



# **DIGITAL GREECE: THE PATH TO GROWTH**

## **BUSINESS SERVICES & TECHNOLOGY INDUSTRY DIGITAL STATE**

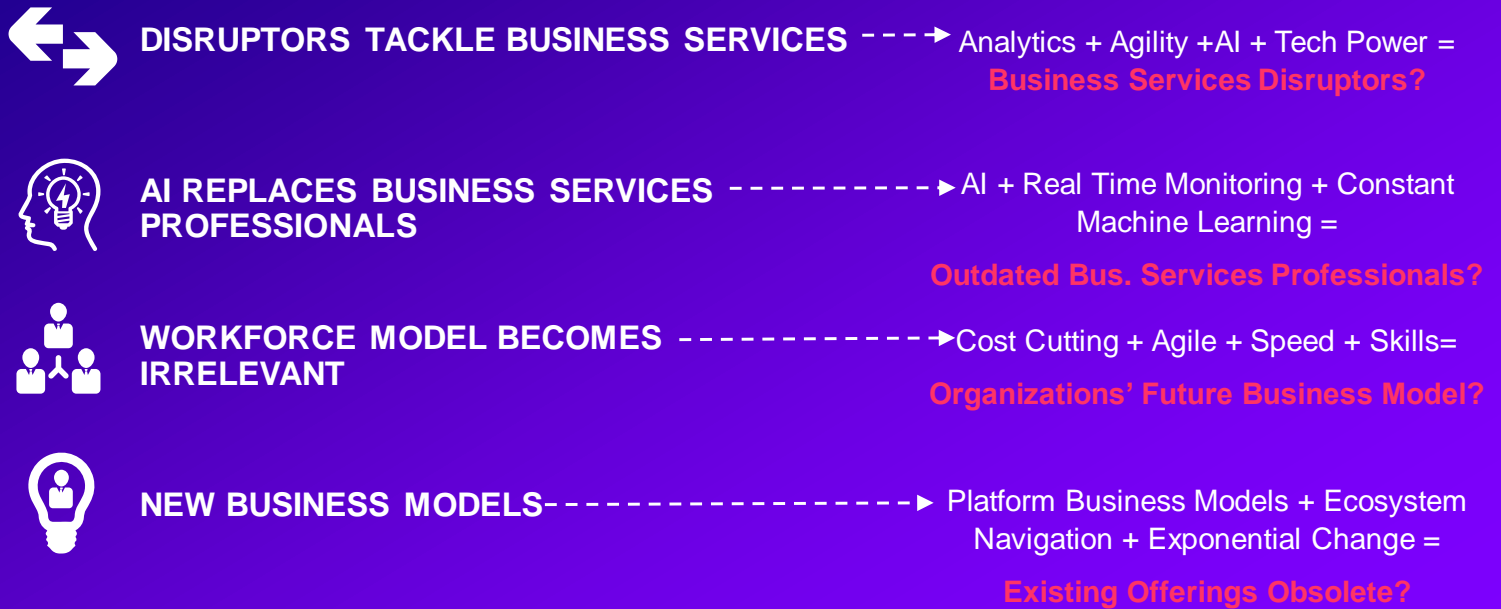
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# 1. Identifying the digital maturity of the Greek Business Services & Technology Industry

As the Business Services & Technology industry's digitalization accelerates, the sector could be on the cusp of a radical transformation

"What will happen in the industry in 10 years?"



Source: Accenture Analysis

Chief Strategy Officers from various industries stated in a study run by Accenture, that disruptions from digital have already transformed their industries, and further disruption will follow. 80 percent of global surveyed executives agree that new technologies have rapidly changed their company's industry over the past 5 years, and that 93 percent believe new technologies will rapidly change their industry in the next 5 years.<sup>1</sup> Recognizing the increased significance of digital, our analysis reveals that leading organizations actively pursue a digital agenda. In this context, executives from the Business Services & Technology industry<sup>2</sup> in Greece, surveyed by Accenture<sup>3</sup>, highlighted their goal to become digital evangelists and act as enablers and accelerators for digitalization of other industries.

<sup>1</sup> Accenture Institute for High Performance, "Thriving on Disruption", 2016

<sup>2</sup> According to NACE (2<sup>nd</sup> revision), the Business Services & Technology industry contains the following sectors: Administrative and support service activities, Architectural and engineering activities; technical testing and analysis, Computer programming, consultancy and related activities; information service activities, Legal and accounting activities; activities of head offices; management consultancy activities, Other professional, scientific and technical activities; Other service activities, Scientific research and development

<sup>3</sup> The performed analysis and the respective conclusions were based on data recorded through the "Questionnaire of Perceived Digital Maturity", launched on December 19, 2016 and remained open until January 30, 2017

### Overall Perceived Digital Maturity

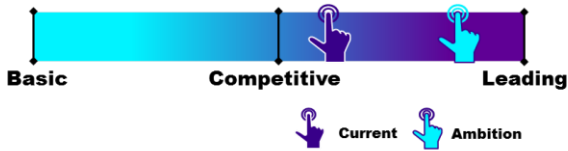


Source: Questionnaire of Perceived Digital Maturity, Accenture Analysis

Figure 1: Overall Perceived Digital Maturity – Business Services & Technology Industry (Current State – Ambition)

Zooming into the Greek Business Services & Technology industry, surveyed executives appear to comprehend the role of digital and perceive themselves to perform on par with their industry’s global market with clear ambitions to increase in the future (Figure 1).

