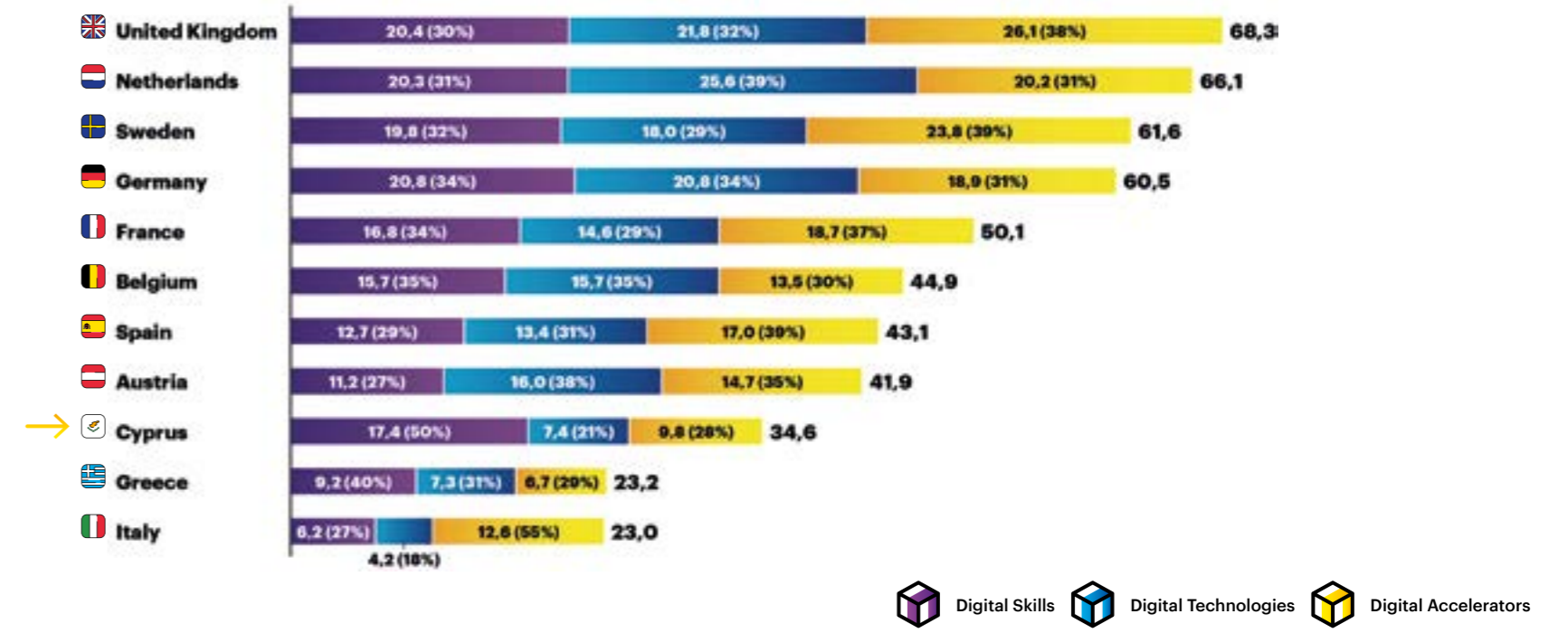


Figure 2.26. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - breakdown per lever



For a more in-depth understanding of the key drivers we have further dissected the index into its nine dimensions (see Figure 2.27).

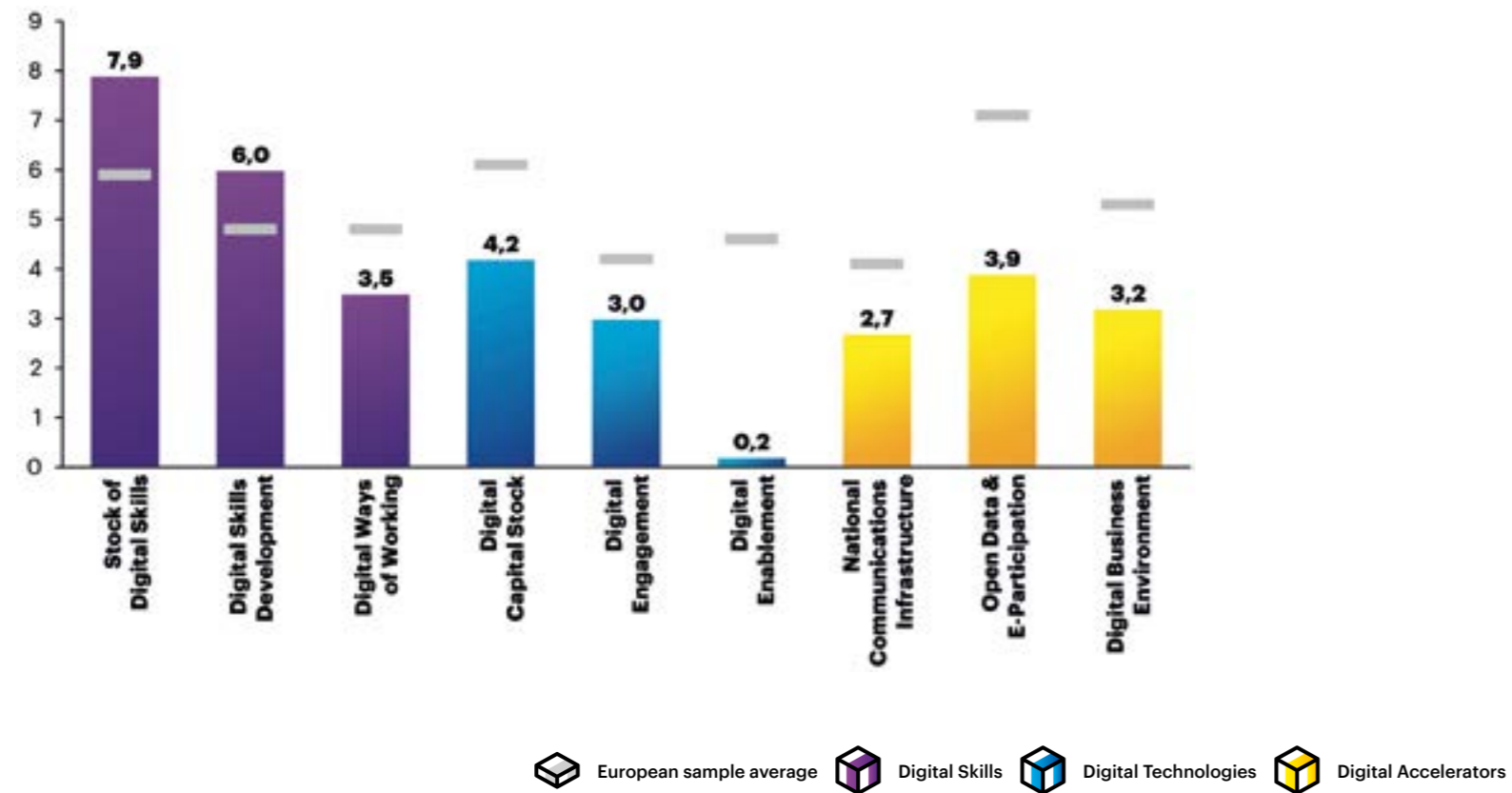
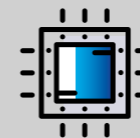


Figure 2.27. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - analysis per dimension



**Digital Skills:** The Cypriot Business Services & Technology industry excels across the Digital Skills lever. More specifically, the industry scores above the European average across the “Stock of Digital Skills” and “Digital Skills Development” dimensions. This indicates that the industry employs a high percentage of people with ICT skills and demonstrates a relatively strong commitment to ICT training and “new-skilled” talent recruitment. This outcome is further confirmed by the surveyed industry executives. 63 percent of them perceive their organization’s workforce to be ready and open to adopt new digital skills, while 76 percent of them have already identified the key competencies required for their organization’s digital transformation<sup>35</sup>.

