



DIGITAL TRANS FORMATION IN GREECE 2018

**Acknowledging the needs
and the challenges of organisations**



CONTENTS

- Foreword 03
- About EIT Digital 04
- About Foundation 04
- Objective of this report & Methodology 05
- Editorial 06
- Introduction to Digital Transformation
 - Defining Digital Transformation 07
 - Key reasons to embrace digital transformation 08
 - Digital Transformation Strategy & Common Practices 08
- Digital Transformation 2018
 - Digital Transformation in the World 10
 - Digital Transformation within the EU 13
 - Digital Transformation in Greece: Public and Private Sector
 - The Country's Digital Profile 18
 - The Public Sector 21
 - Local Administration 24
 - Digital Transformation in the Private Sector 26
- Case Studies
 - Papastratos SA 34
 - The City of Trikala 36
- Suggestions and Conclusions 38



FOREWORD

A year ago, we decided to write a report about Digital Transformation, a word unknown to many. Since then, it has become more than a buzzword.

We,- as consumers, citizens, employers and vital parts of our organisations and companies,- have entered a new era. One that demands of us to be digitally savvy and agile, be continuously up to date and cope with the huge amount of information that we come across every day.

All the above is what Digital Transformation is about. It's about helping us stay relevant, productive and competitive. Furthermore, it's about enabling us take the next step, be ready for future challenges before they become threats, and pave the way of working efficiently.

In 2018, the number of people that have become aware of Digital Transformation has increased drastically, and even the Government and Local Administration have designed and implemented strategies towards this direction. But, do we actually know how to put Digital Transformation into practice?

This year, we conducted a short **survey**, which highlights the progress that has been made. Organisations are now aware of the need to change, adapt and create innovation. Employees try to stay informed on the latest trends. The customer comes at the center; innovation is being encouraged; culture shift is under way.

Are we there yet? To put it simply - no. The European Commission places the country among the last in the EU region and gives it a disappointing Digital Transformation Enablers' Index (DTEI) score. But we have a great human capital and we are just emerging from a long period of austerity measures and financial hurdles. **The only way is up.**



The customer comes at the center; innovation is being encouraged; CULTURE SHIFT IS UNDER WAY.

ABOUT

EIT DIGITAL

EIT Digital is a leading European digital innovation and entrepreneurial education organisation driving Europe's digital transformation.

EIT Digital delivers breakthrough digital innovations to the market and breeds entrepreneurial talent for economic growth and improved quality of life in Europe, by mobilising a pan-European ecosystem of almost 200 top European corporations, SMEs, startups, universities and research institutes.

As a Knowledge and Innovation Community of the European Institute of Innovation and Technology (eit.europa.eu), EIT Digital is focused on entrepreneurship and is at the forefront of integrating education, research and business by bringing together students, researchers, engineers, business developers and entrepreneurs. This is done in a pan-European network of co-location centres in Berlin, Eindhoven, Helsinki, London, Paris, Stockholm, Trento, as well as in Budapest and Madrid.

EIT Digital invests in strategic areas to accelerate the market uptake of research-based digital technologies focusing on Europe's strategic, societal challenges: Digital Industry, Digital Cities, Digital Wellbeing, Digital Infrastructure and Digital Finance.

EIT Digital breeds T-shaped entrepreneurial digital talent focused on innovation through a blended Education Strategy that includes a Master School, Doctoral School and Professional School.

The collaboration between Found.ation and EIT Digital takes place within the framework of ARISE Europe, EIT Digital's implementation of the EIT Regional Innovation Scheme (RIS). ARISE Europe is designed to stimulate regional growth in EU countries where EIT Digital is not physically present with a node. Its objective is to connect local and regional innovation centres and their ecosystems to EIT Digital's Europe-wide ecosystem.



www.eitdigital.eu

FOUND.ATION

Found.ation is a top-notch, privately funded and operated technology venture builder located in Athens, Greece. Originally established in 2011 as one of the first co-working spaces in Southeastern Europe, it now provides a full range of support services for the emerging community of Greek technology enterprises. It is a leading startup-enabling platform for tech-oriented products & services, a digital transformation accelerator for corporations and a tech education hub.

Found.ation helps brands to embrace Digital Transformation unlocking potentials and resources, setting the foundations for future development and accelerating growth, based on innovation. We connect brands, startups, business leaders and young talent in order to create a successful, future-ready entrepreneurship ecosystem in the tech space and across various industries.

The Found.ation team strongly believes in the interaction between established corporations and startups. One of the key roles of Found.ation is to highlight these opportunities for cooperation between these two polar opposites. It already works with companies and organisations such as Eurobank, Papastratos - PMI, Microsoft and the Municipality of Athens.

In 2016, Found.ation started cooperating with EIT Digital, under the ARISE Europe Programme, with the objective of strengthening the Greek startup ecosystem and enhancing the Digital Transformation of local corporations even further. Through the implementation of common, well-structured initiatives the aim of the collaboration is to initiate discussions and enhance cooperation between small and big companies. This will help both startups expand and grow and corporates adapt and evolve. Currently, the collaboration has been extended to include Romania and Bulgaria.



www.thefoundation.gr

Objective €

METHODOLOGY

This report was prepared by Found.ation in order to provide a valuable scope of the Greek business ecosystem, examine the degree to which companies and large organisations have adopted Digital Transformation procedures, and pinpoint the reasons for any delays. The report follows the strategy of selected large organisations that operate in the country and aims at drawing attention to the need for transformation, especially in striving economies such as Greece. A look into the country's DESI indexes and Digital Transformation Scoreboard 2018 is also included in order to offer a context of understanding, in conjunction with a few details regarding the state of the Greek economy.

The major limitation of this report is access to data, as digital transformation is not easily measurable. Similar reports focused on the region are usually based on quantitative research; mostly questionnaires that are sent to companies. This report is partly based on and refers to their findings but goes beyond that in an attempt to give a good indication of insights and outlooks of the Greek scene, its needs and perspectives.

The report starts with a brief definition of what Digital Transformation is and a review of the developments in Europe and the world. It then attempts a short summary of the Greek economic and digital indexes to provide a context of understanding the difficulties faced by Greek companies.

WHAT'S NEW IN 2018?

For the second version of this report about Digital Transformation, Found.ation conducted a survey completed by industry stakeholders from various Greek and multinational companies that operate in a broad spectrum of sectors. The purpose of the survey was to examine the degree to which companies and large organisations have adopted Digital Transformation, as well as identify the extent of knowledge that individual employees have, regarding to Digital Transformation and its practices. Therefore, this updated version offers a better look into the transformation from the employer's point of view, as well as more data to help us understand the situation in the country. For this year, we hand-picked two paradigms, one from the private and one from the public sector, that we believe present an array of best practices.

A new human-centered business REALITY



Filippos Zakopoulos
Managing Partner,
Found.ation

Over the last few years we are all witnessing one of the biggest transitions of our society. Slowly yet steadily we have already entered a 4th ground-breaking industrial revolution. The 1st, and the most impactful up to now, changed the way we lived by introducing new manufacturing processes and creating a large wave of urbanization, the 4th

is already disrupting many industries in the world and is expected to fundamentally alter the way we live, work and interact with each other.

To be fair, we are not yet certain what the exact changes this revolution is bringing to our social framework and our lives are going to be. But looking at our businesses it is already starting to become obvious that things are changing – fast.

For more than 50 years we have been building our companies towards the model of efficiency; research and design of a product or a service are naturally a part of the process, however most of our energy is directed to what comes after. Persuading the people that this is the right product for them, and bringing the product to them as efficiently as possible. Until now, processes have been structured and people have been selected with this model in mind. A model, which nowadays is being disrupted by new tools, brought by the advancements of digital technology. We can now tailor our product to our consumers a lot more successfully than before, even providing what they want before they actually want it. These new tools are now leveling the playing field, allowing relatively new companies that have sprouted out of nowhere to understand consumers with few resources and grow into global companies.

This reality is accentuated in countries like Greece where few products or services have traditionally been designed locally. And this reality is problematic. Things are changing fast, and so is the focus and the skills required. Don't

get me wrong. In Greece we have some of the most competent professionals in the world. But competency doesn't automatically mean success. There is also a large aspect of where the focus is, and what are the available competencies. The whole world is in a process of reskilling itself and we are currently starting from a slightly less advanced position. Most of our professionals don't have experience in developing products using iterative human centered design-led approaches since most of the focus up to now was on efficiency (usually in logistics or sales), branding and marketing.

The people – whether these are consumers, users, or citizens – are at the center. They demand attention and know pretty much what they want and when they want it. In some cases, it is not even a conscious thing – their behaviours betray their preferences. Relatively new companies that are becoming the modern age behemoths (the Googles, Amazons, Facebooks and AirBnBs of the world) know better what most people want before they actually want it.

Thus, in one hand we have new digital tools and real behavioural data that drive the business decisions of new booming companies (startups or startup mentality corporates). And, on the other, we have the “old” economy that still dominates a large part of the business ecosystem. An ecosystem created on a set of refined over the years processes that runs by employees that have been successful based on their insights and on their ability to optimize things.

It is inevitable. The ones who really understand and listen to the consumer will prevail. And in order to comprehend the consumer, we not only need to understand technology, but also to change our approach of how we use technology as a tool to help us design new products and services, and enable us to grasp the real needs and behaviours of the people.

Introduction to DIGITAL TRANSFORMATION

Defining Digital Transformation

In the first edition of this report, we stated that Digital Transformation is not that easy to define, because of the vague nature of this emerging concept. Nevertheless, the concept is starting to catch up and more people are getting familiar with its true meaning.

Even though there are many different interpretations of the term, the definition we tried to give in 2017 is still holding. At its core lies the decision to change a company's organisational culture in order to adapt and follow, as close as possible, the ever-changing technology based on the needs and trends of the global market. The next step is to acknowledge Digital Transformation for what it really is: A path to reach requirements, expectations, goals and growth. A way to create new sources of value, evolve customer relations, involvement and preferences, and enter the playing field as what the market likes to call a “disruptor”.

Digital Transformation is not a specific tool or method, but a vast process that utilises four simple steps: research, formulation, testing, and application. Digital Transformation goes hand in hand with the word Innovation. In a highly changing, competitive world, companies need to be innovation driven in order to succeed, but also to survive.

On the path to optimising their practices in order to offer their clients the best user experience

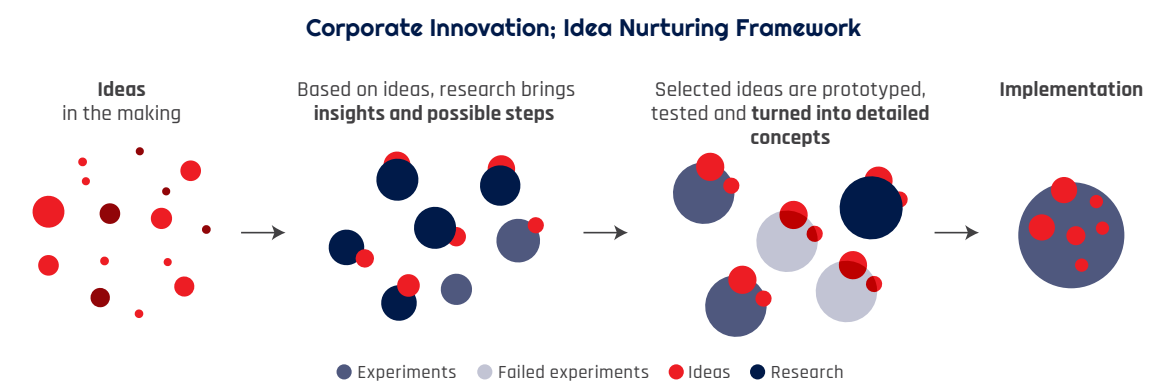
possible, a sound strategy needs to be set. A key element of this strategy is extensive research, which is required in order to map the expectations and the behaviour of the modern digital customer, and align them with the goals and objectives of the organisation. The ability to analyse data efficiently is vital in order to develop sets of information that promote the better understanding of market needs and help the enterprise shape new tactics that will place it one step ahead of its competitors.

However, transitioning from decades of currently obsolete practices to newly-formed and technology-based ones can be a challenging task. Digital illiteracy is the modern plague of professional organisations. At the same time, a large number of employees have been selected based on skills that focus on efficiency, marketing and sales. Injecting an internal ecosystem with new knowledge, changing the foundations of its work and thought process has inherent dangers causing significant alarm in the risk-averse corporate world.

There are four pillars we can identify as the most important ones in this transition:

Strategy

The organisation needs to put its goals into perspective, understanding the speed of change and understanding that success passes through the process of failure. Through this uncertain environment, an organisation still has to identify its objectives and align them with customer expectations and market trends.



A visualization of a process for nurturing ideas towards successful implementation in a corporate environment.

Culture

A company is an organism. In order for it to evolve, its constituents need to evolve as well. It needs to redefine the existing culture by outlining its current status and visualising the connection with the desired destination. The next step is to identify what needs to be done in order to accomplish that. Companies must be more accepting of failure.

User

A happy client is an active client. By understanding clients' needs, a company needs to develop a hub that will communicate what is expected from it, but will also help optimise interdepartmental cooperation. Team building within the scope of new practice incorporation is of key importance.

Technology

The organisation must introduce new practices and newly developed tools, digital or otherwise, in active cases and receive feedback for further optimisation in terms of user experience and internal collaboration. This will promote efficient diversification according to existing market needs.

The low cost of failure today, thanks to technology, allows us to be more agile and experiment more, thus discovering new ways of working and adopting methodologies that support the development of human-centric services and products.

Key reasons to embrace digital transformation

Solving business problems

Developing new innovative solutions and products is core to a modern successful business model. Doing this with external help, either in the form of partnerships with startups or expert teams, is often much quicker and less risky for the company's existing workforce.

Internal evolution

In order to stay relevant, agile and successful in a business ecosystem, one has to evolve. Following new technologies is not enough. Young technological companies are naturally good at staying up to date. The startup ecosystem can also be an important channel to expand business operations into new markets. Even in cases where this cannot be directly applicable, the exchange of ideas and methodologies with these young teams can prove very helpful.

Market diversification

Nowadays more than ever, it is important being able to adapt to the ever-changing landscape of

the modern world and diversify into new market segments and additional customer bases. A more entrepreneurial mindset among employees, lean approaches and fresh thinking are important for a company to stay competitive and always come up with new ideas, products and services that will help its customers - whose market behavior is also in constant change - stay happy and loyal. It's a matter of survival.

Digital Transformation Strategy & Common Practices

Digital Transformation is a journey rather than a one-time project. Depending on the culture and the business model of each organisation, a combination of different actions and strategies can be applied in order to enable the path to transformation. There are some common practices that we can identify, which don't always go by the same name but have similar methodologies and results.

Design-led Solutions

The advancement of digital technologies and digital tools makes the process of designing products and services faster. This agility is what startups use to design and immediately test something in users and redesign it as it goes along. From this, corporate business can learn and solve business challenges. In many cases, teams can solve business challenges and discover innovative approaches faster, when design-led methodologies are applied. Those offer a cross-functional way of working while its process is highly replicable for future teams and projects. At the same time, the very core of design-led philosophy is oriented towards customers' needs thus making sure that critical questions are validated with phases such "prototyping" and "user testing". In addition, its iterative nature allows the flexible mapping of resources and the execution of experiments that are fast and controlled.