### Digital Skills



Source: Questionnaire of Perceived Digital Maturity, Accenture Analysis

Figure 2: Perceived Digital Skills Maturity - Business Services & Technology Industry (Current State - Ambition)

By breaking down the digital maturity score into its underlying levers, it appears that the Greek Business Services & Technology companies perceived themselves to be quite mature, scoring above the competitive band, as shown by the **digital skills** area. In the future, the Greek Business Services & Technology companies aim to sustain the momentum by further investing to improve their digital workforce capabilities (Figure 2).

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### Digital Technologies

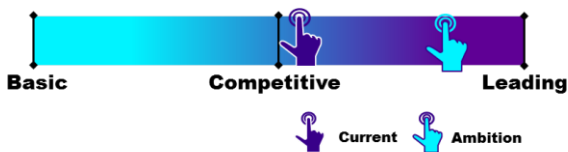


Source: Questionnaire of Perceived Digital Maturity, Accenture Analysis

Figure 3: Perceived Digital Technologies Maturity - Business Services & Technology Industry (Current State - Ambition)

With regards to the **digital technologies** lever, Business Services & Technology executives seem to have undertaken several initiatives relating to the adoption of enabling technologies to help them rotate to digital. At the same time executives are recognizing their weaknesses in certain areas like Customer Experience and Interaction, where they aim to dedicate significant efforts towards improving this dimension over the next 5 years (Figure 3).

### Digital Accelerators



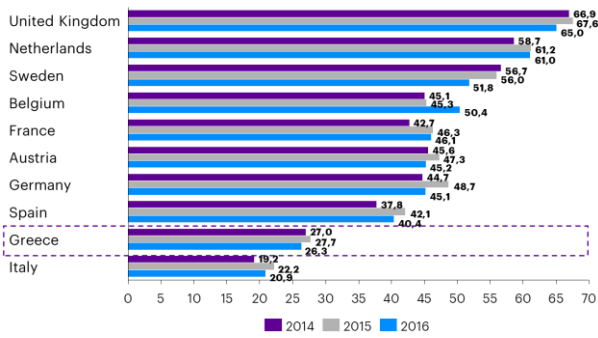
Source: Questionnaire of Perceived Digital Maturity, Accenture Analysis

Figure 4: Perceived Digital Accelerators Maturity - Business Services & Technology Industry (Current State - Ambition)

Finally, it is evident that the survey participants recognize that their companies score slightly above the competitive level across their **digital accelerators** lever. As such, we infer that Greek Business Services & Technology companies have already initiated actions to further build upon this positive momentum and coordinate with regulators to further improve their maturity (Figure 4).

## 1.1 Evaluating the Greek Business Services & Technology Industry’s digital maturity

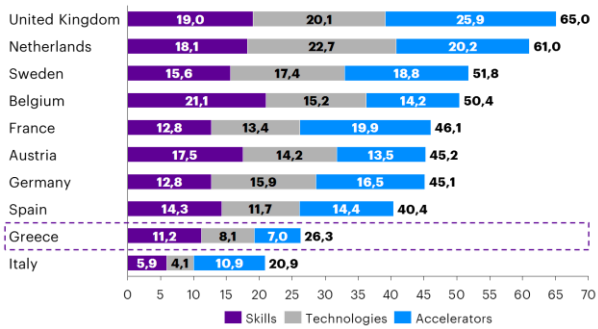
Following our initial analysis, we examined secondary data against the executives’ opinions, in order to extract an additional layer of insight. To further evaluate the Greek Business Services & Technology industry’s digital maturity and identify the primary factors that can drive economic growth in their digital economic output, we have applied the Digital Economic Opportunity Index (DEOI) for the Business Services & Technology industry.



Source: Oxford Economics, Accenture analysis

Figure 5: Business Services & Technology Digital Economic Opportunity Index from 2014 to 2016

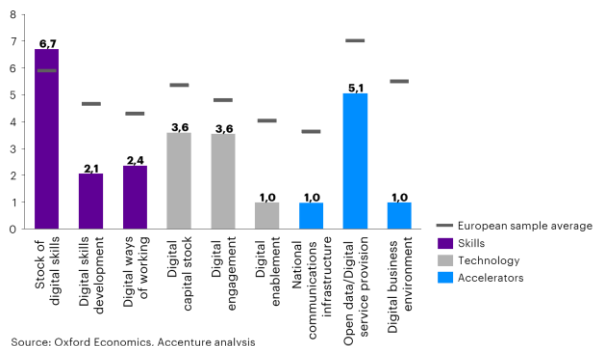
Our in-depth analysis for the Greek Business Services & Technology industry with regards to its digital maturity shows that the Greek companies score near the bottom against nine other European peers during the last three years (2014 to 2016). In fact, over the last three years the Greek Business Services & Technology industry has made negative progress, decreasing its digital maturity by 0,7 points in two years. It is worth mentioning that the industry made a jump of 0,7 points in 2015 and experienced a notable setback in 2016, which brought the overall maturity back down to 26,3 points (Figure 5).