On the other hand, the “Digital Ways of Working” dimension, which includes factors such as remote working, knowledge sharing and a company’s overall attitude towards innovation is performing less well. Cypriot Business Services & Technology companies appear not to take advantage of digital solutions that facilitate their daily operations and drive customer engagement. In fact, 84 percent of the surveyed Cypriot executives stated that their organizations still demonstrate high levels of bureaucracy that significantly decelerates the adoption of the “New”<sup>36</sup>.



**Digital Technologies:** In the Digital Technologies lever, the Cypriot Business Services industry lags significantly behind its European peers. While Cypriot companies demonstrate moderate levels of “Digital Capital Stock” and “Digital Engagement”, the “Digital Enablement” component, is found to suffer.

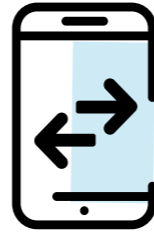
A significant number of Business Services companies appear to make limited use of the digital enabling technologies such as the cloud or big data analytics, in order to facilitate their operations. In fact, the industry exhibits a score of 0,2 points, which is approximately 4 points lower than the rest of their European peers. Interestingly, our “Digital Capabilities” survey revealed a contrasting picture, as most of the interviewed executives believe otherwise. In more detail, 55 percent of them believe that they are already well prepared to utilize the potential of IoT, machine learning, cognitive computing and other digital technologies in their organizations, while 72 percent of them state that their organization already demonstrates the required big data analytics expertise required for their digital transformation<sup>37</sup>.



**Digital Accelerators:** Finally, with regards to the Digital Accelerators lever, the Cypriot industry performs below the European average across all three dimensions. The widest gap is observed across the “Open-Data & E-Participation” and the “Digital Business Environment” dimensions. According to our “Digital Capabilities” survey, the establishment of a favorable business environment appears also to be of paramount significance.

35. *ibid*  
36. *ibid*  
37. *ibid*

# “COMMUNICATIONS” INDUSTRY



Our analysis of Cypriot Communications industry’s digital maturity<sup>38</sup> ranks Cypriot companies at the lower end of the digital maturity spectrum, placing them third to last with a total score of 35,8 points (see Figure 2.28).

This observation is also reflected on the understanding of almost half of the surveyed Cypriot Communications executives. In their view, their organizations demonstrate further room for improvement with regards to their digital capabilities<sup>39</sup>.

The evolution of our sample’s digital maturity during 2015-2018 reveals that the Cypriot Communications industry has significantly progressed regarding its organizations’ rotation to digital.

The industry’s notable increase on the maturity scale (4,2 points) demonstrates that Cypriot Communications companies accelerate their efforts towards digitalization, to close the gap with the sample’s top performers. Our “Digital Capabilities” survey confirms this<sup>40</sup>.

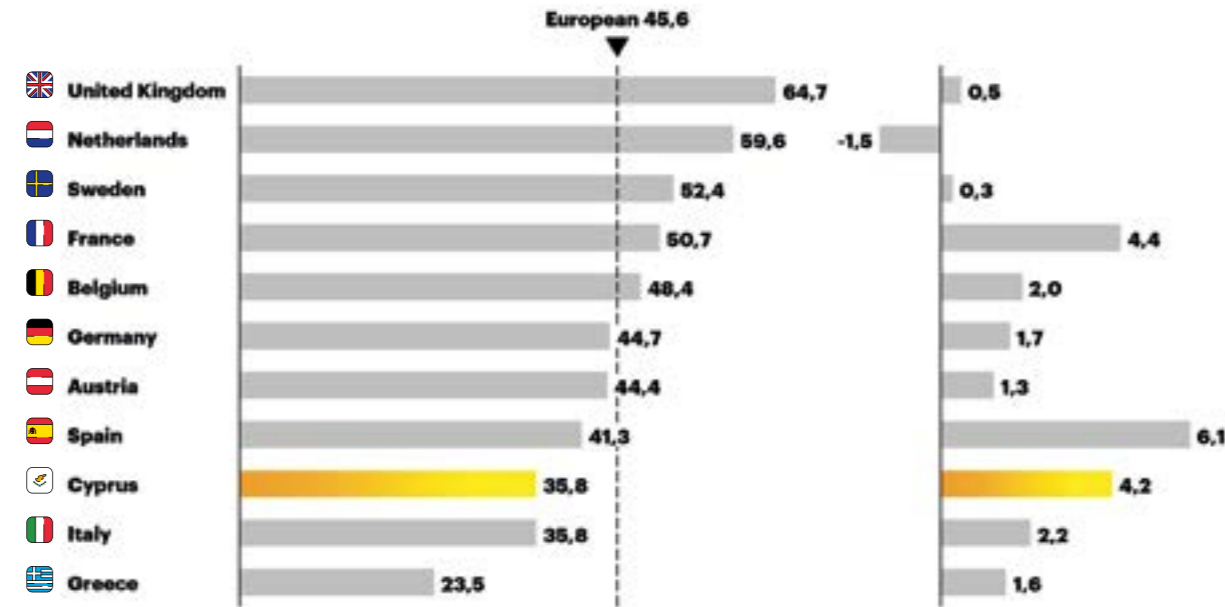


Figure 2.28. The digital economic opportunity index (DEOI) 2018 & evolution 2015 - 2017, European sample (# out of 100)

38. Our analysis with regards to the digital maturity of the Communications industry refers to the level of digitalization of the Cypriot Communications companies (i.e. level of digitalization of their operations, digital skills, adoption of digital technologies, etc.) and not on the level of digitalization of the national communications infrastructure that these organizations provide.

39. The performed analysis and the respective conclusions were based on data recorded through Accenture’s “Digital Capabilities” survey. The survey ran from July 13, 2017 to October 30, 2017 and more than 80 Cypriot organizations across 11 key Cypriot industries participated.

40. ibid

The breakdown of our data into three levers that make up the Digital Economic Opportunity Index, namely, Digital Skills, Digital Technologies and Digital Accelerators allows a more detailed understanding of the contribution of each digital lever to the industry’s overall digital maturity (see Figure 2.29).

Our analysis indicates that the Cypriot Communications Industry’s digital maturity index is driven by its Digital Skills lever (at a percentage higher than 50 percent). At the same time, the Digital Technologies and Digital Accelerators levers demonstrate a much lower impact on the industry’s overall maturity. More specifically, Digital Technologies contribute 19 percent to the DEOI score, while Digital Accelerators contribute 26 percent to the industry’s overall maturity. Notably, across our European sample, the Cypriot Communications industry demonstrates the lowest percentage contribution of Digital Technologies and Digital Accelerators, pointing to the conclusion that there is still significant room for meaningful investment in those two areas.