Digitalisation

Internal processes are automated using up-to-date software solutions, security can be enhanced, big data analysis offers valuable insights, while various business sectors can be upgraded thanks to cloud storage or updated hardware equipment. Digitalisation should not be an end in itself. But it could be considered a necessary step toward digital transformation, a milestone of an overall strategy.

Innovation Labs / Innovation Bootcamps

Many companies, seeking to accelerate their digital change, hit a barrier in leaders' skepticism about new technologies. Innovation labs aim at boosting

innovation efforts within the enterprise and identifying new markets.

In their quest for innovation, many organisations also benefit from the startup ecosystem, either by directly working with its startups or indirectly learning from its entrepreneurs. Knowing the business models of the new digital economy, the agile methodologies used by startups and the latest trends in the design of digital services, can be a key factor to implement such a transition. Startups have no legacy, neither bureaucratic nor typical corporate constraints standing in their way. These young companies are powered by digitalisation, entrepreneurial spirit and agility to pivot swiftly.

Education/Mentoring Courses

Education courses are an excellent tool for training in new technologies or business models, bringing the senior employees up to speed, and providing professional development for everyone. These courses, however, allow for the attendants to act more passively and they don't have long-term results, if they do not recur or have regular follow-ups by the instructors.

That's why sometimes a more effective method can be "Reverse Mentoring". It offers a valuable opportunity to curb the generation conflict between older and younger employees. Leaders can benefit from the experience of their young mentors and learn during interesting conversations what they think and how they deal with the digital world outside the company. In addition, they get the opportunity to reflect on their own work environment and their own role, understanding from a young employee's perspective. That way, executives have the possibility to benefit from the fresh perspectives of tomorrow's leaders. Mentors benefit from the method as well, as they are given the opportunity to actively participate in the digital evolution of the company they work for.

Internal/External Hackathons

Hackathon programmes are competitions that are specifically used to filter talented teams or individuals and potentially successful ideas. They can be internal or external. The first, specifically

designed to target real corporate needs and challenges, can help employees get to know their corporation better and vice versa. Corporate insights that are combined with external know-how from experts and top-level mentoring ignites successful idea generation and product creation. An internal hackathon involves both the management and the employees, encourages teamwork among different departments and even encourages healthy competition. This boosts creativity and offers valuable training for adaptation to the digital future. In addition by taking advantage of the collective intelligence, a corporation is able to identify in-house talent and ideas that could be a game-changer for the business (collaborative innovation).

External Hackathons usually attract startups, but when adapted to the enterprise's needs, they have the power to accelerate the process of certain digital transformation goals. Their true impact is the extroversion towards a new way of thinking that deals with modern tools and methodologies. Startup mentality is applied to the corporate with multiple benefits that boost entrepreneurship.

Corporate-Startup Cooperation

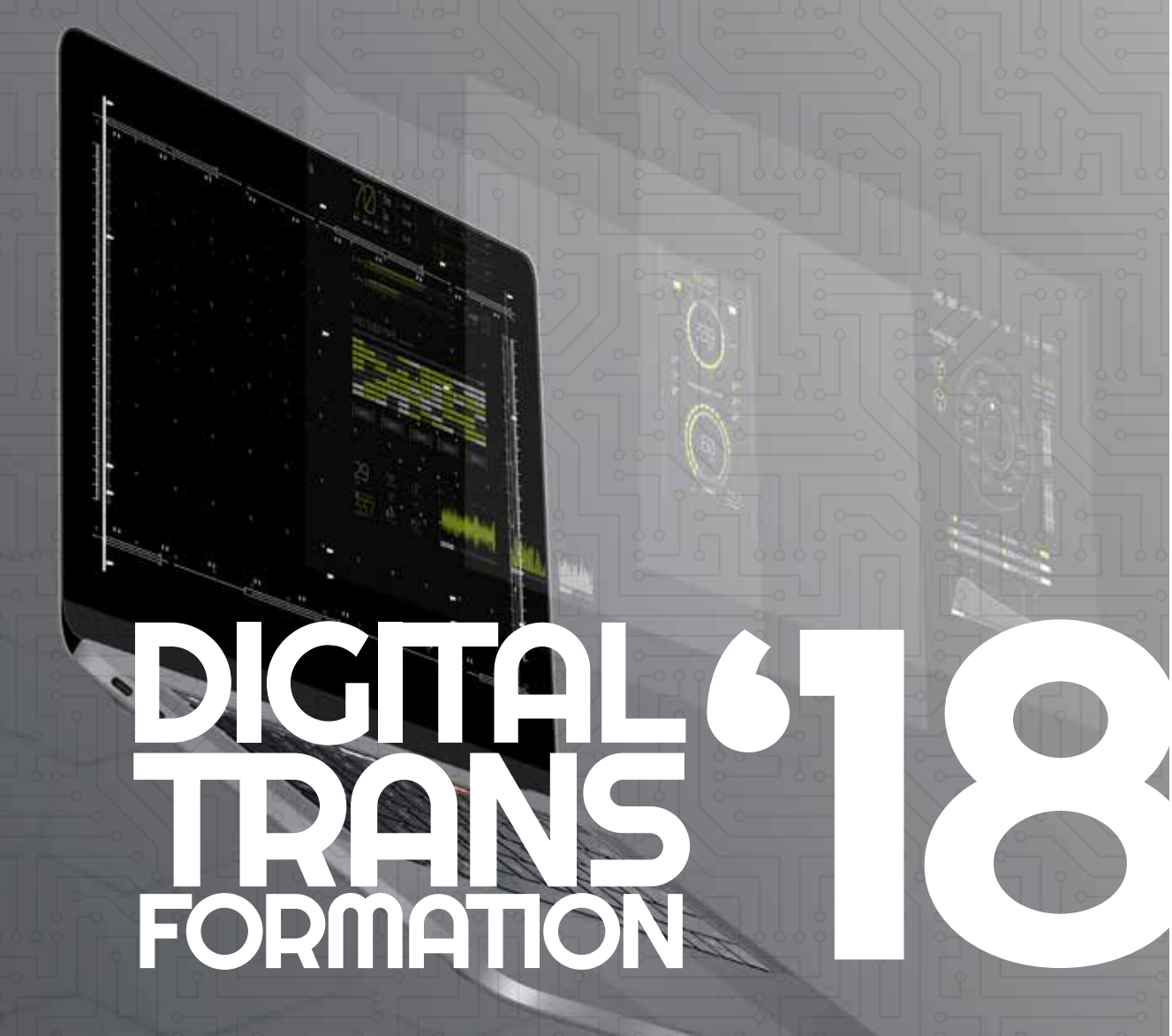
Building external paths into the startup ecosystem for either co-developing or directly acquiring new products and services that will help the organisation's expansion is a very effective way of importing innovation into the organisation rather quickly. Watching how startups operate and face challenges is a very good entrepreneurial lesson. So, instead of building an R&D department, startups lead the way.

Extending the Corporate-Startup Cooperation method, organisations can even invest or acquire the startups that offer promising solutions to their needs. External ideas and people can be combined with the organisation's teams in order to improve adoption of new methodologies and enhance innovation.

Acquiring a startup can increase a large corporation's digital footprint and create a rapid route into new markets and the development of new products/services that can also be exclusive.

Digital Transformation Common Practices and their impact on businesses

	Solving business problems	Internal education	Market diversification
Design-led Solutions	● ● ●	● ●	● ●
Digitisation	● ● ●	●	●
Innovation Labs / Bootcamps	● ●	● ● ●	●
Education / Mentoring Courses	● ●	● ● ●	● ●
Internal / External Hackathons	● ●	● ● ●	● ●
Corporate-Startup Cooperation	● ● ●	●	● ● ●



DIGITAL TRANSFORMATION '18

DIGITAL TRANSFORMATION IN THE WORLD: OVERVIEW

The overall financial value of Digital Transformation in businesses and society is estimated to be \$100 trillion by 2025¹, globally. The majority of enterprises and public sector bodies around the world are riding the high-way lane entering the Digital Transformation era. There's no doubt that it seems to be a one way route, in terms of expanding forward their businesses, goals and accomplishments.

Assisting Digital Transformation in the Private Sector

The result of this journey concerning private sector, is a total facelift upon the aspects and pillars of its overall operational strategy. A fact that may result in faster disruption in the related industries. It's obvious that effectively filling in the "white" space in the rapidly expanding digital markets, can turn out to be one of the largest growth opportunities that an enterprise can exploit today. Executives of enterprises worldwide have defined the acquisition of great technology partners as the most valuable factor that currently assist their organisations to effectively drive Digital Transformation. The support from the top-level management and the company culture follow on, along with adequate budget allocation, skilled employees and senior leadership vision. Drawing a trust-worthy strategy that will nurture both aspects on technology and human factor, will prove to be a key aspect for the successful launch of every Digital Transformation effort.

1. World Economic Forum, Digital Transformation, A new framework for public-private dialogue on digital, bit.ly/2A70iNM

Company Culture as an obstacle

Company culture is considered to be the greatest obstacle globally for Digital Transformation during 2018. There is no doubt that digital transformation is a people-focused project. Unfortunately, staff is usually inadequately equipped, since the majority usually lacks talent, skills, mentality, inclination and motivation. Enterprises that are willing to take advantage of new technology benefits somehow underestimate the need for a new, stronger, and robust digital culture. Top-management may not inform thoroughly or adequately influence their staff in order to adopt Digital Transformation practices or carry out similar efforts. Many organisations, though, have already started investing on upskilling or reskilling their staff in order to support and encourage the implementation of the Digital Transformation project. Knowledge sharing and eligibility are also vital on the path to Digital Transformation. Organisations can potentially save time and effort by adopting a "safe-to-fail" culture, and, at the same time, understanding that agility and adaptability is one of the main aspects in the Digital Transformation journey.

Digital Transformation Global Trends 2018

The reduction of operational costs, the customer experience improvement and the alignment of IT and business strategy are broad goals for organisations that focus on improving their digital presence. The Internet of Things, advanced Analytics, real-time data, edge computing, 5G early deployment, blockchain, Artificial Intelligence adoption, Augmented Reality tools, Location services, atomic pricing in the cloud and identity management are the terms that may be registered as Digital Transformation trends for 2018 worldwide.

Digital Transformation going Local and Public

True digital transformation in both the Public Sector and the Local Administration does not only apply on digitising existing services, but also includes of inventing new ways to motivate, serve and engage citizens. A few examples from the global communities prove the above.

G-Local Administration

The city of **Tel Aviv, Israel**, has broken down the municipality's organisational silos, developing

a central digital knowledge repository that facilitates information sharing among various Departments². Therefore, it created a personalized digital communications network (DigiTel), split according interest, location and life situation in order to contact with its residents. At the same time, the local Authorities encouraged open lines of communication with the inhabitants and allowed their participation in decision-making. It monitored the data related to the digital transformation implying changes if needed, while via iView it transformed the physical places to digital points of interest providing specific information needed. Inculcating employees with the values of transparency, openness, collaboration and innovation, the city started to change from the inside and eventually transmitted the new core values to its residents.

The delivery of value and benefits to residents, staff, businesses and visitors is the ultimate goal of digital transformation initiatives in **Vancouver, Canada**. Thanks to a mobile app (VanConnect) that enables information access concerning city programmes and services, making available online city-related transactions, from anywhere and at any time, Vancouver implemented a digital strategy that improved the wide-picture engagement with the city. Residents are able to submit service requests anywhere, 24/7. They can use their GPS in order to get local, real-time information and events concerning the community. They receive status updates concerning their requests, emergency info and important events at their cell phone. They have the ability to watch live Council meetings and connect directly with the Mayor and the Council. Till date, the VanConnect app has been downloaded at least 34,018 downloads since its launch, 68,786 requests have been submitted via the app, and 65,375 VanConnect issues have been resolved³.

The best practice of Estonia

The **Republic of Estonia** has been described as "the most advanced digital society in the world"⁴ and celebrated its 100th anniversary in 2018. Two decades ago, the access of Internet for the population of Estonia was non-existent and there was no digital data collected concerning citizens. After the appearance of e-Estonia⁵ first initiative (e-Governance) in 1997, the country built its' innovative digital policy during the decade of 2000s, eyeing the upcoming future. Therefore, it created an ecosystem which is now efficient,

2. Forbes.com, "6 Lessons From Tel-Aviv For Successful Digital Transformation Of Smart Cities", <https://bit.ly/2BkqCPU>

3. City's VanConnect app, <https://bit.ly/2Q5WZQZ>

4. Wired, Concerned about Brexit? Why not become an e-resident of Estonia, bit.ly/2Rq9q78

5. E-Estonia, <https://e-estonia.com>

secure and transparent, saving time and money, taking advantage of all the benefits of the digital transformation process. Citizens provide information only once, having a unique ID for their transactions. All government services are delivered digitally (except marriage and divorce certifications, and property purchases) and information concerning salaries is automatically gathered without human intervention. At the same time, personalised medicine is enabled as all health data and prescriptions are digitised. The entrepreneurship is fully supported, as the concerned party needs less than 18 minutes to create a business entity! The country's e-residency scheme allows applicants to establish and manage a company online, gaining access to the EU market. As for the next step for Estonia, it concerns changing a range of basic services into a fully digital mode. In order to remain innovative, effective and successful, Estonia continues implementing its vision, aiming to become a fully safe e-state, available to its inhabitants 24/7.

CHALLENGES

The main challenge ahead for 2019 is the fulfilment of the Digital Transformation goals repeatedly and in a sustainable manner. Business continuity,

customers, culture and employees should be in the epicentre of each and every tech investment in both private and public sector. As challenges form a pattern across various types of transformation, industries and geographies, it is vital to create a vibrant custom strategy based on best practices that will create innovative initiatives and will urge to set an active mindset of change.

The Republic of Estonia
has been described as

**THE MOST
ADVANCED
DIGITAL
SOCIETY IN
THE WORLD**



DIGITAL TRANSFORMATION WITHIN THE EU

The European Commission defines Digital Transformation as “a fusion of advanced technologies and the integration of physical and digital systems, the predominance of innovative business models and new processes, and the creation of smart products and services”.

As Europe is facing the brink of a new-age industrial revolution, future growth results from Digital Transformation. In April 2016 the EU adopted the Digitising European Industry (DEI) strategy, in its effort to reinforce competitiveness in digital technologies against traditional world-class technology countries, such as Japan, USA, South Korea, Germany, India etc., as well as new “players”, like China. In this context, every European enterprise could take advantage of digital innovations, transforming its business model along with its culture and work ethics facing the new era. As recent studies estimate, the digitisation of products and services can increase the annual revenue of the European economy by than 110 billion euros within the next five years².

Companies and organisations seeking to empower their growth plans and strategy, while creating new job posts should hang on and exploit a series of new initiatives, such as transparency and flexibility over the process chain, upgrade of the total quality, as well as integration of customer's needs and preferences into the various phases of development and production processes. This will be achieved only by taking up and further empowering Digital Transformation efforts.