Source: Oxford Economics, Accenture analysis

Figure 6: Business Services & Technology Digital Economic Opportunity scores by country

The breakdown into the three levers that make up the Digital Economic Opportunity Index, namely, digital skills, digital technologies and digital accelerators expresses the following picture, as seen in Figure 6.



Source: Oxford Economics, Accenture analysis

Figure 7: Business Services & Technology Industry - Digital Economic Opportunity Index Components Breakdown

To further analyze the key drivers behind the Digital Economic Opportunity Index, we deep dive into the nine underlying components to get a more in-depth view of the factors that contribute to the moderate performance of the Greek Business Services & Technology industry (Figure 7).



Under the **digital skills** lever, the Greek Business Services & Technology industry appears ahead of its European peers on the “Stock of Digital Skills”, but far less competent in the “digital skills development” component, reflecting a relatively poor commitment to ICT training and digital talent recruitment. The “digital ways of working” component, which includes factors such as remote working, knowledge sharing and overall company attitude towards innovation is also performing poorly, as Greek Business Services & Technology companies do not seem to be taking notable advantage of digital solutions to facilitate their daily work and engage with their customers through digital means.

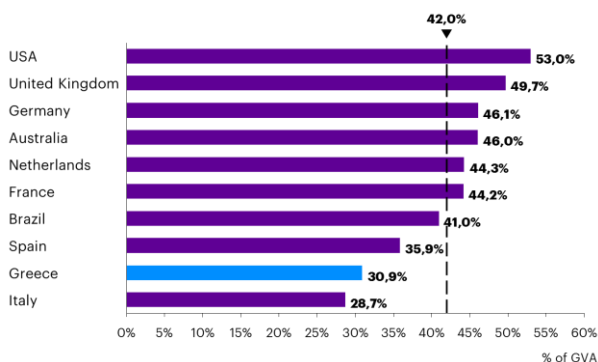


Against the industry’s strong performance across the digital skills lever, the **digital technologies** lever appears to have some way to go to fully leverage the capabilities offered by digital. While the Greek Business Services & Technology companies demonstrate moderate levels of “digital capital stock” and “digital engagement”, a marked shortcoming is revealed when examining the “digital enablement” component. This suggests that the majority of Business Services & Technology companies have not, up till this point, adequately leveraged enabling technologies, such as cloud or analytics to facilitate their operations. In fact, the Greek Business Services & Technology companies exhibit a score of 1,0, which is approximately 3 points lower than the rest of their European peers. This evidence suggests that this is an area where Greek companies are severely handicapped against their international competition.



Finally, as far as the **digital accelerators** lever is concerned, our analysis shows that the low score across this lever is primarily driven by the poor maturity exhibited in the “national communications infrastructure” and “digital business environment” components. This could be attributed to the poor state of the Greek communications infrastructure and to the overall maturity of the Greek digital business environment, which sometimes enforces more bureaucratic and rigid regulations that do not promote an “ease of doing business”.

## 1.2 Defining the contribution of digital to the Business Services & Technology industry’s economic output



Source: Oxford Economics, Accenture analysis

Figure 8: Percentage Contribution of Digital to Business Services & Technology Industry’s GVA

At the other end of the spectrum, the US Business Services & Technology industry currently displays the highest digital contribution to its GVA, with its digital output calculated to comprise 53 percent of the industry’s GVA. When investigating the European Business Services & Technology industries, it appears that the UK and Germany lead the examined group, scoring at a 49,7 percent and 46,1 percent of their digital potential respectively (Figure 8).

The poor performance of the Greek Business Services & Technology companies across their digital maturity is also echoed by the limited contribution of digital to the economic value of the industry. More specifically, Accenture’s analysis demonstrates that digital inputs currently contribute to 30,9 percent of the industry’s Gross Value Added (GVA)<sup>4</sup>, and are equal to €3,6 billion. This score is approximately 9 full points below the industry average of the European peers. Greek Business Services & Technology companies currently rank in the penultimate place in our reviewed sample, as can

<sup>4</sup> Gross value added (GVA) is a productivity metric that measures the contribution to an economy, producer, sector or region. Gross value added provides a dollar value for the amount of goods and services that have been produced, less the cost of all inputs and raw materials that are directly attributable to that production. The relationship between GVA and GDP is defined as:  
 $GVA + \text{taxes on products} - \text{subsidies on products} = \text{GDP}$ , or restated as:  
 $GVA = \text{GDP} + \text{subsidies} - (\text{direct, sales}) \text{ taxes}$

## 2. Business Services & Technology Industry - Rotating to Digital

There is wide-spread evidence that all industries are impacted by digital. In fact, as per Accenture research, “every business is a digital business”. However, as each industry is also unique, its digital rotation puts the emphasis on different parts of the value chain, which we refer to as “digital pivot points”.