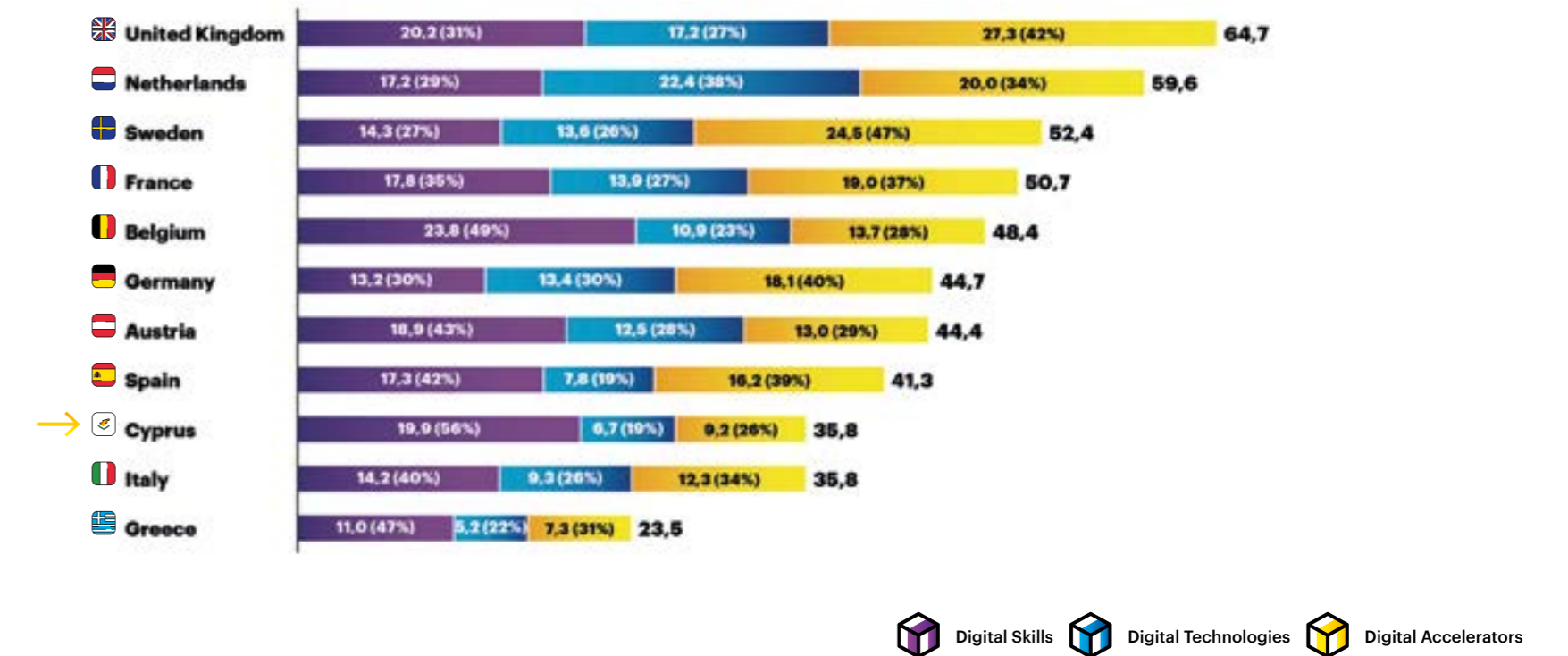


Figure 2.29. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - breakdown per lever

For a more in-depth understanding of the key drivers we have further dissected the index into its nine dimensions (see Figure 2.30).

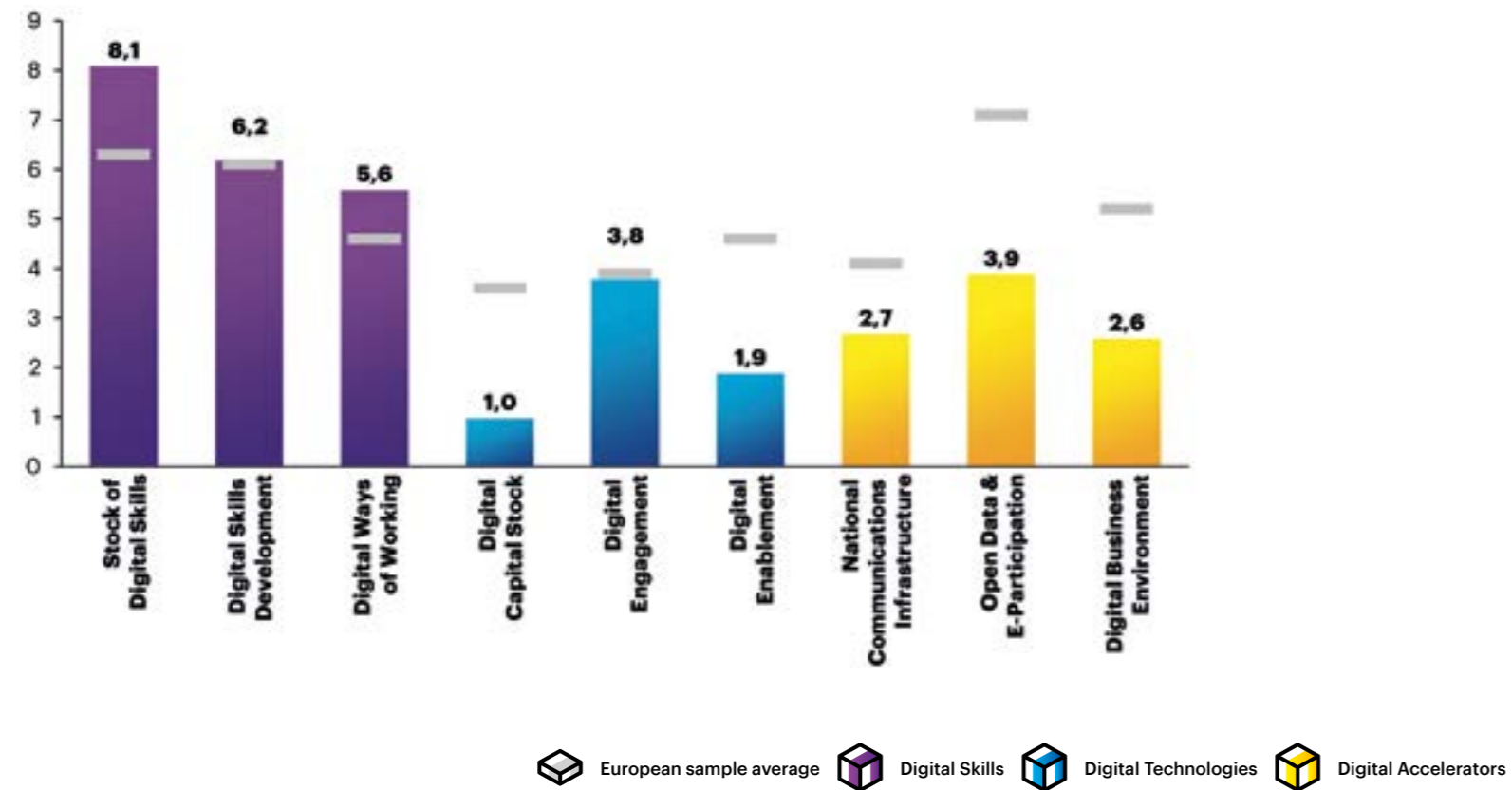
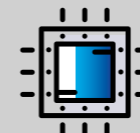


Figure 2.30. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - analysis per dimension



**Digital Skills:** On the Digital Skills lever, all three dimensions score higher than the European average. The “Stock of Digital Skills” and “Digital Skills Development” dimensions indicate that ICT skills within the industry are attune to its European industry peers, and that Cypriot organizations are committed to upskill and reskill their workforce. Additionally, the high performance across the “Digital Ways of Working” dimension reflects the inclusion and usage of digital tools.

In fact, Cypriot companies score 1 point above the European average. Our analysis appears in line with the opinion of the Cypriot interviewed Communications executives. In fact, all interviewed executives believe that their company’s workforce is open to adopt the new digital skills that will be required in the future. This illustrates the industry’s forward-looking stance. Moreover, more than 67 percent of executives claim to apply agile methodologies throughout their organizations, testament to the industry’s healthy adaptation to the digital ways of working<sup>41</sup>.