In line with the EU guidelines, every member-state shapes its own digital transformation policy, adopting strategies and initiatives that match their own status and digital level.

Digital Transformation Scoreboard

As the pace of digital adoption differs significantly among EU member-states it results to the widening of the gap. The Digital Transformation Scoreboard (DTS) 2018, presented by the European Commission, monitors the transformation of existing industry and enterprises (especially

in food and construction business segments), providing a relevant view of the current state of European businesses in terms of Digital Transformation and entrepreneurship. Further analysis of the indicators is aggregated through the Digital Transformation Scoreboard in order to provide a comparative assessment of the factors supporting the development of digital transformation in the 28 EU member-states³.

Digital Transformation Enablers' Index (DTEI)

Digital Transformation in EU is also considered to be a case in which infrastructure, access to finance demand and supply of skills are crucial factors for its success. At the same time, e-leadership and entrepreneurial culture are less important. In the Digital Transformation Enablers' Index (DTEI), what is mentioned above is a fundamental condition, while the ranking of the EU members is based on these terms. The gap in the EU, as pointed out through the relevant table, expands to the digital sector as well. Therefore, the Nordics and Western Europe countries are dominant in the field of enabling digital transformation, whilst Southern and Eastern Europe countries are ranking below the EU-28 average score of enabling conditions for digital transformation. However, it is encouraging that countries such as the Czech Republic have risen from the 19th to the 14th place.

Overall EU performance

As EU plans to reform its digital conversion strategy, backing it up with a long-term budget to be invested, its performance concerning the conditions that allow digital transformation has remained stagnant, with the exception of the entrepreneurial culture, in which significant progress has been made. Unfortunately, digital infrastructure has been deteriorated.

The Digital Europe Programme

The EU plans to bridge the digital investment gap, with a long-term budget, dedicated programmes and targeted financial support.

One of the basic goals of the EU is to reduce the digital gap, as described on the Digital Economy and Society Index. Denmark, Sweden, Finland and the Netherlands have the most advanced digital economies, followed by Luxembourg, Ireland, the UK, Belgium and Estonia. On the other hand, Romania, Greece and Italy have the lowest scores⁴.

The need for a full-time plan arises, since digital

1. European Commission, Growth, <https://bit.ly/2qY4b3n>
2. European Commission, Digital Single Market, Digitising European Industry, <https://bit.ly/2rMwTa6>
3. Digital Transformation Scoreboard 2018, <https://bit.ly/2IH0Any>
4. European Commission, Digital Single Market, Digital Scoreboard, Visualizations, DESI, <https://bit.ly/2qXyy6U>

challenges have come across. The European Commission has proposed a new programme, Digital Europe, with a total budget of 9.2 billion euros, that will be implemented in order to shape and support the digital transformation of Europe's society and economy.

Innovation Hubs

European Union recognises the value of Innovation Hubs. Thus, since these Hubs operate like a one-stop-shop, would provide their customers with access to digital technologies and competences, to infrastructure for experimenting with digital innovations, training to develop digital skills,

financing advice, market intelligence, as well as networking opportunities. Artificial Intelligence should have been adopted by public and private sectors, but still the overall cost is quite high, while the staff culture is not oriented at innovation or design thinking.

Data infrastructure and world-class supercomputer

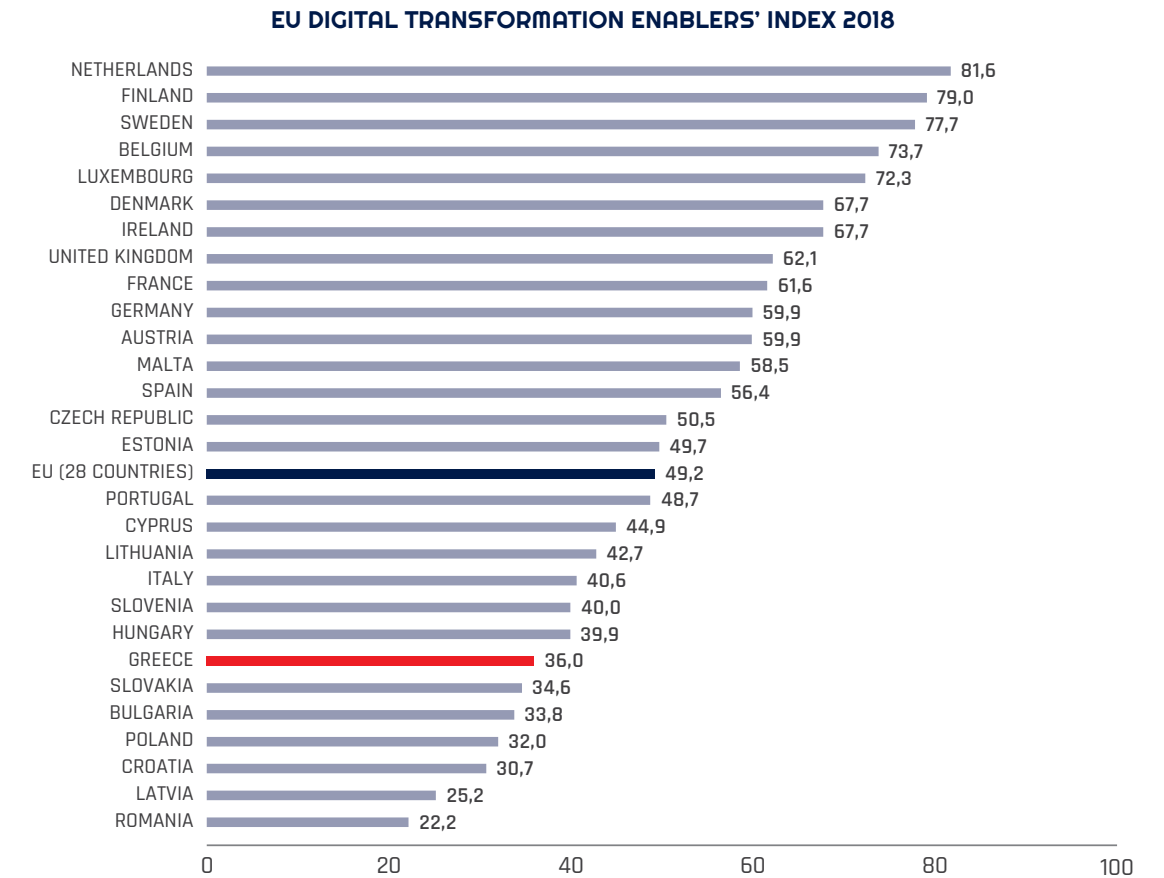
Digital Europe's goals towards 2022/2023 FY (fiscal year) is the development of its own independent and competitive technology (i.e. data infrastructure and a world-class supercomputer), with the aim to further achieve excellence in

DIGITAL TRANSFORMATION SCOREBOARD INDEX SCORES BY FRAMEWORK CONDITIONS (2017 - 2018)

Country	Digital Infrastructure	Investments and access to finance	Supply and demand of digital skills	e-Leadership	Entrepreneurial culture	ICT Start-ups	Digital Transformation
Austria	59 (+2.8)	69 (+6.6)	55 (-8.2)	76 (-1)	33 (+0.6)	35 (-7.6)	39 (-1.6)
Belgium	76 (-0.2)	77 (+2.6)	65 (-15.5)	84 (+13.2)	77 (+44.1)	24 (-13.1)	52 (+1.9)
Bulgaria	13 (-9.6)	34 (+3.4)	30 (+4.5)	41 (+35)	78 (+26.3)	67 (+5.3)	22 (-1.5)
Croatia	24 (+5.7)	14 (+2)	24 (-7.9)	54 (-4.7)	91 (+29.5)	38 (-1.3)	35 (-1.4)
Cyprus	52 (-12.6)	13 (+11.2)	53 (+22.2)	67 (+3.8)	80 (+32.1)	34 (-21.7)	34 (-0.8)
Czech Republic	42 (-1.9)	67 (+20.7)	34 (+11.5)	47 (+4.1)	71 (+60.7)	41 (-10.5)	41 (+1.8)
Denmark	78 (-2.6)	48 (+2.4)	84 (-5.7)	78 (-10.1)	46 (+7.4)	71 (+10.8)	62 (+9.4)
Estonia	35 (-10.8)	51 (+3.3)	47 (+20.5)	54 (-1.2)	78 (+36)	68 (-3.9)	32 (+3.6)
Finland	76 (+1.6)	80 (+8.9)	83 (+12.5)	97 (-2.7)	51 (-8.6)	60 (-0.3)	37 (+1.3)
France	52 (-0.8)	68 (+4.7)	58 (-5.3)	60 (+2.3)	77 (+11.4)	34 (-15.8)	56 (+8.7)
Germany	57 (-8.3)	68 (-10.5)	53 (-14.5)	51 (-12.3)	72 (+39.8)	22 (-29.3)	35 (+0.7)
Greece	23 (+0.9)	55 (+16.2)	24 (+7.3)	19 (-19.5)	58 (+2)	27 (-4.4)	43 (-1.2)
Hungary	14 (+3.7)	51 (+9.6)	38 (+6.9)	35 (-5.6)	70 (+13)	45 (+8.2)	24 (+1.4)
Ireland	60 (+0.9)	37 (-9.8)	94 (+20.7)	86 (+22.6)	76 (+3.1)	35 (-6.9)	24 (+0.5)
Italy	45 (+3.9)	47 (+2.1)	27 (+7.9)	33 (-9.6)	62 (+6.3)	29 (-2.5)	56 (-0.3)
Latvia	16 (+3.7)	16 (-3.4)	18 (-1.5)	37 (-4.7)	80 (+21.7)	54 (-6.5)	33 (+2)
Lithuania	59 (-3.4)	34 (+2.1)	21 (+5.6)	64 (+22.1)	79 (+26.6)	79 (-10.9)	23 (+0.7)
Luxembourg	80 (+1.6)	74 (+1.4)	65 (+9.9)	86 (-0.7)	60 (+12.9)	65 (+22.8)	44 (+0.1)
Malta	67 (-2)	53 (+12)	55 (+15.6)	57 (-14)	71 (+45.5)	75 (-4)	30 (+1.9)
Netherlands	85 (+1.2)	71 (+6.1)	89 (+12.9)	65 (-1.5)	100 (+56.5)	32 (-9.5)	40 (+3.1)
Poland	16 (-3.2)	45 (+1.9)	20 (+7.7)	36 (-8.6)	60 (-7.5)	48 (-12.4)	48 (0)
Portugal	66 (+3.1)	40 (+14.4)	34 (+19.3)	38 (-9.2)	96 (+24.5)	70 (+27.6)	22 (-1.4)
Romania	12 (-3.4)	30 (+15.1)	6 (+5.4)	(0)	91 (+10.9)	62 (+22.1)	43 (-0.1)
Slovakia	37 (+5.4)	46 (+5.3)	11 (-12.9)	39 (0)	63 (+11.9)	50 (-23)	19 (-1.4)
Slovenia	48 (+1.3)	19 (-2)	34 (-3)	69 (-1.4)	79 (+72.7)	52 (-12.9)	30 (-1.8)
Spain	67 (+7.4)	39 (-7.3)	55 (+27.7)	72 (+33)	77 (+8.9)	33 (-3.7)	46 (+5)
Sweden	70 (-9.2)	76 (-7.2)	86 (+1.3)	76 (-12)	75 (+43.8)	76 (+53.1)	42 (+4.7)
United Kingdom	46 (-1.8)	68 (-2)	66 (+20.8)	70 (-0.6)	58 (-25.1)	71 (+9.1)	54 (+2.8)
European Union (28 countries)	48 (-1)	46 (+1.6)	45 (+5.3)	55 (-0.1)	68 (+20.8)	43 (-4.7)	37 (+1)

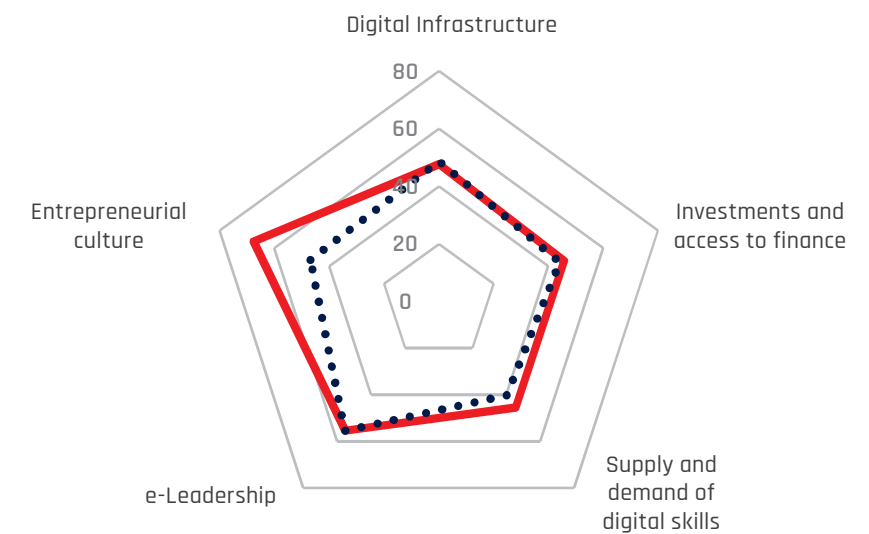
*The table above should be read by dimension (that is by column). It shows the scores per country in a given dimension and their variation in time (value in brackets). The colour code indicates the variation in scores at the dimension level and is calculated based on the value differences between the assessments carried out under the DTS in 2017 and 2018. Dark blue corresponds to the maximum variation, white to the median variation, and dark red to the minimum variation. This heatmap is intended to rapidly indicate, dimension per dimension, which countries have progressed the most.

Source: Digital Transformation Scoreboard 2018



Source: Digital Transformation Scoreboard 2018

EU DIGITAL TRANSFORMATION ENABLERS' INDEX (EU-28 AVERAGE)



Source: Digital Transformation Scoreboard 2018

— 2018 ••••• 2017

applications and to widen supercomputing availability and use. Moreover, in November 2018, the Governing Board of the EuroHPC Joint Undertaking (Euro HPC JU) held a kickoff meeting, attended by executives of the European Commission and the 25 participating European countries, who have undertaken to pool EU and national resources in order to develop top-of-the-range exascale supercomputers in Europe⁵.

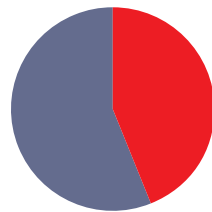
Investing on digital skills

44% of the European citizens between 16 and 74 of age are lacking the basic digital skills that in the future will be required for 9 out of 10 jobs⁶.

The demand for information & communications technology specialists is growing fast.



In the future, **9 out of 10** jobs will require digital skills



At the same time, **169 million Europeans** between 16 and 74 years - 44% - do not have basic digital skills.

Source: European Commission

Seeking to implement the technological transformation into industry, the European Union invests on the right skills for it, carrying out a far-reaching set of initiatives and policies. The New Skills Agenda for Europe has proposed key actions which are still underway.