What are the digital pivot points?

Companies organize their business activities against value chains that typically consists of strategy, production, sales and customer services and operations. There is widespread evidence that all industries are impacted by digital. However, as each industry is also quite unique, its respective digital rotation places emphasis on different areas of the value chain. These areas are referred to as digital pivot points.

This below mentioned value chain (see Figure 9) will be used as our framework to identify the digital “pivot point(s)” of the Greek industries.

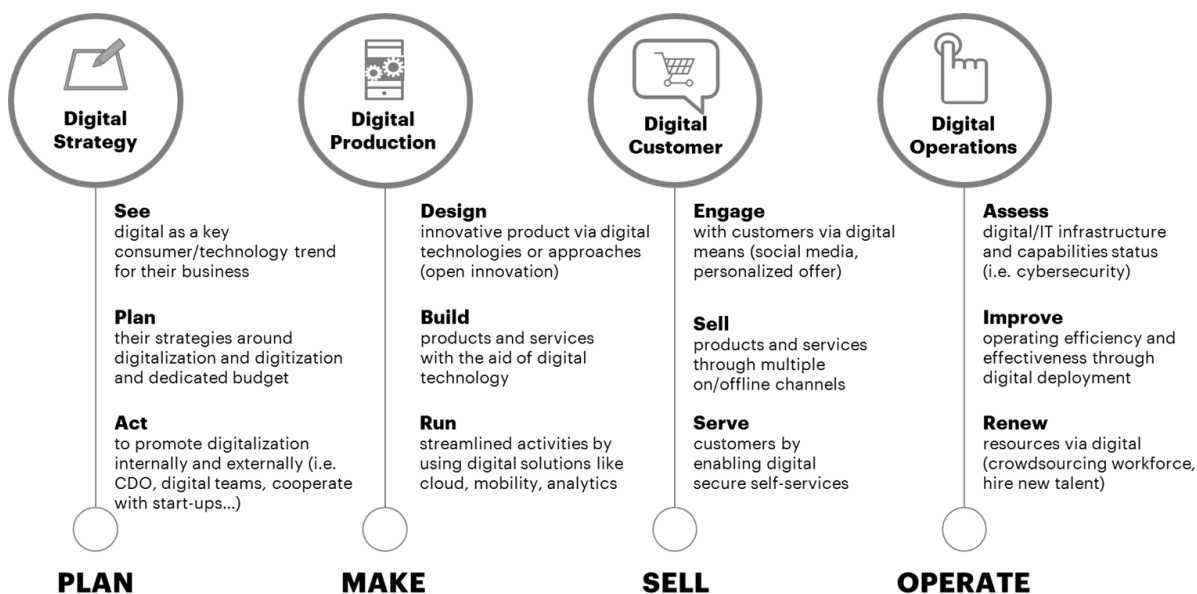


Figure 9: The typical Value Chain

### 2.1 Industry Clustering

According to our analysis on how digital impacts the Greek industries’ value chain, we have placed the Greek Business Services & Technology industry within the fourth group of the Greek industries, the “Multipliers” (see Figure 10).