**Digital Technologies:** With respect to the Digital Technologies lever, the low score across the “Digital Capital Stock” dimension suggests that there is still room for additional investments to be made regarding hardware and software stock that will support the organization’s rotation to digital. Contrary to hard-data evidence, more than 67 percent of the surveyed Communications executives consider their organization’s existing applications and infrastructure platforms to be sufficient to support a new digital operating model. Furthermore, Cypriot Communications are still in experimentation phase with regards to the application of new technologies such as IoT and big data analytics in their operations. In terms of customer engagement through digital channels, Cypriot companies perform on par with the European average. This demonstrates that significant efforts have already been made in this area. 67 percent of the questioned Communications executives still believe there is room for improvement in the way their organizations leverage digital in sales, account management, and service provision. Their ambitions are to further improve the performance over the next five years<sup>42</sup>.



**Digital Accelerators:** Cypriot Communications companies lag behind their European industry peers on the Digital Accelerators lever. Market conditions in Cyprus may be putting a damper on digitalization, while existing regulation and non-updated policies with regards to data protection and sharing may also inhibit the industry’s digitalization. Concerted efforts will be required on all fronts (public and private) to accelerate the industry’s rotation to digital. In fact, the establishment of a favorable and flexible regulatory and business environment will accelerate the industry’s rotation to digital and will enable the Cypriot Communication companies’ platforms to become part of larger ecosystems<sup>43</sup>.

41. ibid  
42. ibid  
43. ibid



# “FINANCIAL SERVICES” INDUSTRY

The evaluation of the digital maturity of European Financial Services (FS) industries reveals that Cypriot FS organizations score at the lowest position amongst their European peers in 2018. With a European average score of 39,3 points, Cyprus remains approximately 19 points below average (see Figure 2.31).

Although hard data indicates that the Cypriot industry lags behind its peers across the digital maturity index, 60 percent of the interviewed Cypriot FS executives consider their digital capabilities on par with their international counterparts<sup>44</sup>.

Focusing on the evolution of the FS industries’ digital maturity, we observe that Cyprus follows the same pattern with the other European FS industries in our sample. In fact, the Cypriot FS industry demonstrated one of the highest digital maturity increases over the last four years. This indicates that similarly to its European counterparts, the Cypriot FS industry has invested in digital and has accelerated organizations’ rotation. Despite the notable increase in its digital maturity, the Cypriot FS industry scores at the bottom position in 2018.

In line with this finding stands the opinion of the interviewed FS executives. More than 80 percent plan to deploy a multi-year digital action to further progress their organizations’ rotation to digital<sup>45</sup>.

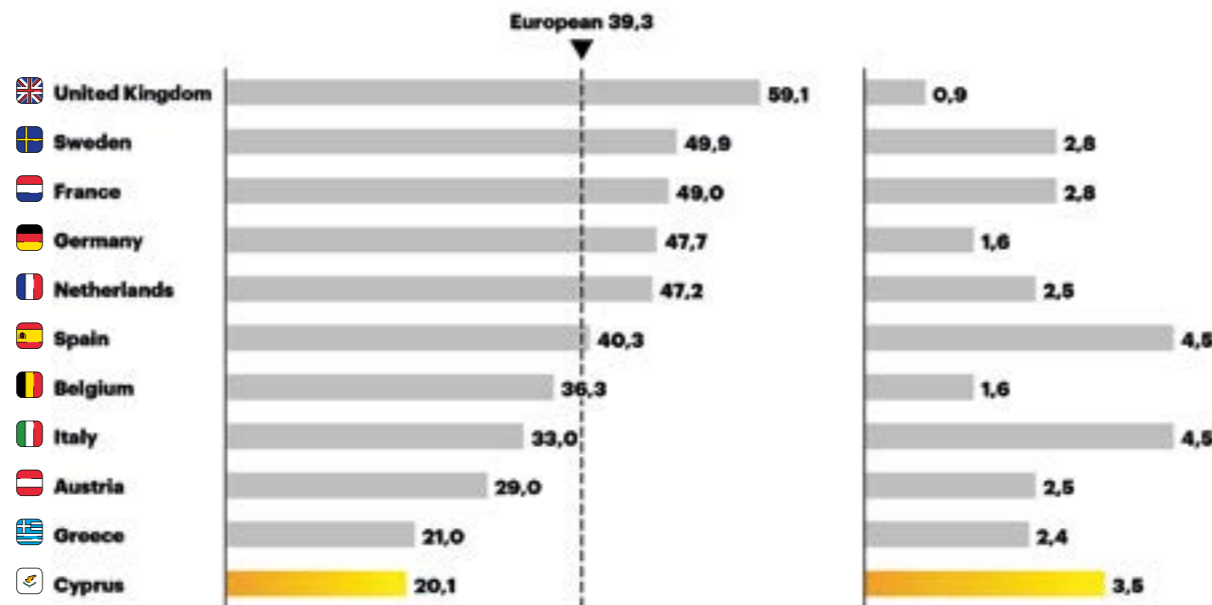


Figure 2.31. The digital economic opportunity index (DEOI) 2018 & evolution 2015 - 2018, European sample (# out of 100)

44. The performed analysis and the respective conclusions were based on data recorded through Accenture’s “Digital Capabilities” survey. The survey ran from July 13, 2017 to October 30, 2017 and more than 80 Cypriot organizations across 11 key Cypriot industries participated.  
45. *ibid*

By decomposing the industry’s score into the three levers that make up the Digital Economic Opportunity Index, namely, Digital Skills, Digital Technologies and Digital Accelerators we can gain a more detailed understanding of each lever’s contribution to the industry’s overall digital maturity.

Digital Skills appear to have the highest contribution towards the Cypriot industry’s overall digital maturity (more than 35 percent of the overall maturity), with Digital Technologies to have the least. In absolute values, the contribution of the Digital Technologies and Digital Accelerators levers to the Cypriot industry’s score are amongst the lowest across our European sample (see Figure 2.32).