The Digital Skills and Jobs Coalition provides a strategy for upskilling through training and education, stimulating private investment and ensuring a coordinated use of EU and national funding programmes. In fact, it mobilises all stakeholders (i.e. companies, NFP organisations, education providers, social partners and Member States) to cooperate in order to tackle the lack of digital skills in Europe. During 2018, 18 national Digital Skills and Jobs Coalitions are in place⁷, while

100 organisations have pledged action towards providing digital skills.

ICT Professionals, labour force and European residents in general are the target groups regarding Digital Skills. Major role in the successful implementation of the plan has the education sector in which the Digital Skills and Jobs Coalition invests. The whole teaching and learning process concerning digital skills in a lifelong perspective has to be taken to a forward level. Taking advantage of the latest developments, everyone who resides in the EU, including teachers, will be able to acquire digital skills, receiving the appropriate training in order to pass on their knowledge.

Training students and technology experts in various advanced digital technologies such as robotics, blockchain technology, cybersecurity etc. will be offered through Digital Europe, in the context of specialised courses and internships in companies that deploy advanced technologies through their core business. It's obvious that the use of advanced technologies drives to new, more threatening levels of risk, considering data theft, fraud, and even government destabilisation. Since 80% of the companies in the EU have experienced at least one cybersecurity incident and 51% of European citizens feel not-at-all or not-well informed about cyberthreats⁸, Digital Europe shall provide various forms of infrastructure, such as tools, data and expertise in order to address the origins and propagation of attacks, as well as the means to track and prevent them!

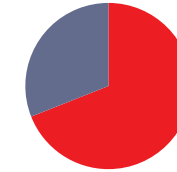
InvestEU

The EU Budget, dedicated to Digital Transformation efforts, implies actions that also promote sustainability, research and innovation, connectivity infrastructure, upskilling and reskilling of the workforce in order for it to be ready while facing the new digital and automation challenges. Under InvestEU, which will run between 2021 and 2027⁹, investments in digital initiatives will be possible under the four strands of the future InvestEU Fund, i.e. digital infrastructures, digital transformation of small businesses, research upon digital technologies and support to social economy benefiting from the digital transformation. As it has been officially announced in 2018, the total amount that is planned to be invested in Research, Innovation and Digitisation is €11.25 billion.

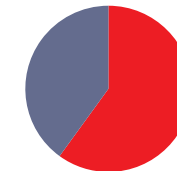
5. European Commission. Strategy, Digital Single Market, News, Digital Single Market, DIGIBYTE (6/11/2018) "A big day for European supercomputing: the EuroHPC Joint Undertaking gets underway", <https://bit.ly/2PbuD80>
 6. EU Budget for the future, <https://bit.ly/2luF4j0>
 7. Skills Agenda for Europa, <https://bit.ly/20YgjXS>
 8. EU Budget for the future, <https://bit.ly/2luF4j0>
 9. European Commission - Fact Sheet, The InvestEU Programme: Questions and Answers, <https://bit.ly/2r48wSN>

Awareness and knowledge

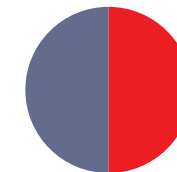
Despite the growing threat, awareness and knowledge of cybersecurity issues is still insufficient.



69% of companies have no or basic understanding of their exposure to cyber risks



60% of companies have never estimated the potential financial losses from a major cyberattack



51% of European citizens feel not-at-all or not-well informed about cyberthreats

Source: European Commission

eGovernment Action Plan

58% of all EU citizens choose to get in touch with their public administration online and the overall online availability of public services is 82%. This indicates that the overall performance on eGovernment in the EU is moving towards the needed direction. Aiming to unlock further economic and social benefits, EU promotes the eGovernment Action Plan for 2016-2020¹⁰. As the previous eGovernment Action Plan (2011-2015) led to the development of technological enablers that are vital in order to facilitate access to and use of public services, nowadays there is a demand to implement the eGovernment in wide-scale. By adopting digital public services, red tape and bureaucracy is limited, while the interaction with public administration is open, inclusive, more efficient, faster, user-friendly, transparent and more cost efficient. Digital solutions can also contribute greatly to strengthening the trust in

governments. Several EU-Member States have developed initiatives at national, regional or local level in terms of their administration and their example is an important step in order to establish Digital Services in Europe.

eIDAS Regulation

On September 2018, the eIDAS Regulation¹¹ (electronic IDentification, Authentication and trust Services) rules on cross border recognition of electronic identification went live. Thus, 450 million European citizens of 90% of EU countries, as well as companies in many countries are, or will soon be, able to use trusted eIDs in order to access securely online public services at national level. This will have a tangible impact on the overall trust and online security of European citizens and companies, and in particular SMEs¹². The early implementation of the mutual recognition principle of European eIDs to access public services introduced by the eIDAS regulation is the eIDAS 2018 Municipalities Project. It enables citizens of EU Member States and EEA countries to electronically prove their identity with their nationally issued eID every time they're seeking access to 300 services in 81 municipalities across the Netherlands. The solution is currently available for Austrian, German and Belgian eID holders, and should progressively be extended to other countries that will be connecting to the eIDAS network¹³.

WiFi4EU

In order to promote free Wi-Fi connectivity for citizens and visitors in public spaces, in November 2018 the European Commission launched the registration period for the WiFi4EU Programme¹⁴. As for the total amount invested in the installation of state-of-the-art Wi-Fi equipment in the parts of cities where residents and employees live and interact on a daily basis, it will reach €120 million between 2018 and 2020. Each municipality, if eligible, will be provided with the WiFi4EU voucher equal to a fixed funding amount of EUR 15,000. Municipalities will select the places where the WiFi4EU hotspots (wireless access points) will be installed. Otherwise, the WiFi4EU vouchers can be used to partially finance a project of higher value.

10. European Commission, Strategy, Digital Single Market, Policy, European eGovernment Action Plan 2016-2020, <https://bit.ly/1SAh0Qj>
 11. eIDAS is an EU regulation on a set of standards for electronic identification and trust services for electronic transactions in the European Single Market, <https://bit.ly/2AdIX5F>
 12. European Commission, Strategy, Digital Single Market, News, 24/09/2018, Moving forward with digital public services in Europe, <https://bit.ly/2NBwPVO>
 13. European Commission, Strategy, Digital Single Market, Factsheet/Infographic, Stories of eGovernment and Digital Public Services in Europe, <https://bit.ly/20RxHBI>
 14. European Commission, WiFi4EU Portal, www.wifi4eu.eu

DIGITAL TRANSFORMATION IN GREECE: PUBLIC AND PRIVATE SECTOR

The Country's Digital Profile

Greece's outlook proved poor considering its position in the Digital Economy and Society Index (DESI¹) for 2018, in comparison to the previous year. Moreover, the country ranks 27th out of the 28 EU Member States and has made slightly slower progress than the EU average over the previous year. It must be pointed out that in 2018, Greece still belongs to the low-performing cluster of countries along with Romania, Bulgaria, Italy, Poland, Hungary, Croatia, Cyprus and Slovakia. Greece's performance in digital public services and digital skills remains low and this fact may slow down the further development of the digital economy.

On the other hand, Greeks are considered to be active users of Internet services. As for the use of social media by enterprises, it is in line with the EU average. 4G coverage has been increased and today is closing in with the EU average. Concerning the transition process towards adopting and using fast broadband connections, it is slower than in other EU member-states, but the use of e-Invoices has progressed to some extent. Additionally, since November 2016, Greece has founded the Ministry of Digital Policy, Telecommunications and Media, and at the same time has designed its National Digital Strategy (2016-2021)², as well as a National Strategy concerning Administrative Reform (2017-2019).

Connectivity

The overall connectivity score of 43.1 places Greece at the bottom among the member-states. While the take-up (69%) is still progressing slowly, the country features wide availability of fixed broadband with 99% coverage (EU average - 97%). Compared to the EU average, prices are relatively high and did not decrease throughout the year.

The transition to fast broadband connections is

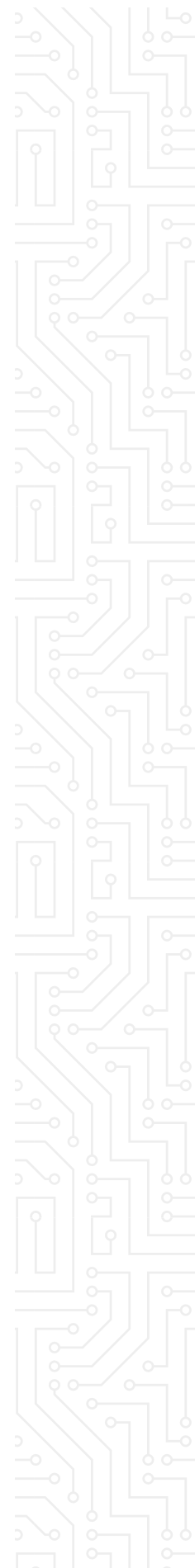
also slower than in other Member States. In mobile broadband, 4G coverage has increased to 88% (EU average: 91%), and despite a 9-point increase (59/100), it remains way below than the EU average of 90/100. Fast broadband subscriptions have been increased by 2 percentage points to 7%, but they remain much lower than the EU average of 33%. The increase of 6 percentage points was not enough to move Greece from the last spot among the member-states in NGA coverage per household (50%) - far below the EU average of 80%.

Despite the fact that the Report for the National Digital Strategy (NDS) describes a slight progress in terms of infrastructure, Greece still lacks ultrafast broadband coverage.

The project for the Ultrafast Broadband aims to increase availability for NGA telecommunication services. In November 2018 the deliberation phase launched in a restricted deadline set by the Greek Ministry of Digital Policy, Telecommunications and Information. However, it can reasonably be expected that as far as NGA network deployment is concerned, the prospects are positive because the market has already entered a phase of deployment, thanks to the new regulatory policies adopted in respect to the markets for wholesale local access and wholesale central access to mass-market products.

The initially accepted next generation network (NGN) plan included two main projects: One "Superfast Broadband Project" for individuals and one for business (small and medium-sized enterprises) and the extension of the Rural Broadband Project. The Superfast Broadband action that ends in March 2019, provides high-speed internet access to citizens residing in areas where private investment and infrastructures are capable of providing such services. Implemented with the voucher method, the beneficiary chooses the services and telecommunication provider depending on his needs.

More than 80% of the Greek Rural Project has already been implemented. In fact, it is a public-private partnership that provides remote and sparsely populated areas ("white" areas) with broadband coverage - gradually increasing to 30Mbps and a future-proof infrastructure for even greater speeds. Its effectiveness is undoubtable, since it has provided more than half a million people with connectivity. The total cost of the project is €199.7 million (€143.8 million of which are EU Structural funds). The goal of the project



is to close the 'broadband gap' between remote, disadvantaged, traditionally 'white rural areas' and the rest of the country, by providing reliable, affordable connectivity services.

Overall, Greece lags considerably behind in relation to the Digital Agenda for Europe goals which are set in the Broadband Strategy. In order to further close the gap between Greece and the other EU member-states, the proper conditions for private investment and the release of further public financing resources need to be created. Having completely transposed the Broadband Cost Reduction Directive in 2017, Greece needs to focus on tackling the major delays in permit granting proceedings and on promoting synergies across sectors to effectively implement the Directive, harnessing the benefits for the rollout of NGA³.

Human Capital

Greece continues to suffer largely from brain drain, a fact that sets important hurdles at the country's financial development. Greece's performance in Human Capital remains well below the EU average, but it is slowly making progress. The percentage of the Greek population using the Internet on a regular basis (67%) turned out to be one of the lowest in the EU, since the EU average was 81%. But still, Greece has the lowest proportion of ICT specialists (1.4%) in the EU, while the share of ICT specialists has been relatively steady over the last few years. The lack of ICT specialists along with the low percentage of people with at least basic digital skills (46%) are key factors for the poor support of the digital transformation of the economy, overall. While Greece continues to suffer from an intense brain drain, addressing the shortage of ICT specialists is crucial in order to support the digital transformation of the economy. According to estimations, the use of ICT is needed in more than 90% of workplaces.

In March 2017, the Ministry of Digital Policy and the Hellenic Open University signed an MOU in order to set up activities to promote the acquirement of basic digital skills by users. SEPE⁴ is also implementing a programme to train and certify young unemployed in the ICT sector.

By accelerating the implementation of the strategy for the development of digital skills, with getting all public sector authorities involved in developing digital skills, and the relevant market players to work together, Greece would be able to benefit from the overall effort. The Greek

National Coalition for Digital Skills and Jobs⁵ has already been formed and from May 2018 it is part of the European policy "A New Agenda for Skills in Europe". The National Action Plan has been already adopted and when implemented, it could help address the digital skills gap, since, as proven, 50% of Greeks lack in basic digital skills. It could also help in digitally transforming the economy and business environment, as well as the society.

Use of Internet Services

Greece is slightly above the EU average. The majority of Greek Internet users engage in various online activities, such as reading news online, watching films, playing online games, using the Internet to communicate via voice or video calls, participating in social networks, as well as listening to music. Moreover, e-transactions with banking institutions via web banking services have been increased during 2017 (36%), but the percentage still remains way below of the EU average of 61%. As for online shopping, it seems to be stagnated at 45% of Greek Internet users.

Integration of Digital Technology

Greece's overall performance in the field of integration of digital technology by businesses is below par, progressing slower than the EU average. The use of electronic information sharing (37%) is above the EU average of 34%, while the percentage of enterprises that use social media is equal to the EU average (21%). At the same time, 60% of companies sell online abroad, even though the total e-commerce turnover of small and medium size enterprises (SMEs) is rather low. The integration of digital technologies by businesses needs to be further strengthened in order to benefit upon digital transformation. Labour productivity and growth may result through the digitalisation of enterprises. An Industry 4.0 strategy for developing specific digitisation plans would give businesses a nudge towards seizing opportunities in all sectors of the Greek economy. The Ministry of Digital Policy, Telecommunications and Media plans to boost investment through National Digital Strategy, in order to develop a powerful national network of digital innovation hubs, while two digital manufacturing platforms have already been developed to help digitise the manufacturing process.

Digital public services

Digital public services are considered to be one of the most challenging areas concerning the digital

1. DESI, <https://bit.ly/1UPeUWV>

2. National Digital Strategy, bit.ly/2Q9JUpC

3. European Commission, Strategy, Digital Single Market, Digital scoreboard, bit.ly/2KegjWz

4. Hellenic Association of Information Technology & Communications - SEPE, www.sepe.gr

5. Greece National Coalition, <https://bit.ly/2Qaduh01>

economy. However, Greece's performance is well below the EU average, ranking last among the 28 member-states. eGovernment users stood at 38% (EU average 58%). On the suppliers' side, Greece made some progress in 2017, with 14/100 pre-filled forms, but it remains far below the EU average of 53/100, ranking 27th out of 28 countries in total.