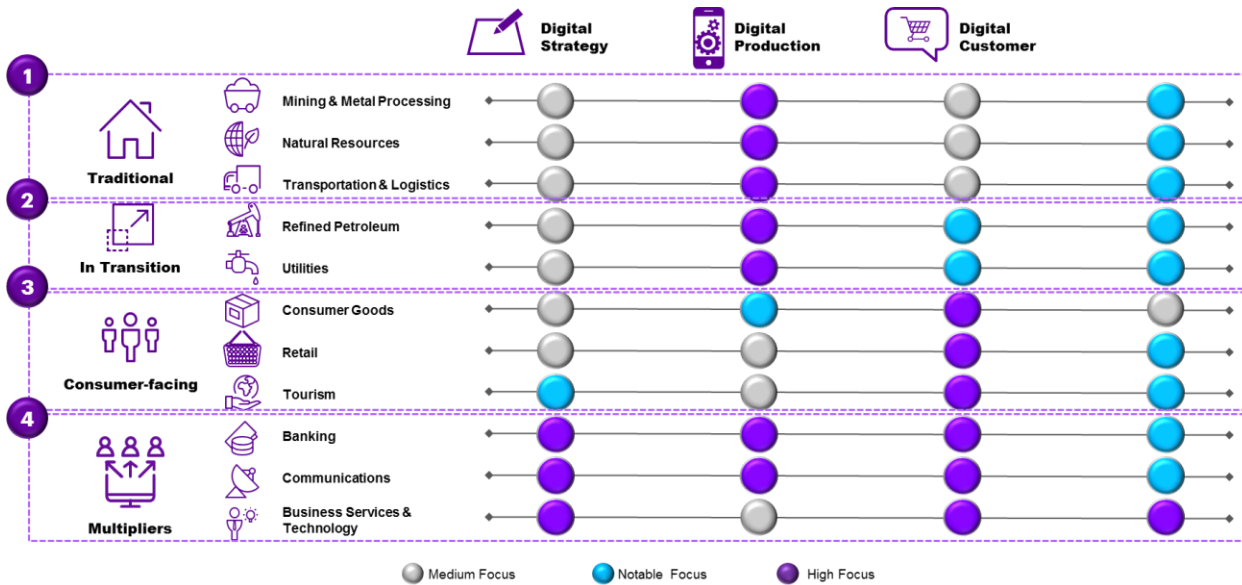


Figure 10: The Clustering of the Greek industries

These industries are primarily service oriented, they demonstrate a double market orientation (both Business to Business and Business to Consumer). “Multiplier” organizations shall have a double role with regards to Greece’s digital transformation: they shall progress their own digital transformation and to that end, increase their maturity. At the same time, they shall act as the national “multipliers”, in order to accelerate “Traditional”, “In-Transition” and “Consumer-facing” industries’ rotation to digital. Digital technologies have a significant impact across the “Multipliers” value chain. Eleven digital themes influence the “Multipliers” as presented in the Figure 11 below. The description of the digital themes is presented in Figure 13.

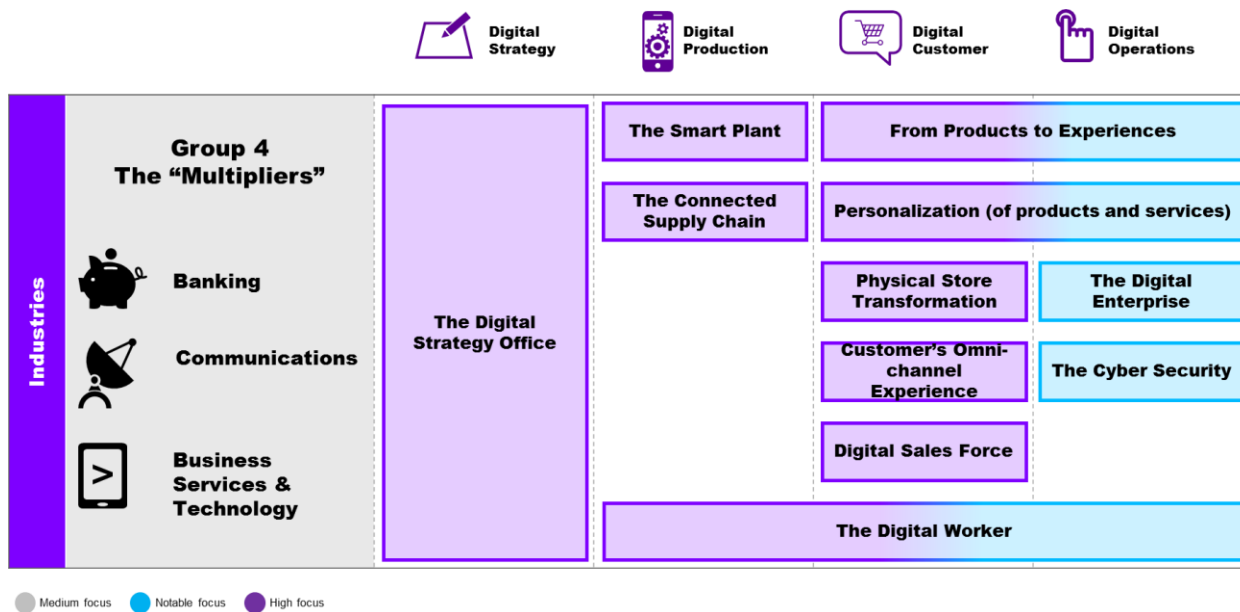


Figure 11: The “Multipliers”



International best practices suggest that, at the core of their digital rotation, Business Services & Technology companies shall develop digital capabilities to better serve their clients, become more collaborative, augment their human capital with machine processing power and embrace an agile mindset. Accenture, rotating to digital has embraced a set of digital practices to improve its internal operations and the way its workforce work and collaborate (see Figure 12).