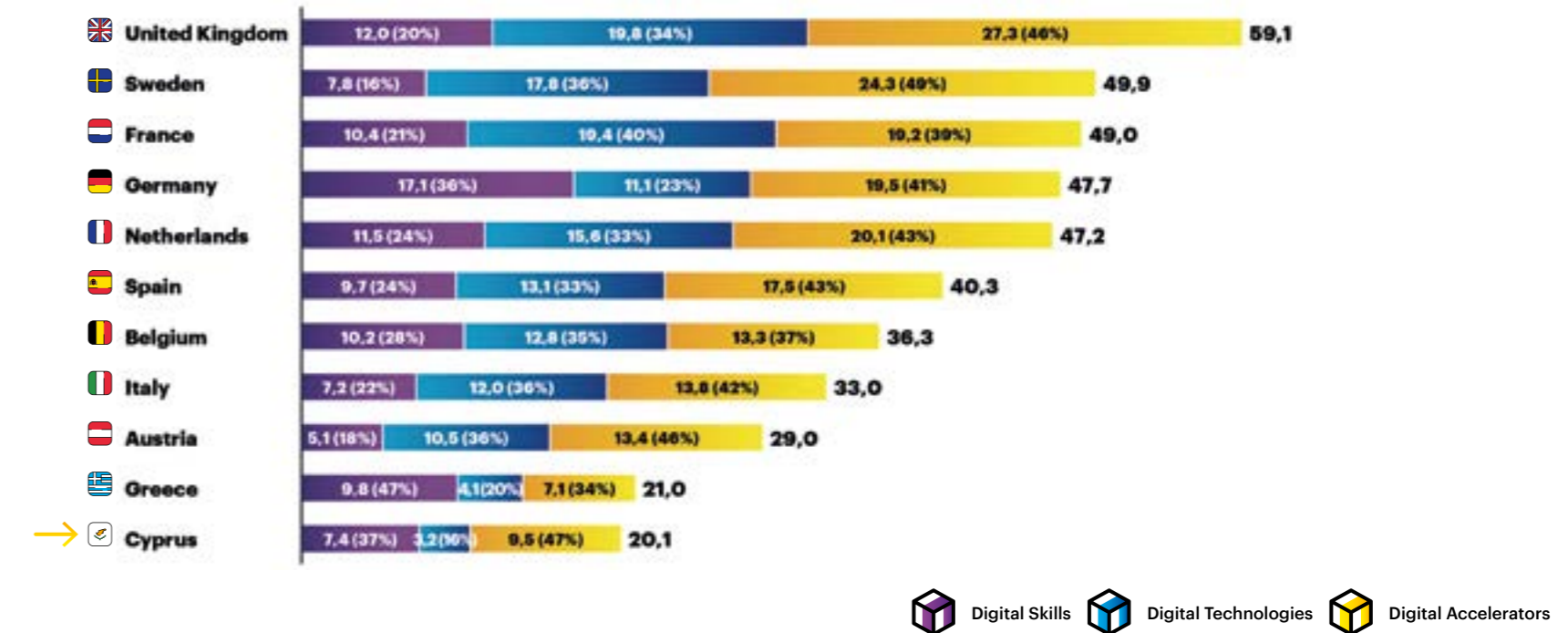


Figure 2.32. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - breakdown per lever





For a more in-depth understanding of the key drivers we have further dissected the index into its nine dimensions (see Figure 2.33).

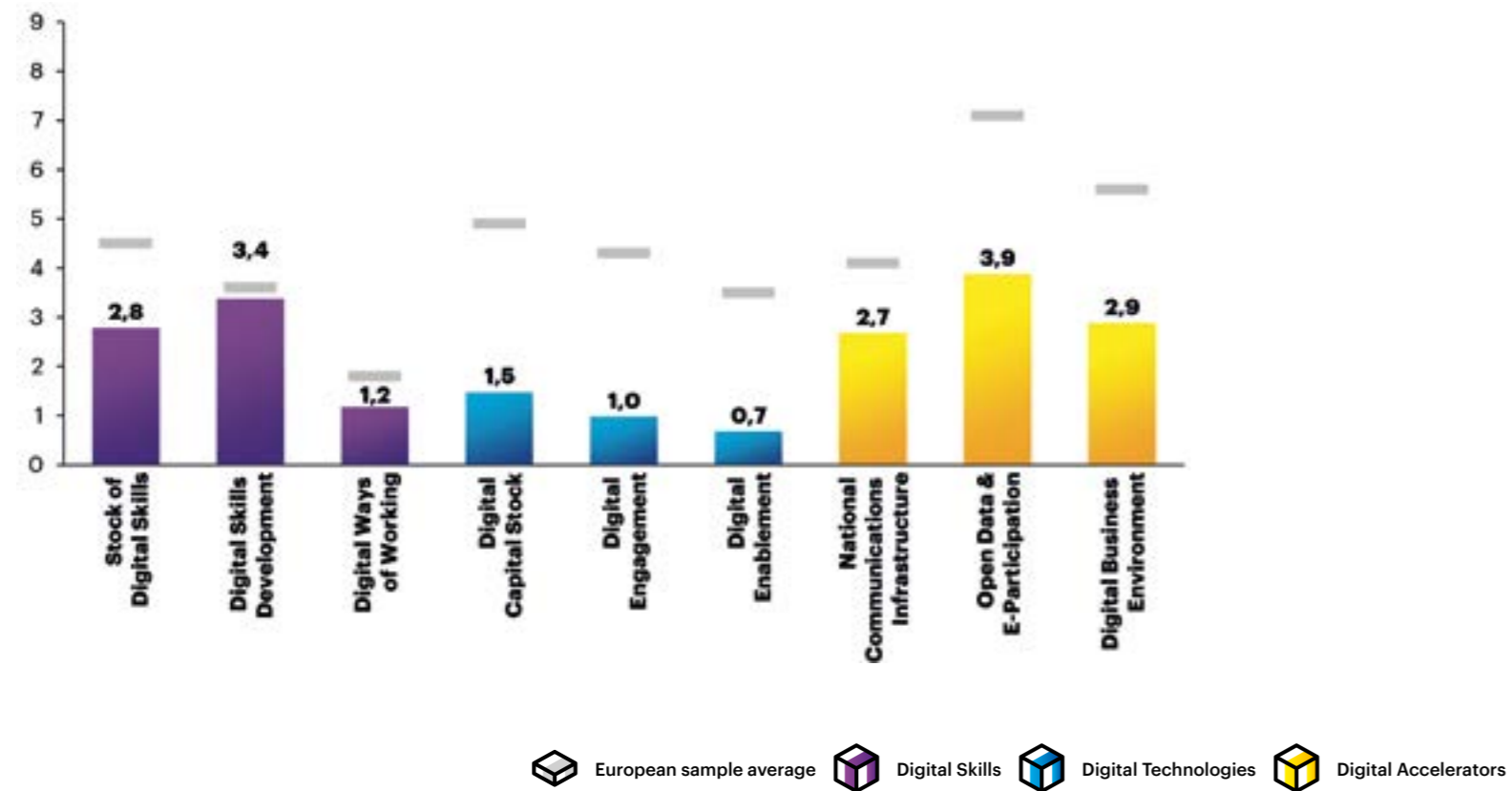
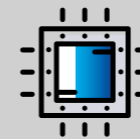


Figure 2.33. The digital economic opportunity index (DEOI) 2018, European sample (# out of 100) - analysis per dimension



**Digital Skills:** Our analysis of the Digital Skills lever reveals that the Cypriot Financial Services industry’s score lags behind its European counterparts. The “Digital Skills Development” dimension contributes the most to the lever’s overall score and is on par with the European average. This indicates that Cypriot Financial Services institutions have already placed increased emphasis on their employees’ digital training. Nevertheless, according to the Digital Capabilities Survey results, more than 60 percent of the surveyed industry executives claim to have not yet identified the key competencies required for the growth of their digital business<sup>46</sup>.

Furthermore, the industry’s performance under the “Stock of Digital Skills” dimension is more alarming. Cypriot Financial Services score almost 2 points below the European average. This reflects a workforce with limited digital skills relatively to their European peers. As a matter of fact, more than 60 percent of surveyed Cypriot executives recognize a Big Data analytics skills gap<sup>47</sup>. Moreover, Cypriot Financial Services institutions perform below average across the “Digital Ways of Working” dimension. This clearly demonstrates the need for institutions to rapidly adopt digital tools and build capabilities that will facilitate workforce mobility, enable knowledge-sharing and drive innovation.



**Digital Technologies:** With regards to the Digital Technologies lever, Cypriot Financial Services institutions fail to take advantage of digital technologies to improve internal operations and further enhance customer engagement. This leads to significantly low scores across all three dimensions, “Digital Capital Stock”, “Digital Engagement” and “Digital Enablement”. According to our “Digital Capabilities” survey, industry executives in Cyprus confirm these findings. 50 percent of them state that the development of new digital services is impeded by the existing legacy backend systems which are incapable to support the organization’s new digital operating model. At the same time, more than 80% of the surveyed executives deem that their organizations currently lack the necessary internal capabilities to fully leverage big data analytics and create actionable insights that can support management decisions<sup>48</sup>.



**Digital Accelerators:** Finally, the Cypriot Financial Services industry falls behind its European peers in all three dimensions of the Digital Accelerators lever, suggesting that market conditions in Cyprus today can significantly limit companies’ digitalization. As with other industries, the widest gap is observed in the “Digital Business Environment” and “Open Data & E-Participation” dimensions. This indicates that the Cypriot Public Administration should accelerate their targeted actions towards facilitating a business environment that encourages the industry’s digitalization.