The National Strategy for Administrative Reform 2017-2019, announced by the Ministry of Administrative Reconstruction, includes initiatives and policies concerning smart administration and the development of an e-public sector, along with the further empowerment of digital skills for human resources in public administration and usage of ICT for administrative and public services. However, to this date, the eGovernment strategy and Action Plan (2014-2020) is still under revision.

The new authentication system, with the launch of a project to set up a digital system for managing documents and workflow, incorporating the

remote digital signatures of future users (citizens and enterprises) is among the projects that the Ministry of Digital Policy has gone forward with. Once implemented, it will allow users to submit a request with an electronic signature and, as a result, digital transactions will be secure, valid and legal.

There's no doubt that gaining the citizen's trust is the first step to be made by Greek public officials. Continuing the effort undertaken to modernise and upgrade the whole public administration via ICT could turn out to be of great value. Setting up digital systems in order to manage human resources in public administration, interlinking information systems throughout Greece's public sector and giving people the ability to use all eGovernment services from a single access point, are a few examples of how the public sector could be digitally transformed, in order to better serve its citizens.

The Public Sector

Greece, as a member of the EU family, is trying to move forward, towards the direction of the fourth industrial revolution. The digitalisation of the public sector has been proclaimed as a crucial element and its detailed goals are fully described in the National Digital Strategy (NDS) 2016-2021¹, as set by the current government. The NDS sketches out the roadmap and the framework leading to the country's digital development. Its current aim is to maximise the benefits and minimise or even eliminate any threats occurring from the Digital Transition.

In order to successfully digitally transform Greece's Public Sector, emphasis has been given to its main pillars, such as infrastructure, security and upgrading digital Public Services. The goal is to achieve efficiency and effectiveness during the implementation of the NDS, until 2021.

The NDS, also, focuses on areas such as the acceleration of the digitalisation of the economy, as well as the empowerment of human resources with a series of digital skills.

Infrastructure

Actions for improving the needed infrastructure have been taken, such as the implementation of vectoring technology. The Hellenic Telecommunications & Post Commission has launched the process of assigning areas to telecommunications providers (i.e. OTE, Vodafone, Wind) in order to implement the vectoring technology that allows high-speed services (over 100Mbps) being delivered to consumers. Network providers undertake specific areas and invest in infrastructure development and deploying NGA networks, within a pre-scheduled timetable. Within the context of the first assignment, the three-round application procedure has been completed by the telecommunications providers and their plan covers almost the total of Greek urban territories.

The Ultrafast Broadband and the Superfast Broadband actions² aim to develop broadband infrastructure across the country. The Superfast Broadband action that will last until March, provides high-speed internet access to citizens residing in areas where private investment and infrastructures are capable of providing such services. The beneficiary, is granted with a voucher, in order to choose the services and the

telecommunication provider depending on his needs.

Ultrafast Broadband, yet not implemented, aims to increase the availability of NGA telecommunication services - for rural and suburban areas with no access to high-speed internet to at least 100Mbps, and for urban areas without high speed internet access to at least 100 Mbps, upgradable to 1Gbps. In November 2018, the project was in the deliberation phase following a restricted deadline set by the Ministry of Digital Policy, Telecommunications and Information.

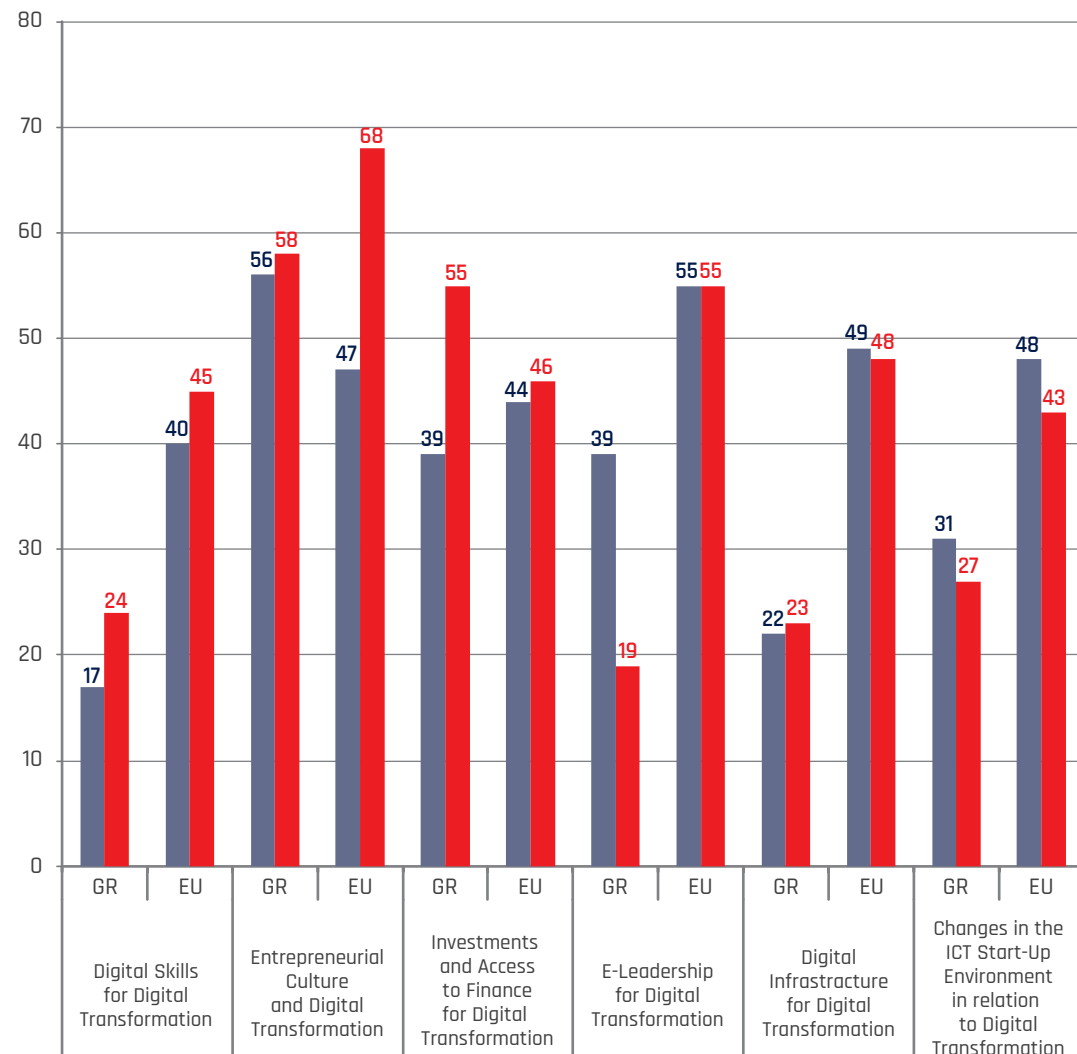
Security

Security issues that have been formalised by the General Secretariat of Digital Policy, are concluded in the "National Strategy for Cybersecurity" and will be adopted during the overall process of Digital Transformation in Public Services. As the use of Internet, as well as Information & Communication Technologies (ICT) are booming in every aspect of the Public and Private Sector, the government is focusing on the creation of a secure Internet environment, that will also nurture the installment of proper infrastructure and services that will lead in gaining citizens' trust. It is obvious that the use of digital products and services at both the Public and Private Sector will be further empowered. The ultimate goal is to achieve financial stability and flourishing of the country through the use of new technologies and associated initiatives, strategies, solutions etc. By defining the main principles, the strategic objectives and the framework of the much needed initiatives, the "National Cyber Security Strategy"³ seeks to create new boundaries on the use of Internet in Greece. The basic goal always remains to achieve the digital transformation of the State, that will improve the public services provided, along with the rational use of information resources. Today, prosperity, national security and the safeguarding of fundamental rights and freedoms are based on open and free Internet access, integrity, confidentiality, availability and durability of the ICT systems.

A series of conventions and conferences have been held nationwide in order to educate and inform the users in detail (i.e. Public sector employees) upon security issues. Moreover, Greece officially participates in meetings, conferences and conventions concerning Cybersecurity. In November 2018, the Greek delegation participated in the 37th Meeting of Executive Level Officials for Digital Transformation organised by the OECD.

1. National Digital Strategy 2016-2020, <https://bit.ly/2Q9JUjP>
2. Report for the National Digital Strategy 2016-2020, <https://bit.ly/2DQGHpZ>
3. National Cyber Security Strategy, <https://bit.ly/2QZ1k5q>

DIGITAL SKILLS FOR DIGITAL TRANSFORMATION



Source: Digital Economy and Society Index

■ 2017 ■ 2018

Digital Public Services

At present, the restructure of Digital Public Services is underway. The modernisation of the public sector's IT infrastructure has been completed in 2017, by the private company InfoSoc S.A. in partnership with the General Secretary for Information Systems and Administration. The configuration of the G-cloud Action Plan in the context of formatting a National Strategy for the cloud infrastructure in the Public Sector, is considered to be the next step.

The official Digital Transformation of the Greek Public Sector, according to NDS, also includes multiple Ministries with a variety of objectives, such as health, social security, transportation, entrepreneurship, justice, trade, education, agriculture, media, civilization, tourism, immigration, etc.

More than 220 relevant ICT projects compatible with the NDS, with a total budget of €800 million, have already been approved⁴ despite the fact that Greek red tape sets a series of obstacles concerning the fast-pace implementation of Digital Transformation policies and initiatives. Since the public sector is characterized by a lack of willingness and resistance to change, its stance can be considered as a high-key hurdle during the phase of the procedures and tasks that need to be implemented. Till date, a series of projects are underway, such as the agricultural sector digital transformation, the centralised document handling system among 21,000 government bodies, the digital signature and the barcode information tracking system. Nevertheless, due to the strong intervention of the State in the way of doing business in Greece, there is the need for a robust and clear message of will by the political staff via law reforms, uptaking initiatives that adopt innovation in various forms, as well as a thorough cultural change.

Digitalisation of the financial environment

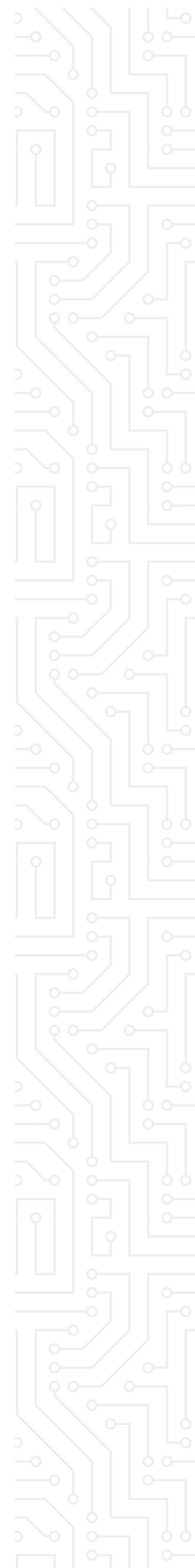
During the first half of 2018, the Hellenic Ministry of Economy and Development launched a State Program which aims to technologically upgrade small and medium-sized enterprises. However, just upgrading the equipment, Internet connection and creating an e-shop is not enough to promote the cultivation of a fruitful Digital Transformation culture.

On the other hand, the launch of the new fund-of-funds programme in Greece, the "EquiFund"⁵, that addresses the SMEs need for a vibrant private

equity and venture capital ecosystem in order to thrive, allows entrepreneurs to receive the crucial financing they need in order to further grow their businesses. Through "EquiFund", the availability of financial resources for enterprises operating in the ICT sector and innovative technologies has become a reality. This is an approach that indicates the major role of start-ups and entrepreneurs in assisting and promoting Digital Transformation.

In order to successfully digitally transform Greece's Public Sector, emphasis has been given to its main pillars, such as
INFRASTRUCTURE, SECURITY AND UPGRADING DIGITAL PUBLIC SERVICES

The announcement of the Digital Transformation of G.E.MI (General Electronic Commercial Registry), that took place during Q2 2018, is a huge step against bureaucracy. G.E.MI. offers a modern and updated centralized database consisting of business registries, contributing immeasurably in reducing red tape in relation to creating or changing a business registration and the publication and submission of "corporate information" certificates for almost all transactions of a company. The transition from the current -primarily- manuscript mode in terms of data processing to a single automated processing environment, shall result in higher efficiency level for all parties involved. Furthermore, it provides a user-friendly online environment with a variety of search criteria, improving the publicity of enterprises through the structured presentation of information and data. The goal is to make it possible for companies of all legal forms to be established electronically via the one stop platform e-YMS, by the end of the first quarter of 2019. The service went live in July 2018 and since then, a total of 784 companies have registered through it. 90% of the applications have been completed within one day, with the shortest duration of the completion of the process being 9 minutes and the average duration being 19 hours. Most companies have been established in Attica (453), with Thessaloniki coming second (80).



The creation of an electronic legitimisation file of the company, the interoperability of G.E.MI with other systems, such as banking and the National Electronic Public Procurement System (EIDHR), as well as the public availability of open data for the creation of new applications in the private sector are all mentioned. All these efforts are aiming to make the Public Sector agile and flexible, more friendly and valuable towards citizens, addressing their various needs.