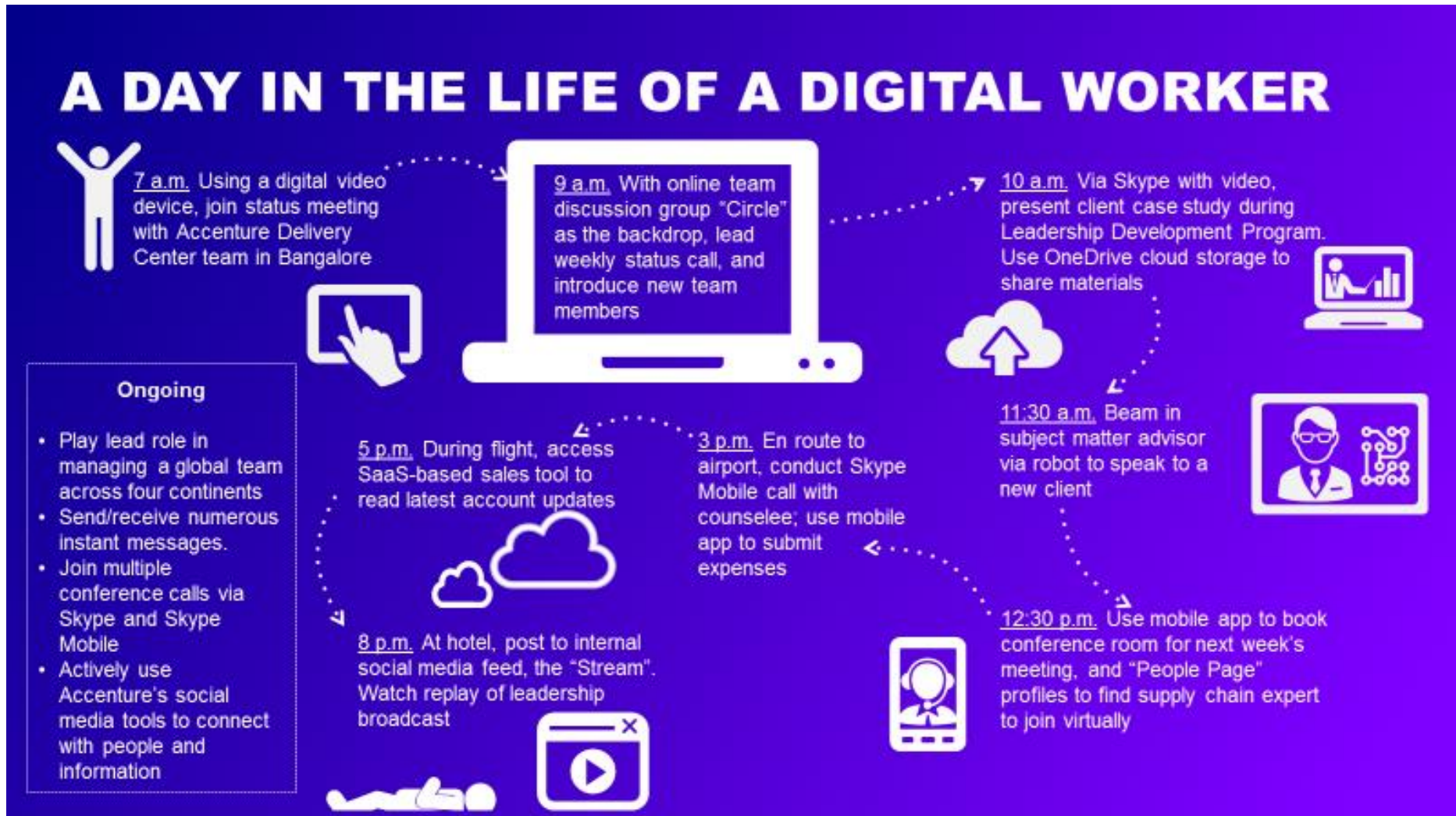


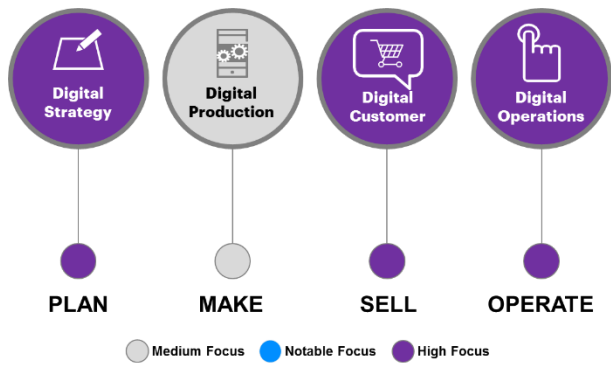
Figure 12: A day in the life of a Digital Worker



Figure 13: Digital Themes

## 2.2 Digital Pivot Points

Contextualizing these observations with industry's executives, we have identified the augmentation of human capabilities and the rotation towards a digitally-enabled strategy as the primary areas for digital attention. In addition, the Business Services & Technology industry shall focus their efforts on improving their internal operations through the adoption of digital tools and change their offerings to offer more digitally-driven services to their clients. Figure 9 illustrates the emphasis on the different pivot points for the Business Services & Technology industry.