46. *ibid*  
47. *ibid*  
48. *ibid*

### 3.

# “NO REGRET” CROSS-INDUSTRY DIGITAL INITIATIVES

While each industry is disrupted by digital across different areas of its value chain, there is a set of fundamental, “no regret” digital initiatives that apply across all industries and are considered to be the common denominator for all organizations’ rotation to digital. A truly digital enterprise stands for more than just using new technologies.

Rather, what truly distinguishes and gives a digital enterprise its competitive advantage is its culture, strategy and way of operating. Digital enterprises strive continuously to enable new and leaner operating models underpinned by agile business processes, connected platforms, analytics and collaboration capabilities that enhance productivity.

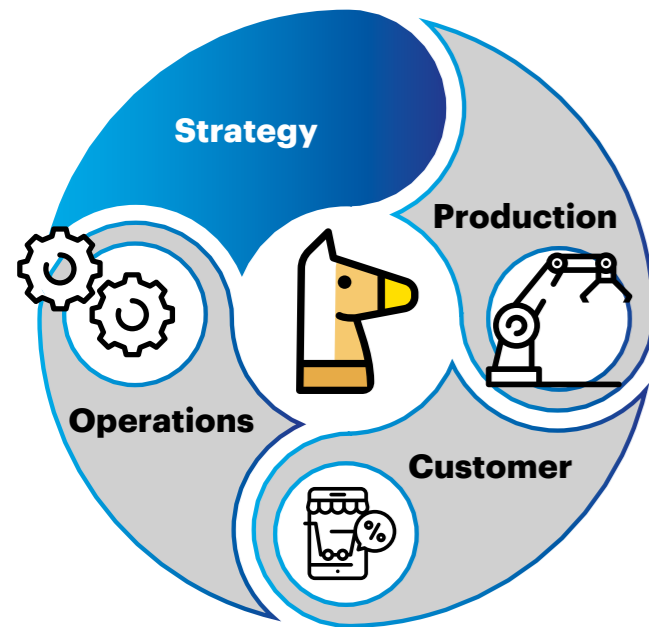
A digital enterprise relentlessly explores, identifies and develops new digital business models, always ensuring that customers and employees are at the center of whatever it does.

With global best practices as our reference point, we propose a set of “no regret” digital initiatives for digital transformation.

It is evident that not all initiatives may be applicable for all organizations across the industries; indeed, digital initiatives are recommended to be selected in accordance to the different strategy, business model, size, available budget and most importantly, each company’s own digital aspirations and vision.

The initiatives that follow, are categorized according to the value chain area they refer to.





# “NO REGRET” STRATEGY CROSS-INDUSTRY DIGITAL INITIATIVES

Companies need to fundamentally change the way they sense and interpret digital disruption. For this reason, they should evaluate the way they incorporate digital into their corporate strategy and their objectives. To achieve this, the introduction of a Digital Strategy Office is proposed. At the same time, organizations need

to ensure the creation of a supporting culture that will enable their digital transformation, starting with the CEO, who should be the ultimate driver of their organization’s rotation to digital. Finally, organizations shall understand and leverage their data to provide valuable insights and transform themselves into Data Powered Enterprises.

## 1

### Design the digital roadmap and introduce the Digital Strategy Office

Design and implement a digital roadmap that will incorporate all digital initiatives to be undertaken by the organization. Set up the Digital Strategy Office that will be responsible for the effective operationalization of the digital roadmap and decide on the priorities and coordination of the digitalization initiatives undertaken by the respective business units

## 3

### Understand and leverage Data

Data is the new digital capital. Organizations shall innovate, build differentiated data insight solutions and transform into Data Powered Enterprises. In more detail, companies shall:

- Design their Data Strategies, Operating Models and perform data diagnostics to assess their dataset quality and quantity. Dataset may include: (User Data, Transaction Data, Field Data, Inventory Data, Performance Data, etc.)
- Introduce structured data governance models and establish regulations, policies and standards to ensure data cybersecurity and ePrivacy
- Design new or optimize the existing data engineering tools and mechanisms
- Build data management platforms (either on cloud or on premise) to enable data consolidation, management and seamless sharing

---

## 2

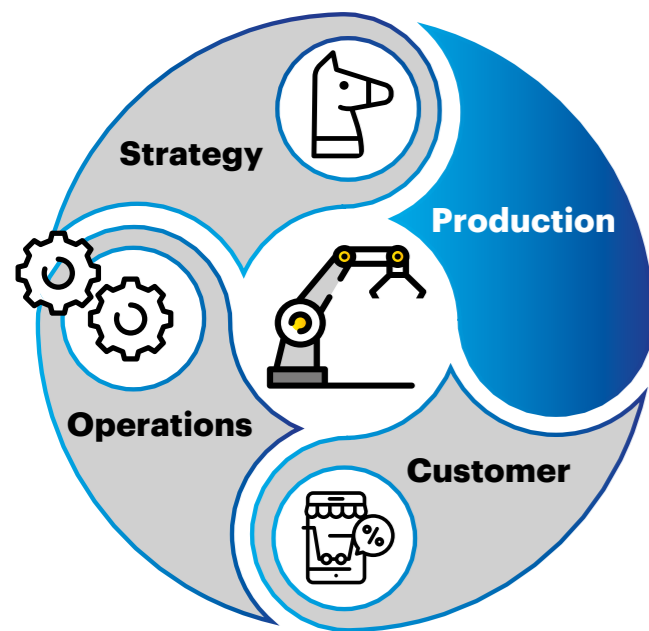
### Ensure a supportive culture for digital transformation, starting with the CEO

Digital transformation of an organization can be a huge challenge. Therefore, this needs to be supported by a receptive corporate culture. Responsibility for this resides with the CEO. The CEO will be the ultimate driver of the organization’s digital transformation program and shall play a key role in providing direction, securing key resources, and ensuring stakeholders buy-in

## 4

### Evaluate the use of Blockchain technology to unlock greater operational efficiencies

Determine how to use blockchain to tap value trapped in key operational processes. Evaluate processes using a formal framework to determine potential blockchain use cases, impacts and benefits. Implement the framework to set the blockchain approach, identify key strategic objectives and select key partners



# “NO REGRET” PRODUCTION CROSS-INDUSTRY DIGITAL INITIATIVES

Companies will need to reassess every aspect of their production, to ensure they are fit for purpose in a digital world. Production greatly differs across the different industries but also amongst different companies within the same sector.

Nevertheless, companies shall evaluate digitally enabled hardware tools and digital technologies, i.e. Big Data Analytics, Artificial Intelligence, Virtual Reality, etc., in order to monitor and automate their assets, connect dispersed, diverse and remote operations and empower and protect their workforce.