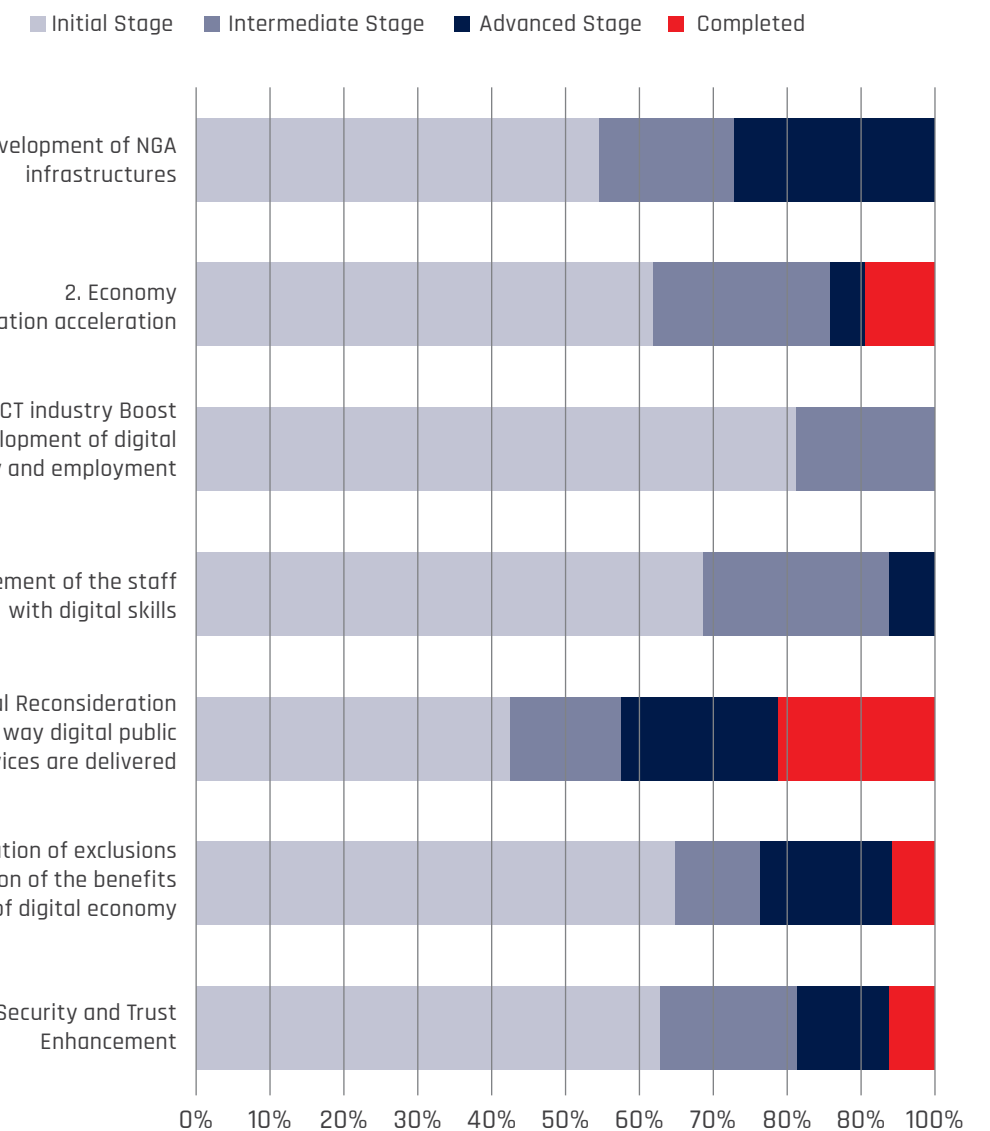
Empowerment of human resources with digital skills

Actions related to fostering and support of innovation, the enhancement of digital skills at schools and in terms of lifelong learning are the groundwork on which the cultural change is being built, following a rather slow pace. Moreover, it may be an attempt to deliver cultural change concerning

new technologies throughout the Greek society, despite the fact that the data based of the EU Digital Economy and Society Index reveal a totally different reality. Thus, Greece ranks 27th out of the 28 EU member-states and its standings regarding digitalisation has deteriorated in comparison to 2017. Greece, till date, has not achieved the desired progress in comparison with the other EU member-states and progressed in a rather slower pace compared to the EU average, in the last year.

The formation of the Ministry of Digital Policy, Telecommunications and Media at 2016, and the mapping out of both the National Digital Strategy (2016-2021) and the National Strategy for Administrative Reform (2017-2019), may be considered as proper steps towards the desirable direction, but they still are not enough to provoke disruption within the Greek public sector.

GREECE'S PROGRESSION STATUS OF IMPLEMENTATION ACTIONS



Source: European Commission

4. Mindigital.gr, News Article, <https://bit.ly/2Tu4la3>
 5. EquiFund, equifund.gr

Local Administration

As Greece is trying to move forward and accelerating its efforts to achieve financial stability and expansion, after the completion of the bailout memorandums, the country's local authorities seem to have realised that Digital Transformation is inevitable. Therefore, they went back to the drawing board in order to make their vision reality, designing the cities of the future. Till date, the results seem to vary depending on each region of the country.

Athens, the European Capital of Innovation 2018

In this context, Athens has presented in 2018 a series of new social innovation initiatives. By granting Athens, the European Capital of Innovation (iCapital) Award 2018, along with a €1 million money prize, Europe stresses and highlights the continuous efforts by the local authorities of the Greek capital city. And this, despite the reduced government funding, due to the austerity policies, memorandums and strict fiscal measures been taken.

Moreover, the Greek capital presented the "Curing the Limbo" programme, through which it has managed to give refugees and underprivileged citizens the chance to afford housing, develop work skills or even find employment. Additionally, the Digital Council formed a coalition with private partners in order to support digital literacy (e.g. Start Project¹) and foster civic technology, with initiatives such as Athens Digital Lab.

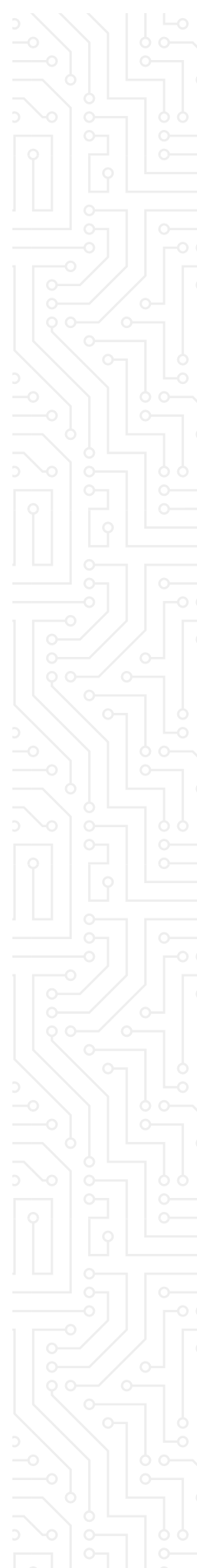
Athens has gone over and above just implementing a series of technical measures for the support of the city services, since it also cultivates a fertile ground to kick off communication among city authorities, municipal agencies, cooperating industries, partner organisations and citizens. This initiative is trying to emphasize upon the interoperability of digital services, the openness of data, the ease of implementation, while providing a unified, holistic format for policy and decision making.

Local Administration efforts

Transforming into a cutting-edge smart city, requires professional-trained staff, and at the same time strong will in order to apply changes aiming directly at the mentality of the residents, in order for them to become actively engaged in the changes, as they unfold. The central government has officially launched the programme for the digitisation of the Local Administration's operations named as "Organisation and Operational Modernisation of 325 Municipalities and 13 regions"², with a total budget of 30.5 million Euros and a time-frame deadline that expands till 2023.

On May 2018³, the Central Union of Municipalities of Greece pointed out the delay on the implementation phase, emphasising the infrastructure that has to be developed in order to fulfil its mission. G-cloud⁴, Helpdesk and the rest of authentication platforms still remain incomplete tasks towards a strategy that aims to empower the digital skills of the citizens, motivate the citizens to take part into decision making, enhance a smart model of government and create a smart city infrastructure that will ensure access to data and new technologies.

It is fair to say that the Digital Transformation efforts at municipalities are disappointing. According to a survey⁵ conducted by the University of Aegean in cooperation with the Central Union of Municipalities of Greece, only 14 of the Municipalities that were evaluated scored between 6 and 7 (maximum grade of 10) after being assessed for their performance on digital reform and e-government according to European Commission standards. At the same time, a rather sizeable number of Municipalities, considered to be 150 to 160 in total, have expressed their willingness to upgrade their services. These seem to enjoy the status of having enough staff available, but also point out their need to be further assisted and supported. Moreover, 85 small municipalities, mostly on deserted islands and mountains face serious problems - such as low absorption of EU Funds etc.



Digital Cities Challenge

To date, only a few municipalities seem to be making efforts to reach their Digital Transformation destination by participating in the Digital Cities Challenge (DCC)⁶. The tailored program of coaching and facilitation, launched by the European Commission, offers aid to 41 cities in order to develop and implement digital policies that can transform everyday life aspects of their residents, businesses, workers, and entrepreneurs.

Thessaloniki, Patra and Kavala are among the 15 Challenge cities that between January 2018 and June 2019 will receive the support needed to take full advantage of the fourth industrial revolution. The goal is to become better places to live by fostering innovation and productivity orientation.

Thessaloniki aims to be transformed in an integrated, open and participatory "platform" with the aid of ICT. The second largest Greek city in terms of population, which resides in the northern part of the country, is planning its transformation as an interconnected city for everyone that uses data, is participatory and supports digital innovation. By founding "OK!Thess pre-incubator" in collaboration with universities and business associations and by forming strategic partnerships with relevant organisations such as OKFN, Greek Free and Open Source Society etc. the city declares its support towards innovation, relying on it as a key-part of its future drive. The development of e-administration platforms along with the plans to make non-personal government data freely available for everyone to use and republish are valuable steps in order to increase the civic participation. By joining European programmes for digital innovation (H2020), entrepreneurship development, energy consumption management, environmental protection and refugee flow management, the framework within which Thessaloniki hopes to build its own Digital Transformation profile will be completed.

Being considered as a major sea-trade hub, the overall objective of the city of **Patras** is to become an innovation hub. It's more than common ground that through new technologies, its residents may improve their everyday lives in various aspects. In this context, increasing awareness actions is a one-way route in order to achieve the turning point in citizens' mentality. Therefore, a series of pilot projects in areas such as open digital infrastructure, e-government, smart power meters, sustainable transport etc. have already been designed, and the next step is to implement them within specific timetables and funding sources.

Agriculture and fishing, tourism, tech,

entrepreneurship and sustainable city are among the strategic directions that the city of **Kavala** has defined in terms of Digital Transformation's main pillars of interest. Having received a 1st place governance award at the 2017 Bravo Sustainability Awards, Kavala's intention is to heavily invest in innovation, as a game-changer of the everyday life of the municipality's residents. The implementation of its strategy not only includes formal initiatives like cooperation with academia and research, but also informal actions such as start-ups and tech community gatherings. The set up of a creativity, innovation & entrepreneurship co-working space, in order for the people involved in local growth initiatives & projects to have a dedicated meeting and co-working space is one of the main goals that the city of Kavala has set. After all, as start-ups lead the way, municipalities like Kavala can invest in them, in order to exploit the proper innovative solutions that will suit their needs, despite the obstacles of bureaucracy and mentality of resistance to change.

Trikala, Heraklion and Athens also participate in a series of Digital Cities Challenges (DCC), as Fellow cities. They are invited along with other 17 EU cities in order to further engage with the digital transformation initiative, utilizing their own resources.

Trikala may be an agricultural city, but it's distinguished among Greek cities for its innovation and digital aspect initiatives. Since 2004, when it was named the "first Digital City in Greece", the city is dominant in that sector, undertaking a series of Digital Transformation initiatives and efforts. "Smart Trikala" projects, such as open data access, data farming systems, e-KEP (Automated Citizen Service Centre), Mobile Check App, Smart Lighting System, Smart Parking System, Smart Home, Environmental monitoring system, Smart+Connected Digital Platform, Smart City Management Center, City lights traffic monitoring system and 5G enhance transparency, increase the residents engagement and support local sustainability. Therefore, Trikala is considered being at the forefront of digital innovation in terms of Greek local authorities and administrations.

Heraklion, on the island of Crete has suffered from brain drain and from the fact that enterprises have moved abroad, during the Greek recession. In order to effectively encounter this reality, the capital of Crete continues to emphasize on tourism and agriculture, which are with no doubt the most important pillars of its economy. Since the local authorities have expressed their thoughts in empowering its competitive edge, Heraklion should channel its efforts in order to emerge as a leading hub, positioned in the south-eastern

1. The START project aims in transforming education in a cohesive network that will contribute in the development of the local community and the overall upgrade of the area by boosting entrepreneurship and the creation of new ideas, as well as the constructive exchange of concepts and cultural values between individuals, regardless of their differences in terms of age, origin and religion. For more info please visit: www.startproject.gr/en/
2. Voria.gr, News Article, "Charitsis: Municipalities' Digital Transformation benefites the citizens", <https://bit.ly/2KiFyqU>
3. Central Union of Municipalities of Greece, "Reformation of Local Administration", <https://bit.ly/2Fyt7lQ>
4. Government Cloud, www.gcloud.ktpae.gr
5. Dikaialogitika.gr, News Article, "Municipalities' performance in digital transformation", <https://bit.ly/2qUafTs>
6. European Commission, Digital Cities Challenge, www.digitallytransformyourregion.eu

Mediterranean region.

Being awarded as the iCapital for 2018, **Athens** has clearly defined that Digital Transformation is going to affect the whole city, inside-out! As referred by Konstantinos Chambidis, the Chief Digital Officer of the Municipality of Athens, at last year's "Digital Transformation in Greece report", the City of Athens has decided to implement a Digital Transformation strategy in order to improve the citizens' life quality, to further strengthen citizens' engagement and to emphasise transparency and Governance⁷. As for the five pillars on which this strategy expands, these are the city's network, digital governance, engagement, digital education, entrepreneurship and innovation.

Challenges ahead

It is common ground that the upgrade of the organisational and operational aspects concerning the Greek local Authorities services is more than imperative. Thus, realizing the huge advances that they can achieve in terms of operating in a much more efficient mode, offering its citizens better services, being more active and prompter, in a financial-sensitive appealing manner. There are three main pillars on which municipalities should focus in order to achieve their overall Digital Transformation goal: Digital Technology, Change of Culture and Innovation. As time goes by, the main task that municipalities should uptake and execute is achieving quick-wins, while at the same time implementing a well-designed and robust strategy, which will ensure the successful completion of the Digital Transformation efforts and will lead them to pave the path towards the new era of Smart Cities.

Digital transformation in the Private Sector - an ongoing process

Digital Transformation is no longer a business trend. The Greek Private Sector is now following the current world trends. Greek enterprises have realized that Digital Transformation is not only relevant with technological issues. The creation of business innovation fully depends on the change management and the soft skills of an enterprise.

Investing in knowledge and in order to assist on the Digital Transformation process, SEV

(The Hellenic Federation of Enterprises) offers educational services to the Greek enterprises, so as to become digitally competitive and to adopt immediately advanced digital practices across their range of activities. Businesses from various industries have taken up initiatives towards digital transformation.

Very few surveys regarding digital transformation in the private sector have been conducted in Greece during the past three years, and they all conclude on the fact that enterprises realise the need to transform, but are not quite there yet. One of the most complete, by Stanton Chase¹, estimated that the maturity of digitalisation in most organisations is at a Standardised stage (27.9%) and more importantly, at least one fourth of the organisations have reached a Dynamic level of Digital Transformation.

For the first time, Found.ation conducted its own survey targeted to the Greek high level profile corporate executives in order to sketch-out the reality concerning Digital Transformation in their organisations and businesses. The survey was sent to and completed by senior professionals employed at large Greek and multinational corporations that have showed interest in the matter. Regarding demographics of the survey, the vast majority of the participants were men (75%), in their mid 30s (35-44 years old) by 51.7%, that are part of the managerial staff (64%), with 17 years of corporate experience (on average), and holding a Masters' degree (76.7%).

What is more than clear is the interest of modern Greek businesses in every aspect and project tied or engaged with innovation and the process of Digital Transformation. They seem to realize that this is a way to achieve growth and open new expansion opportunities, to improve, and in general, to change in terms of inner organisational and operational procedures. Moreover, they facilitate it as a crucial factor to modernize their stance and modus operandi through the use of technology.

Based on the executives that participated at Found.ation's survey, seeking new growth opportunities, changing the way that they operate, and understanding new technologies are the top 3 reasons why they believe their organisations embrace Digital Transformation. It must be pointed out that the answers that follow are also related to improvement and streamline of the overall daily activities, since participants stated that Digital Transformation is a means to modernization, to



overcoming financial challenges and reestablishing their position as leaders.