*Figure 14: Business Services & Technology Industry - Digital Pivot Points*

## 2.3 Initiating the digital transformation

With global best practices as our reference point, we propose a set of initiatives that will accelerate the industry's digital rotation. It is evident that not all initiatives may be applicable for all organizations within this industry; 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 broken down into tactical, which we call "**tactical moves**" and disruptive, which we call "**cut new ground**". In addition, they are linked to the digital themes presented previously that influence the specific group of industries. The classification of the identified initiatives is depicted in Figure 14.

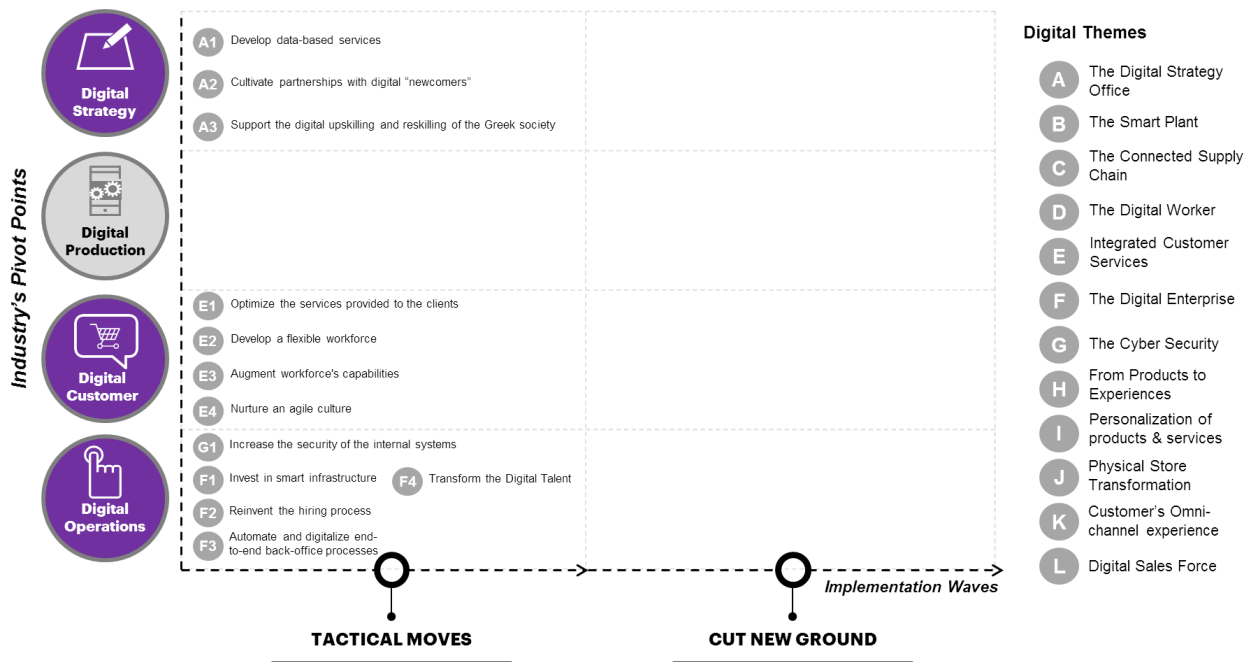


Figure 15: Classification of Suggested Initiatives Across Three Dimensions

A description of the proposed initiatives is presented in the table below:

#	Digital Initiative	Description	Value Chain Area
A1	Develop data-based services	Leverage big-data analytics to strengthen the organizations' existing services, or to offer new ones	Digital Strategy
A2	Cultivate partnerships with digital "newcomers"	Cultivate systems of partnerships between incumbents and start-ups. This change shall foster innovation, promote specialization and make operations more agile. It will also support organizations to create new and innovative value propositions for clients at lower price points	Digital Strategy
A3	Support the digital upskilling and reskilling of the Greek society	Support institutional Bodies (e.g. SEV, SEPE, etc.) along with the relevant Educational Authorities/Directorates in incorporating digital courses and capabilities in the curricula of the Primary, Secondary and Tertiary Education	Digital Strategy
E1	Optimize the services provided to the clients	Leverage emerging technologies, i.e. advanced analytics, machine learning, robotics process automation to optimize services provided to the clients (i.e. legal and audit processes)	Digital Customer
E2	Develop a flexible workforce	Deploy a set of platforms to enable flexibility for the organizations' workforces, manage capacity effectively and crowdsource super-specialists for specific tasks	Digital Customer