1



## Perform Asset Predictive Maintenance

Deploy smart sensors, IoT and telematics on assets and equipment and design a predictive maintenance/service solution. The solution shall harness and analyze data from the organization’s assets, transmit the resulting insights to the organization and enable it to anticipate problems, proactively schedule maintenance and help manage its assets

3



## Setup a Remote Operations Center (ROC)

Setup a Remote Operations Center (ROC) that will integrate the supply chain processes and tools across silos. Continuously monitor the execution of operations activities and provide visibility to performance metrics. Perform ‘what if’ analysis, and dynamically respond to changes. The Remote Operations Center (ROC) brings together capabilities such as Events & KPI Management, Analytics and Execution to enhance outcomes such as Operational Excellence and Overall Equipment Effectiveness

2



## Integrate the supply chain processes

Design a platform that will integrate all supply chain processes, (i.e. order capture, payment processing, shipping, tracking, customer relationship management systems). The introduction of a cloud-based web app could allow for easy access between mobile devices and computers

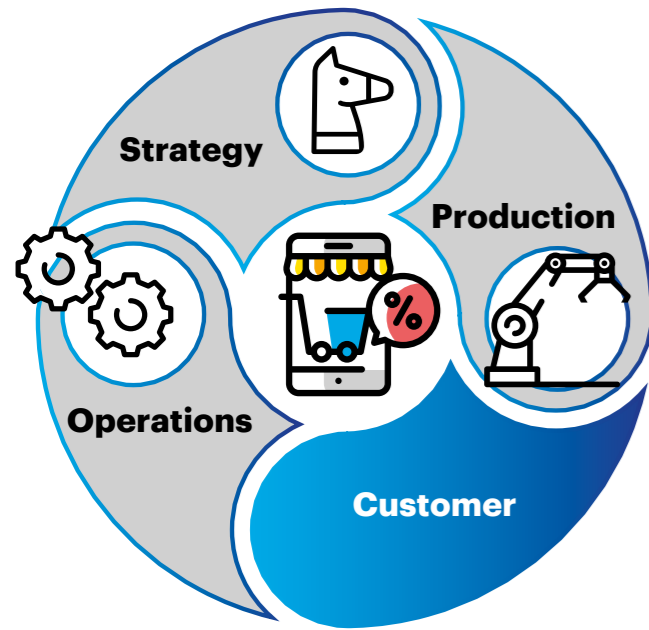
4



## Enable the Field Workforce & Design Safety Solutions

Leverage wearable solutions and analytics solutions to capture, analyze, communicate critical manufacturing information to and from workers, and improve operational performance by supporting fact-based decisions in near real-time. Remotely monitor and manage safety across sites, where the field workforce operates





# “NO REGRET” CUSTOMER CROSS-INDUSTRY DIGITAL INITIATIVES

As the rate and scale of digital disruption accelerates, and customer expectations evolve, companies face an increasingly important need to change the way they track and respond to customer expectations.

Offering just products and services is no longer enough for businesses to succeed. Companies that rise to the challenge shall focus on using digital technologies to better understand their customers, improve their omni-channel presence and ultimately offer hyper-personalized products and services.

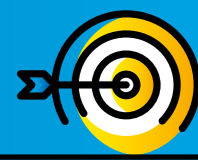
1



## Obtain a single, in-depth view of your customers

Integrate on/offline and back-end systems to obtain a single view of customer, including customer’s activities across all channels. Use big data analysis, in order to obtain an in-depth understanding of your customers. Based on various channel customer information (including social), anticipate customer needs and suggest products aligned with customer preferences

3



## Provide hyper-personalized products/ services

Customers increasingly expect personalized and relevant interactions. Leverage digital technologies to meet these expectations by delivering hyper-personalized products/ services

2



## Improve the Omni-Channel Customer Interaction and add self-service tools

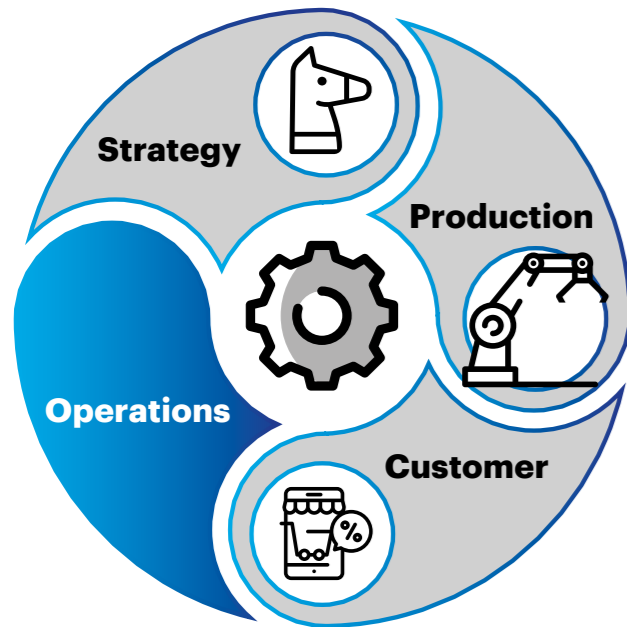
Introduce and rollout customer journeys to track, integrate and analyze the way that customers use a combination of available channels to interact with an organization and improve the customer experience across channels in the context of the personalized treatment

4



## Provide experiences instead of products/services

Focus on delivering experiences tailored to the needs of the individual. Measure customer voice and sentiment, catalogue the outcomes your customers strive to achieve, identify partners and develop unique combinations that deliver relevant customer experiences



# “NO REGRET” OPERATIONS CROSS-INDUSTRY DIGITAL INITIATIVES

The deployment of digital technologies across the organizations’ internal operations and workforce, enable the organizations to “become digital”, improve their operational efficiencies, and upskill their workforce.

In fact, experience indicates that internal operations are one of the value chain areas that is greatly impacted by digital, as well as an area that is often used as the instigation point for an organization’s rotation to digital.

The digitalization of an organization’s internal operations is a multi-faceted activity that shall cover amongst others the digitalization of back-office processes, the transformation of IT operations, the prioritization of digital security and the digital upskilling and reskilling of the organization’s workforce.

1



## Automate and digitalize end-to-end back-office processes

Digitalize and automate end-to-end internal processes powered by artificial intelligence (robotics) and big data analytics to increase their operating resilience while giving the opportunity to the workforce to participate in more engaging and creative type of jobs

2



## Transition the IT infrastructure to the cloud

Move the IT infrastructure to the cloud, in order to improve efficiencies, enable the seamless integration of business processes and provide immediate, on-demand access to the latest solutions and approaches and ready-to-deploy environments

3



## Increase the security of the internal systems

Strengthen internal systems and incorporate increased security measures such as multi-layered authentication and internal control processes to strengthen security and comply with increased regulations

4



## Manage the Digital Talent Cycle

Define the new digital roles, capabilities and skillset, assess the active workforce and design digital training sessions

5



## Reinvent the hiring process

Identify the skills of the future and invest in them to remain sustainable

6



## Nurture an agile culture

Nurture an agile culture within the organizations (starting with the leadership) to help the organizations digitally transform on both the inside (operations, culture, practices and workforce) and the outside (company image and appeal to prospective employees)

# APPENDIX DIGITAL CAPABILITIES SURVEY

## DIGITAL CAPABILITIES SURVEY METHODOLOGY

The analysis was based on the Digital Capabilities Survey open from July 13, 2017 to October 30, 2017.

The Digital Capabilities Survey was completed by C-level/ senior management executives of Cypriot organizations.

The survey was structured around 8 dimensions, 26 sub-dimensions and 48 questions that covered organizations' key digital capability areas.

### DIGITAL CAPABILITIES SURVEY- THE 8 DIMENSIONS

- > **Strategy & Governance**
- > **Organization & Collaboration**
- > **Customer Experience & Interaction**
- > **Technology & Platforms**
- > **Information & Insights**
- > **Growth & Innovation**
- > **Operations & Ecosystem**
- > **Security & Privacy**

For each Question, a 5 level Likert scale was used to evaluate the respondents' perceived digital capabilities.