Digital Transformation is a reality in Greece, not a "wannabe" wish anymore

Today, Digital Transformation is not in the phase at which it's expressed in good wishes or plans without a visible time frame for implementation. It is a tangible reality. At the same time, more businesses have included it in their immediate plans. The executives surveyed, in an overwhelming rate of 82% responded that their company already execute projects that are part of a broader Digital Transformation roadmap, while a rather respected rate of 11.5% claimed that they have not implemented anything relative to date, but they are planning to do so in the nearby future.

Despite the fact that Greek companies are taking off in terms of their Digital Transformation efforts and are eager in relative project implementation, the slight majority (50.8%) states that their organisation does not have a department clearly focused on digital innovation. It is however encouraging that a rather large percentage of 49.2% has created such a department.

A quite interesting finding of the survey consists upon how the executives grade their enterprises' ability to undertake challenges that incorporate a digital transformation flavor. They classify it from "Basic" (41%) to "Good" (37.7%), while a collective percentage of 15.3% believes it's "Low" (14.7%) or even "Very Low" (1.6%). Only a promising 4.9% grade it as "Advanced".

Transformation of its business model is part of the company's vision

On their digital transformation journey, the companies have to treat common childhood illnesses and to overcome obstacles. The majority consider resistance to change as the number 1 challenge, followed by processes and operational changes, and lack of relevant skills and expertise. Connection with KPIs and goals, absence of solid leadership, poor funding resources are the ones that come next. It must be pointed out that challenges such as lack of data, adoption of new technologies, time management and lack of vision ranked last.

By 67.2% they mention that their company's vision includes the transformation of its business model, while a 13.1% state that they are not aware of anything relevant.

The executives surveyed prove to be extremely mature and deeply aware of the need to incorporate transformation deep into the employee culture and to discover new growth paths, although the top reason remains the optimization of their company's business. Following on, the participants stated that Digital Transformation fits the least in the goal to increase the company's survivability. This proves that executives fully understand Digital Transformation as a way to drive their company into a more prosperous future. The above are based on a common factor, the staff, and a crucial factor, change. Theoretically, these two terms sometimes are on the opposite sides as upskilling or reskilling is not an easy task. 39.3% of the executives consider the employees' mentality concerning the reception of change, as well as the adoption of new ways of working, use of new tools etc. as "Typical", while a large percentage of 26.2% characterizes it as "Good", and 24.6% as "Low". The response "Very Supportive" was selected by just 9.8% of those asked.

Corporations are receptive towards external help and assistance

In order to accelerate their efforts, the executives are prominently in favor of cooperating with external partners and consultants, as well as taking up outsourcing process by signing cooperation agreements. Based on the results of the survey, a combined percentage of 73.6% are likely (39.3%) or very likely (34.3%) to establish partnerships with external experts and professionals that have the proper knowledge in order to step up their Digital Transformation efforts. At the same time, there's a rather large percentage (19.7%) within the Greek corporations that has not made up their mind yet on how to make their next step and towards which direction. This, while a shrined 6.5% (very unlikely-4.9% or unlikely-1.6%) that declares the unwillingness of the organisations to look for external assistance and help.

The realistic and fully professional approach on behalf of companies is also reflected by the fact that the overwhelming majority plans an integrated and long-term strategy, including the recruitment of new staff directly linked to innovation and the overall digital transformation. As stated at the survey, they are likely (37.7%) and very likely (24.6%) -a joint percentage of 62.3%- to hire new personnel in order to enhance the efforts related to innovation and digital transformation aspects of the business. At this point, it should

7. Digital Transformation in Greece, December 2017, The Foundation p. 24-25. bit.ly/2Q851sh

1. Stanton Chase, Executive Newswire 17: Digital Transformation, <https://stantonchase.com/athens/newswire-17/>

be noted that a rather large chunk (24.6%) of the Greek corporate world consider neither likely and/or unlikely to hire.

Investing in innovation, digital tools, and in fast-moving, creative mentalities

Undoubtedly, the gaze of those responded to this survey is focused solely on the future, wishing to prepare and secure their structures and operations while optimizing their competitive edge to the maximum. Therefore, the adoption of innovation mentality (63.9%), the use of modern digital tools (36.1%) that will facilitate and simplify their efforts, the adoption of new methodologies (32.8%), as well as the ability to move fast (32.8%), being creative (27.9%), that will lead them to approach to the expected final result are considered aspects that will provide benefits.

It is also indicative that the segment of their operational landscape (29.5%) is the one that is urgent to be changed via digital transformation efforts. As for business development (16.3%) and marketing (16.3%), they follow with a rather big distance. All three are considered as key areas for strengthening the presence of a business on the market, with its following transformation. As for other crucial business departments such as Sales and IT, they both tie in 4th place with 11.5%, respectively, while Management and HR (6.6%, respectively) seem to have limited to minimum importance. Nevertheless, the weight is distributed completely differently when respondents are asked to identify the most receptive business sectors towards digital transformation policies and strategies. They point to IT (27.9%), Management (19.7%) and Operations (16.4%) segments, followed by HR department (11.5%), Business Development and Marketing (8.2% and 9.8%, respectively). IT, management and operations are considered as the digital transformation cornerstones for the vast majority of the survey participants. Trying to outline their deeper thoughts, the scheme is more than obvious: IT takes care of all tech-aspects, management paves a fully operational and fruitful path, while the operations turns into reality and implements strategies and policies.

Yes, there are threats, but also ways of effectively managing them

Business executives seem to be fully aware of the current status of the digital transformation environment. At the same time, they realize that there are threats and points that require greater attention, yet they have full knowledge that there are several ways to successfully manage them.

The vast majority (73.8%) claims that there are potential risks tied to Digital Transformation in comparison to those (19.7%) that don't believe that there're any significant concerns to take in mind.

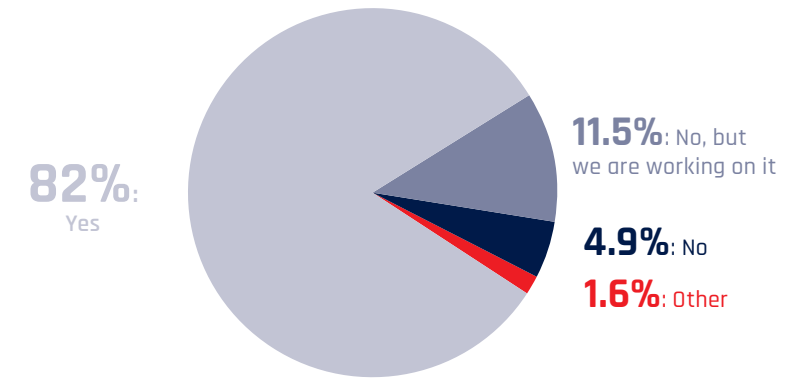
As for the role of data in Digital Transformation activities, the enterprises seem to be open and willing to gather, process, analyse and exploit them in order to empower their efforts. So far though, they rely more on operational data from a wide variety of systems, such as CRM, ERP etc. concerning multiple business divisions and aspects (i.e. sales, transactions, reports etc.) and data from traditional research rather than metadata generated from algorithms, data science processing, machine learning etc. This points to a lack of understading on behalf of Greek corporations of the power of modern behavioral data gathering and analysis, that new age startups and tech giants like Google, Amazon, Apple, etc. are heavily utilising.

In terms of the organisation's maturity upon gathering and analysing their data, the executives graded their companies with a basic (45.9%) to good (29.5%) grade, while at the same time they didn't hesitate to go ever further, characterizing their strengths in this part as "advanced" (21.3%) and even "cutting edge" (3.3%).

DIGITAL TRANSFORMATION IS A REALITY IN GREECE
and not a "wannabe" wish anymore



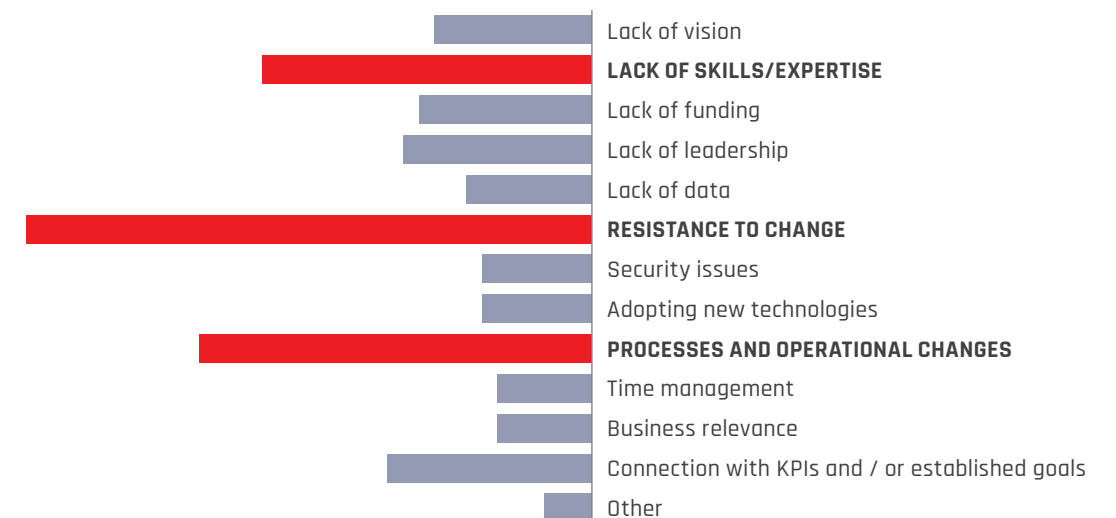
Q: Does your organisation run projects that include a Digital Transformation scope or are part of a broader Digital Transformation roadmap?



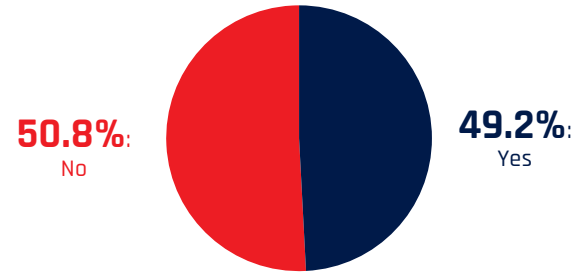
Q: Why is your organisation embracing Digital Transformation?



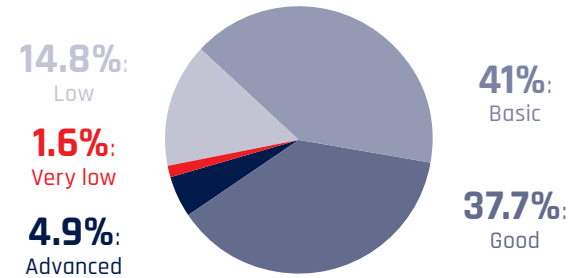
Q: Choose the three greatest challenges that your organisation usually faces during digital transformation efforts



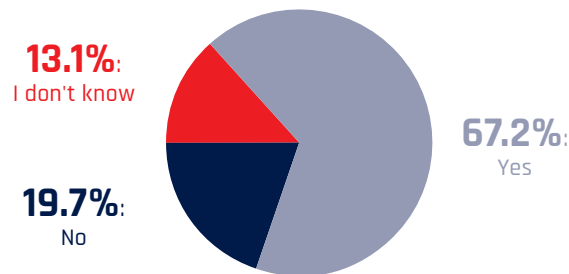
Q: Does your organisation have a department with its main role around Digital Transformation and/or Innovation?



Q: How would you classify your organisation's current ability to undertake challenges that include a Digital Transformation scope?



Q: Does your organisation's vision include the transformation of its business model?



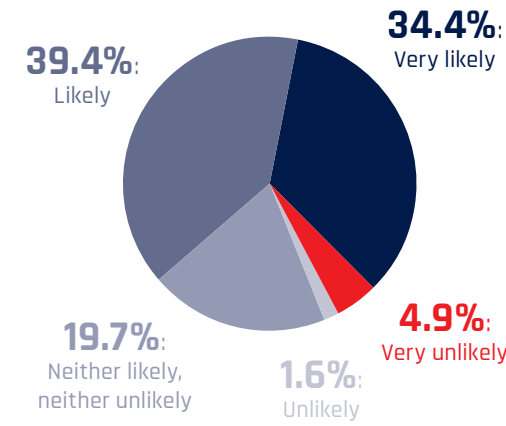
Q: When it comes to your organisation, where do you believe that Digital Transformation fits?



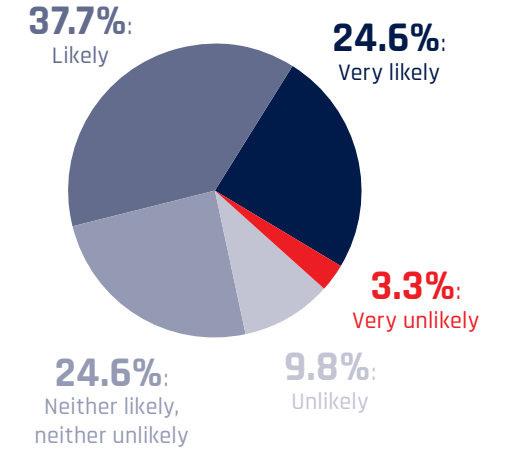
Q: How supportive is the mentality of the employees in your organisation, when it comes to changes, new ways of working, new tools, etc?



Q: How likely is your organisation to cooperate with external experts and/or partners in order to enhance efforts towards Digital Transformation?



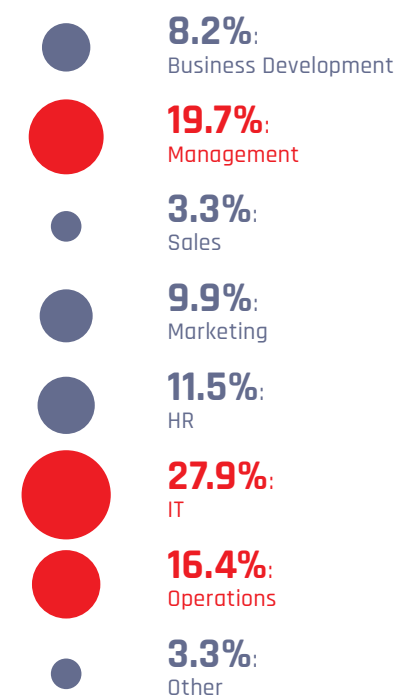
Q: How likely is your organisation to hire new people in roles related to innovation and / or digital transformation?



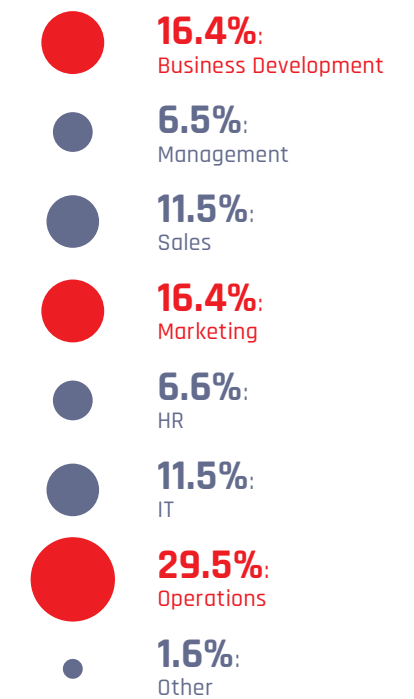
Q: When it comes to the application of Digital Transformation strategies, what do you believe are the most important traits?