#	Digital Initiative	Description	Value Chain Area
E3	Augment workforce's capabilities	Leverage emerging technologies to augment professionals' capability to do (RPA, blockchain), think (AI), learn (machine learning) and, eventually, feel (deep learning, social networks). In this way, expertise shall be provided to clients more efficiently, using a combination of people and machines. This will enhance the quality and volume of expertise provided, while lowering the cost to serve.	Digital Customer
E4	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)	Digital Customer
F1	Invest in smart infrastructure	Use digitally enabled infrastructure to enhance internal productivity and creativity, and improve the employee and client experience a firm offers. Empower workers at all levels with the appropriate digital tools and infrastructure to steer employees towards sounder business decision-making, greater efficiency and enhanced creativity	Digital Operations
F2	Reinvent the hiring process	Identify the skills of the future and invest in them to remain sustainable. This is especially challenging when the future may bring as yet unimagined roles requiring new skills in data science, intuition, pattern finding, and dealing with complexity and change management	Digital Operations
F3	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 their workforce to participate in more engaging and creative type of jobs	Digital Operations
F4	Transform the Digital Talent	Define the new digital roles, capabilities and skillset, assess the active workforce and design digital training sessions to digitally upskill and reskill the organizations' personnel according to their personal development needs	Digital Operations
G1	Increase the security of the internal systems	Strengthen internal systems and incorporate increased security measures as multilayered authentication and internal control processes to strengthen security and comply with increased regulations	Digital Operations

## 2.4 Global Leading Practices

### Case Study – Accenture & RocketSpace

Accenture has set up an Open Innovation practice to enable the acceleration of new technologies and innovative solutions. Open Innovation hosts events in collaboration with RocketSpace, a technology and co-working campus. Recent events have focused on trends in the Accenture Technology Vision. For the first such event, representatives from 100+ startups and venture capital firms listened to Accenture leaders speak about “The Digital-Physical Blur” trend, and then five start-ups pitched their companies in relation to the theme. Another event focused on the trend “From Workforce to Crowdsourcing: Rise of the Borderless Enterprise”. Through this platform Accenture is able to match key trends with top startups and promote an ecosystem of innovation. At the same time, being in touch with cutting edge technologies Accenture is able to understand the challenges and opportunities that exist over the next few years and develop offerings that will be relevant to their clients in the future.

*Source: <https://www.accenture.com/us-en/technology-insight-open-innovation>*

### Case Study – Kensho

Kensho is a company that combines big data and machine learning to analyze the impact of real world events on the financial markets and then provide this insight to interested parties. Other capabilities include answering queries automatically, and delivering insights to capital markets workers. Prior to this breakthrough, a trader or an analyst would spend about 40 hours of analysis on a similar task. Users can ask in natural language “how did an event similar to this impact financial markets the last time?” and Kensho will then conduct the analysis within seconds, by analyzing relationships between more than 90,000 events and finally present the findings of the analysis including relevant graphs and charts. The software has gained wide adoption from investment banks, with Goldman Sachs installing it across the firm since 2014 and others like Bank of America Merrill Lynch also adopting it more recently.

*Source: <https://www.forbes.com/sites/laurashin/2015/12/09/kensho-the-financial-answer-machine/2/#3205637939ca>*

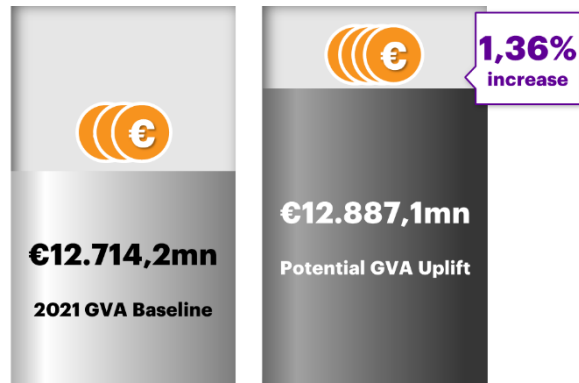
### Case Study – Arya

Arya is a technology recruiting platform, which empowers recruiters with artificial intelligence technology. The company’s business proposition is to identify what makes a high-quality candidate by using technologies such as machine learning, big data analytics, and behavioral pattern recognition. In this way, Arya can identify not only candidates that are a good fit for a client, but also those candidates that exhibit the highest probability of accepting a job offer, based on sophisticated recruitment algorithms. Subsequently, the platform sends a personalized message to the selected candidates to see whether they may be interested. As a final step, Arya automatically brings the qualified talent directly into the company’s candidate pipeline, thus streamlining the recruitment process by enhancing the applicant pool with quality candidates.

*Source: <http://goarya.com/benefits/>*

## 2.5 Maximizing the Business Services & Technology industry's economic output (GVA)

Our econometric analysis suggests that by 2021 the initiation of the digital rotation for the Business Services & Technology industry is expected to result to a low increase in the economic output by 1,36 percentage points equal to approximately €172,9 million<sup>5</sup>. The projected GVA uplift is a product of macroeconomic analysis assuming a 10% increase on the industry's digital maturity (Figure 16).



Source: Oxford Economics, Accenture analysis

*Figure 16: Business Services & Technology GVA Uplift as % of the 2021 GVA baseline, (Million Euros, %)*

<sup>5</sup> 2021 Gross Value Added is calculated from Eurostat data using Oxford Economics projected growth rates. The spill-over effect to the economic performance of other industries is not included in this figure.

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