**5** **Very High**

### OPTIMIZING

Highly predictable with continuous improvement

**4** **High**

### CONTROLLED

Enhanced, automated and metric driven

**3** **Average**

### DEFINED

> Well documented and established

**2** **Low**

### REPEATABLE

> Defined with some documentation

**1** **Very Low**

### INFORMAL

> Ad hoc and Reactive

**0** **Non Applicable**

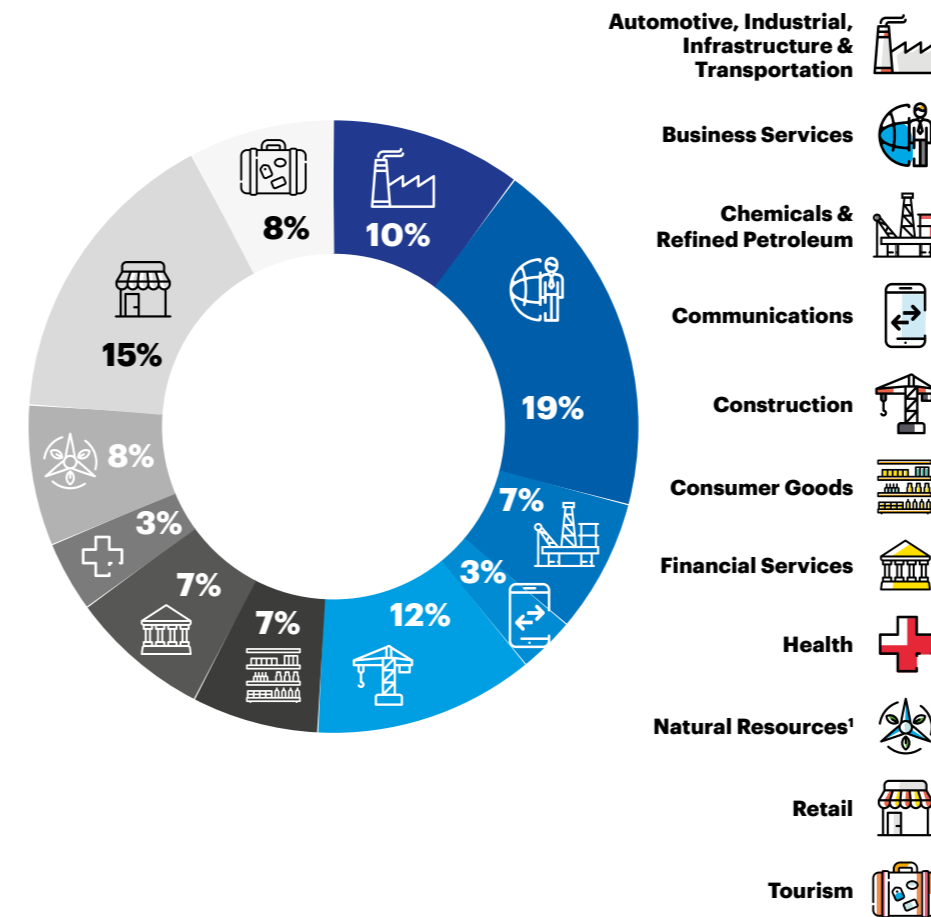
### ABSENT

> Non- Existent

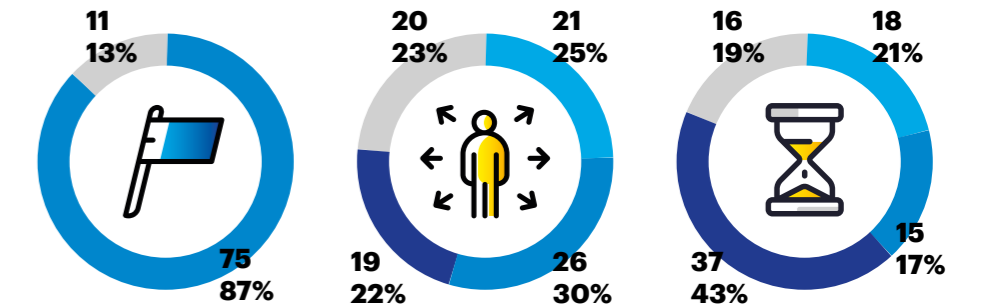
5 level Capabilities scale

## DIGITAL CAPABILITIES SURVEY-SAMPLE DEMOGRAPHICS

The participative sample consists of 86 organizations, with the following distribution across Cyprus's industries.



Digital Capabilities Survey - Industry Breakdown of Participants



Digital Capabilities Survey - Demographics

<sup>1</sup> Natural Resources industry includes the following sectors: Crop and animal production, forestry, fishing, mining and quarrying, manufacture of basic metals, manufacture of other non-metallic mineral products.

<sup>2</sup> Cypriot: Domestic company operating exclusively in Cyprus. Multinational: Company operating in at least one country other than its home country

<sup>3</sup> Based on Eurostat clustering by number of employees (Very Small - less than 10, Small - less than 50, Medium - less than 250, Large - more than 250)

# INDUSTRY MAPPING

The industry classification was based on the NACE Rev. 2 classification of economic activities<sup>4</sup>.

## 1. Automotive, Industrial, Infrastructure and Transportation (AIIT)

H49	Land transport and transport via pipelines
H50	Water transport
H51	Air transport
H52	Warehousing and support activities for transportation
G45	Wholesale and retail trade and repair of motor vehicles and motorcycles
C26	Manufacture of computer, electronic and optical products
C27	Manufacture of electrical equipment
C28	Manufacture of machinery and equipment n.e.c.
C29	Manufacture of motor vehicles, trailers and semi-trailers
C30	Manufacture of other transport equipment
C33	Repair and installation of machinery and equipment

## 2. Business Services

M69	Legal and accounting activities
M70	Activities of head offices; management consultancy activities
M71	Architectural and engineering activities; technical testing and analysis
M72	Scientific research and development
M73	Advertising and market research
M74	Other professional, scientific and technical activities
J62	Computer programming, consultancy and related activities
J63	Information service activities

## 3. Chemicals & Refined Petroleum

C19	Manufacture of coke and refined petroleum products
C20	Manufacture of chemicals and chemical products
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
C22	Manufacture of rubber and plastic products

## 4. Communications

J58	Publishing activities
J59	Motion picture, video and television programme production, sound recording and music publishing activities
J60	Programming and broadcasting activities
J61	Telecommunications
H53	Postal and courier activities

## 5. Construction

F	Construction
---	--------------

## 6. Consumer Goods

C10	Manufacture of food products
C11	Manufacture of beverages

C12	Manufacture of tobacco products
C13	Manufacture of textiles
C14	Manufacture of wearing apparel
C15	Manufacture of leather and related products
C31	Manufacture of furniture
C32	Other manufacturing

## 7. Education

P	Education
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## 8. Financial Services

K64	Financial service activities, except insurance and pension funding
K65	Insurance, reinsurance and pension funding, except compulsory social security
K66	Activities auxiliary to financial services and insurance activities

## 9. Health

Q	Human health and social work activities
---	---

## 10. Natural Resources

A1	Crop and animal production, hunting and related service activities
A2	Forestry and logging
A3	Fishing and aquaculture
B	Mining and quarrying
C16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
C17	Manufacture of paper and paper products
C18	Printing and reproduction of recorded media
C23	Manufacture of other non-metallic mineral products
C24	Manufacture of basic metals
C25	Manufacture of fabricated metal products, except machinery and equipment

## 11. Retail

G46	Wholesale trade, except of motor vehicles and motorcycles
G47	Retail trade, except of motor vehicles and motorcycles
S95	Repair of computers and personal and household goods

## 12. Tourism

I55	Accommodation
I56	Food and beverage service activities
N79	Travel agency, tour operator and other reservation service and related activities

## 13. Utilities

D	Electricity, gas, steam and air conditioning supply
E	Water supply; sewerage; waste management and remediation activities

<sup>4</sup> NACE is the acronym for "Nomenclature statistique des Activités économiques dans la Communauté Européenne". NACE is the statistical classification of economic activities in the European Community and is the subject of legislation at the European Union level, which imposes the use of the classification uniformly within all the Member States



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