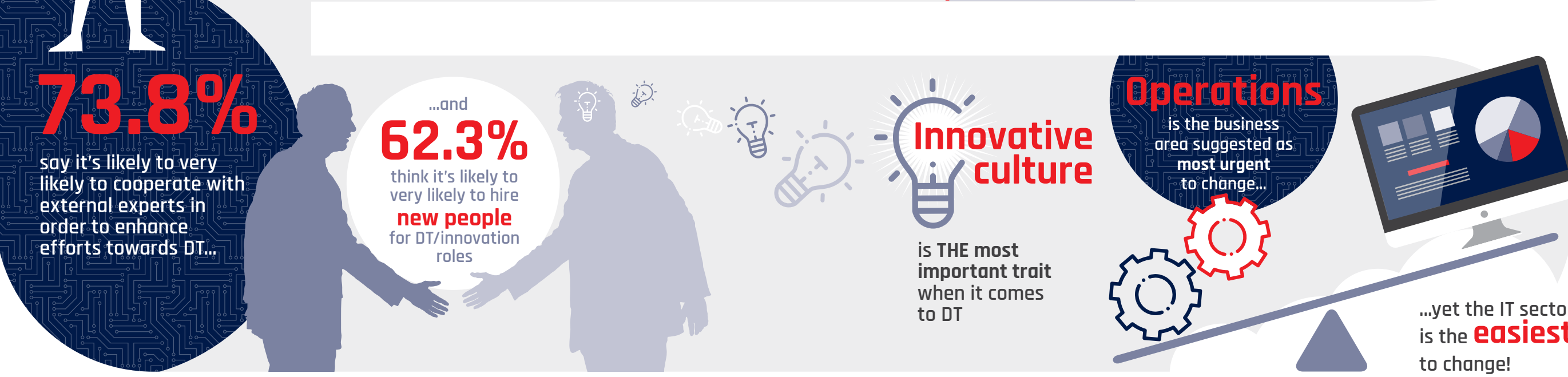
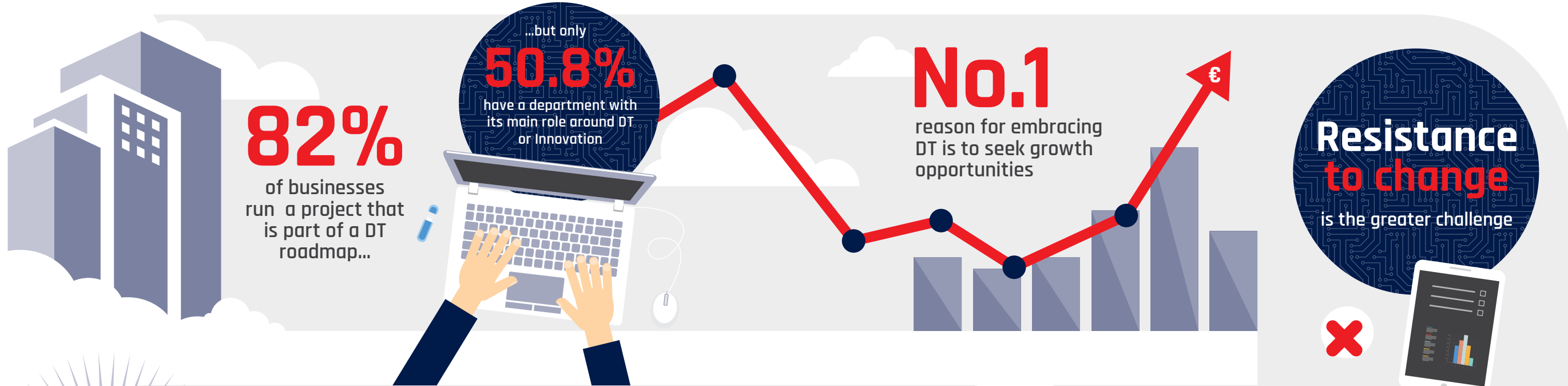


Q: Which area of your business you'd suggest as easier to change through Digital Transformation efforts?



Q: Which area of your business you'd suggest as more urgent to change through Digital Transformation efforts?







CASE STUDIES

In order to better understand how private organisations deal with Digital Transformation, we asked some Greek companies to share their views on the topic and explain the steps they had to take to transform. We also included a local administration example in order to further examine how organisations like municipalities evolve and prepare themselves for the future.

PAPASTRATOS SA

OUR DRIVING AMBITION? TO STOP SELLING THE PRODUCT THAT MADE US.



Athina Kalantzi
Director, IQOS Development
Papastratos SA

Philip Morris International and Papastratos in Greece chose to be positioned as the leader of transforming the tobacco industry rather than being the follower of this disruption, by setting a great goal; replacing conventional cigarettes with the smoke-free products, which is the biggest shift in our history and the right one for our consumers, our company, our shareholders, and society. After 12 years of R&D research we decided to serve this vision by launching our new IQOS product in 2016 and transform our entire organization towards the new digital era, by having our customers at the core of our new business model. With the launch of the new product, our Organisation has completely transformed itself from a traditional tobacco company that used to operate exclusively with traditional retailers (B2B model), into an innovative company that has a streamlined, direct and ongoing communication with its customers (B2C), placing them at the heart of its activities at every step of their consumer journey (search for information about IQOS, guided trial, product purchase, device management/registration, after-sales support, re-purchase, referral).

The launch of IQOS changed fully the way we operate, our interactions with consumers but our internal culture as well. We embraced the mentality of a startup and very fast -but with a lot of effort- we changed from a tobacco company to a technology company and from a slow moving organisation to a fast moving one.

Disruption initially starts from within. So in order to transform the business, we had to change ourselves first. And this change came not only top-down as a strategy but also bottom-up as implementation from everybody involved. Many new people were on-boarded bringing new/fresh ideas to sparkle the whole company but everybody was involved in new ways of working; Fast-forward and Agile methodologies, as well as working in cross-functional teams, were applied, so as to have

more flexibility and speed of decision making.

This cultural change was one of the most significant for the success of the transformation; every single colleague was able to contribute on this change no matter in which direction, top-bottom or bottom-up. The initial call on the transformation process came from a newly set team at that period, but soon the change spread.

Papastratos needed a change and we needed to act fast and at big scale so as to be able to catch the train of Transformation like the tech companies do. One of the priorities was to bring in-house people holding digital roles from the market, in order to bring their knowledge and different thinking in the company. In terms of digitisation we focused on digital solutions and digital capabilities picking very carefully those that make sense to our needs:

So for commercialisation needs we implemented an e-commerce platform with end to end solutions and capabilities that every e-shop has to have. This channel gave us the opportunity to get in touch for the first time with the end consumer and thus apart from selling products we had to be able to offer top-class customer care. For this, apart from the classic customer care call center, we also created social customer care, being the only company in the industry that has adopted problem-solving practices and customer queries through dedicated customer care pages on Facebook (www.facebook.com/iqos.gr) & Twitter (twitter.com/iqos_support_gr).

Being digital means that we also have presence digitally not only for our consumers but also for the people who want to know more about Papastratos. So for our social media footprint we decided to invest on Facebook (www.facebook.com/PapastratosMazi) as a channel for mass communication and LinkedIn (www.linkedin.com/company/papastratosmazi) as a channel for more corporate messaging. Via those two powerful channels we succeeded through targeted corporate messages to communicate the company's transformation and the big change that the smoke-free vision and products has brought not only at the company but also at the whole country in terms of investment.

Digitisation within the company brought new ways of working more efficiently, by adopting new tools which enable employees to communicate not only cross functional but also across markets. Two of the most used examples are Slack which has improved the collaboration between the company and the retail managers of our 25 shops, and Jira

which has helped a lot in the project management perspective. Apart from those ready-made solutions, we implemented internal custom-made solutions to fulfill other operational needs.

Papastratos is on the right track of Digital Transformation, as within a few months and with the help of technology and e-commerce platforms, CRM & social media, we managed to disrupt a market that operated in the kiosk and retail outlets and be the only company in the industry with these functions. Quickly and efficiently implemented and unified those platforms on all touchpoints and managed to create value for the customer and a new way of operating in the Greek market.

To sum up, Digital Transformation processes have so far helped us achieve exceptional results on our sales, market share growth, consumer base growth and certainly broaden the brand image of Papastratos, but, most of all have helped us transform our culture and the way that we are working as one Team with one ultimate vision.



We embraced the mentality of a startup and very fast, but with a lot of effort, WE CHANGED FROM A TOBACCO COMPANY TO A TECHNOLOGY COMPANY AND FROM A SLOW MOVING ORGANIZATION TO A FAST MOVING ONE.

CITY OF TRIKALA

THE FIRST GREEK DIGITAL CITY



Dimitris Papastergiou
Mayor,
the City of Trikala

Trikala has a long smart history, which starts back in 2004 when it was awarded the first Greek digital city. Several ICT facilities have been installed in the city since then, while numerous EU research projects have been implemented, but they did not meet extensive community's interest. This asset could not be easily ignored. On the contrary, my municipal leadership decided in 2014 to analyze what went wrong and to put "citizens first" in our mission to utilize the ICT in an attempt to address several challenges like municipal efficiency, social coherence and trust, citizen engagement, government transparency, resilience and local growth etc. We planned this journey both formally (with our strategy for 2025; as a fellow city in the EU Digital Cities Challenge) and informally (act quickly to achieve tangible outcomes).

In this regard, we decided to work for the community and not for the technology. We defined which solutions can meet community's needs; can be launched easily; and can be useful for the citizens. Our strategy was to combine intelligence with efficiency, social coherence and resilience, especially under the fiscal crisis that we experienced during the first years of our governance. We used municipal funds to setup information systems for document and financial management; we integrated them with a citizen complaints' registration system and we analyzed the data that was collected. Important testing-beds like the self-driving bus were launched and we managed to attract the international attention. Moreover, we invited local and international vendors to setup and try pilot projects at small scale and a set of smart solutions was installed: lighting; parking; environment; and IoT for waste and water management were the first set of smart services that were installed and tried. Additionally, a GIS and a fleet-management system were installed and incorporated in the municipal agencies in order to enhance service performance. Furthermore, public consultations have been performed, while numerous data streams have been released for free use via our open data portal and we expect developers to utilize them for new product development.

The above artefacts are being monitored and demonstrated at a control room, which is accessible at the entrance of our town hall. Analytics have returned findings that enabled us to enhance the municipal response to citizen complaints from a 6-month to a 10-day period; we managed to save more than 70% from the street lighting energy consumption; to measure parking behavior before we formulate our parking policy; to analyze citizen needs and strengthen corresponding municipal services; to connect

commercials with consumers with data.

We were not alone in this mission: we partnered with the local stakeholders (e.g., the commercial union for the smart open mall; the local chamber for the local energy demands' assessment; the solid waste and water utility providers for the IoT monitoring; and all together to self-evaluate our digital capacity). Moreover, we prioritized youth: we launched free-of-charge courses for cutting-edge ICT (tech talents and Cisco academy); we supported coding campaigns and hackathons; we joined the national coalition for digital skills; we disseminated more than 200 robotics kits to all our public schools; and we supported several campaigns to encourage their use at school and to develop innovation. We are determined that intelligence can sustain only with the support of the younger civilians, who can be transformed from users to developers. In this respect, we proceed with the foundation of our innovation hub and of the regional open lab in Trikala.

This journey is not simple: we deal with resistance to change by becoming the "good example" and with our commitment to success; bureaucracy and legislature needed updates for process simplification and digitisation; we joined standardization efforts; and we did not give up. We are determined that this mission is necessary and our moto is that "we have to change ourselves first, before we change things".

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Afterword

the first step is the

WILL TO CHANGE

CONCLUSIONS

Greece ranks 27th out of the 28 EU Member States and its standings regarding digitalisation have dropped compared to 2017. Greece has not adequately progressed in comparison with the other EU member-states and in the last year its progress was slower in relation with the EU average.

But, in the private sector, things are moving faster. In 2018, company culture is still considered to be the greatest obstacle for Digital Transformation globally. An environment that is not overly acceptant to failure along with the inherent resistance to change, creates a real hurdle in organisations starting their digital transition journey. Business executives worldwide have defined that cooperating with or acquiring innovation or technology partners as the most valuable factor that currently assist their organisations to effectively drive Digital Transformation.

Our survey shows that Digital Transformation is now considered essential. Nevertheless, organisations still struggle to engage on a transformative journey. Yes, this journey is expensive, but on the other hand it can only be seen as an investment for the future. Examples such as the case of Papastratos SA, showcased in the previous pages, are enlightening.

The main challenge ahead for 2019 is the fulfilment of the Digital Transformation goals continuously and in a sustainable manner. Business continuity, culture, customers, and employees should be in the epicentre of each and every tech investment in both private and public sector. It is vital to create a vibrant custom strategy based on best practices that will nurture innovative initiatives and will urge to set an active mindset of change.

SUGGESTIONS

Digital Transformation is a long-term project. Its duration depends not only on the circumstances, but also on the willingness of the people involved to deliver the process successfully.

The entrepreneurial and innovative mindset within a company starts from the top management. The employers should realise that becoming innovation leaders is a long-term process of exchanging ideas and knowledge.

The first step is the will to change. The recognition of what really doesn't work properly or what is on decline and is becoming obsolete must be the starting point of Digital Transformation. Upon these circumstances, a safe environment in which staff can ask questions, propose solutions, explore ideas and do extended tests must be ensured in order to cultivate a philosophy that is relevant to the reformation of the company.

The staff is the key for every effort in a company. For a long-term project such as Digital Transformation, the implementation of each step of the way depends on how the top management will pass on the message, that includes persistence, endurance and patience, to the employees. What they are, in fact, being asked to do is to fully understand the disruptions occurring in their industry, the emerging new business models, the changes in the customer behaviour patterns and lastly the fact that the enterprise must adapt to the above challenges in order not only to survive but also to lead the way.

Every passing day, it is becoming apparent that success comes not from pre-existing business knowledge but from the ability of teams to leverage the tools of the new digital world to connect the dots and have consumers point them to the right business decisions. The staff

is going to be judged by its ability to set-up user experiments that leverage technology, in order to understand what consumers want and adapt to the findings in a fast and efficient way.

This Digital Transformation journey needs teams that can lead to success - not passengers that will just enjoy the trip. It is crucial that their understanding of the rapidly changing technological world and their digital skills should be up-to-date in order to comprehend and efficiently use new digital tools. Reskilling, upskilling and hiring the right talents are components that are considered to be a priority as far as human resources are concerned, as technology develops.

External partnerships with experts, cooperation with startups or acquisition of technological companies may also deliver results. Outsourcing is an efficient way for a business to adopt elements of a different philosophy and to diversify in new market segments and new customer bases. Getting in close touch with startups, entrepreneurs or expert agencies, a company can create a new ecosystem that combines the internal knowledge with brand new ideas and tools. The development of new innovative solutions and products with external help or with other mechanisms such as hackathons, accelerators or internal innovation competitions, is often quicker and less risky for the company's core business.



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