



Digital Transformation in Greece

Acknowledging the needs
and the challenges of organisations

DECEMBER 2017

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Foreword

Technology advances fast, faster than ever before. A new era has dawned, one that most researchers and academics call The Fourth Industrial Era. And such as every era before this, it has been ignited by a “revolution”, technology being again at its center.

But once more, technology’s pace is faster than our ability to adapt. This is why during the last years a new term has emerged in order to describe the transformational process that businesses have to undergo in order to become agile and ready for future challenges, more customer-centric and more effective. Innovation is the key.

Digital Transformation is not just another buzzword. It’s the profound transformation of business processes, competencies and models to fully leverage the changes and opportunities of digital technologies and their impact across society, in a strategic and prioritised way. Implementing a thorough digital transformation, implies providing employees and customers with the experience that they now require at all organisational levels and, at the same time, enhancing the competitiveness of the company to meet new threats and players by developing innovative culture and talent. In short, digital transformation is the meeting point between technological opportunities and new business and growth models.

A national Digital Strategy has been recently designed in Greece. Although it wasn’t one of the government’s priorities up to now, the private sector has been trying to get on the train of digitalisation and cultural shift as soon as possible. Succeeding in this task is far more than crucial. It is the only way to future development.

About EIT Digital

EIT Digital is a leading European open innovation organisation that brings together a partnership of over 130 top European corporations, SMEs, start-ups, universities and research institutes. It invests in strategic areas to accelerate the market uptake of research-based digital technologies and to bring entrepreneurial talent and leadership to Europe.

EIT Digital is a Knowledge and Innovation Community of the European Institute of Innovation and Technology (EIT). Its headquarters are in Brussels with co-location centres in Berlin, Budapest, Eindhoven, Helsinki, London, Madrid, Paris, Stockholm, Trento and a hub in Silicon Valley.

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 innovation and education ecosystem.

WWW.EITDIGITAL.EU

About Found.ation

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

Found.ation helps brands embrace Digital Transformation by disrupting every sector of their operation, 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 COSMOTE, Eurobank, Total and the Municipality of Athens.

In 2015, Found.ation signed an exclusive agreement with the European open innovation organisation EIT Digital, under the Arise Europe Programme, with the objective to strengthen the Greek startup ecosystem, through the implementation of common, well-structured initiatives. The aim of the collaboration is to support startups, give them faster access to the wider European market and hook them up with potential investors.

The partnership was renewed for a third year in 2017, and it will now include co-branded activities involving scouting, in Romania and Bulgaria.

WWW.THEFOUNDATION.GR



Objective of this report & 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 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 then attempts a short summary of the Greek economic and digital indexes to provide a context of understanding the difficulties faced by Greek companies.

Three selected case studies are then presented that we believe are representative of both the private and public sectors, two of them of large private enterprises and one of the country's largest municipality, the City of Athens.

In order to grow like an incumbent, innovate like a startup.



Filippos Zakopoulos
Partner, Foundation

Airbnb took the hospitality sector by storm. Uber and car sharing companies may end the car ownership era. Amazon and Alibaba are changing the retail sector and Blockchain may change the way we use money. Is this the time for the 4th industrial revolution? No one can be certain but what has been becoming obvious in the last 5 years is that the near future holds new ways of doing business and of living in general.

Today most of the top company giants in the world are former digital startups. For Google, Apple, Facebook and Amazon (GAFA) one can even say that they are also former tech companies. Technology is now becoming so interlinked with our life that it seems meaningless to separate companies into technological or non-technological ones. The need to be digitally present and technologically innovative seems to be the only way to do business. And this has to be done by putting the customer at the center. It's the era of the customer.

Digital Transformation is the effort to realign business models, processes and technology to drive new value for customers and employees and to effectively compete (i.e. survive) in an ever-changing digital world.

So why is it that many established companies are failing to adapt to this new business evolution whereas small, inexperienced teams seem to be succeeding more? To effectively compete in the modern world, businesses must become lean, agile and close to customers rather than reactive and presumptive. They have to become a bit more like startups.

Startups are fast becoming the new paradigm and the best partners for the transformation of companies. Both in setting an example of best practices and methodologies, as well as becoming possible cooperation partners. Startups can be the new R&D of companies.

In this shifting global landscape and under the immense pressure that Greek corporations have been phasing in the last few years, the need to change is almost compulsory. Banks and telcos are currently showing the way, but more should follow if we were ever to talk about successful transformation. Over the last few years, the local startup ecosystem has matured enough to be able to play its role.

The time is right. The opportunity is here, and so are the ingredients: experience, infrastructure, talent. But most of all, this is a matter of survival. There is no time for complacency.

Defining Digital Transformation

Technological evolution is in its all-time high with the continuous digitalisation of processes, approaches, analyses and most of all mentality. The term that revolves around all of the above and is gathering momentum at intriguingly fast rates is Digital Transformation.

Initially, thinking of Digital Transformation one believes that it is easy to describe because of its obvious affiliation with the IT sector. But the vague nature of this emerging concept makes it quite difficult to pinpoint.

The truth is that there are many definitions that could describe Digital Transformation, but, even though in its entirety it may be considered clear, the more you focus, the more the specifics vary, based on the context of each example. 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.

Once the company's course is set towards that direction, 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".

Before a company reaches the point where it can call itself a disruptor, the leaders and the strategy team members have asked themselves: "How do we follow this path?"

At first, it becomes quite clear that a new strategy needs to be formulated in order to create a technology/IT based business model with the goal of reforming the overall organisational structure and thus creating new core competencies offering the competitive advantage each enterprise seeks.

In a world where customers are constantly online, seeking the next best thing, companies need to be innovation driven. They need to be on the fast-track to digital maturity by optimising their practices in order to offer their clients the best user experience possible.

A key element of this strategy is extensive research, which is required in order to map the expectations and the behavior of the modern digital customer, align them with the goals and objectives of the organisation and create a timetable with the necessary steps and the desirable milestones that will lead to disruption.



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.

Even though the transformation's core is powered by digital means, the methodologies complimenting its life cycle are analogue. The engine may be digital, but the fuel is holistic in nature, encompassing the use of modern technology along with meticulous data analysis and open-minded mentality.

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. 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 environment of the corporate world.

This is probably the most difficult barrier a company must overcome for the successful implementation of Digital Transformation. That is why it is important to carefully develop the step-by-step strategy mentioned earlier, in order to ease the transition into the new era of business by creating interoperability between departments, colleagues and consequently customers.

Based on the above, we can conclude that Digital Transformation is not a specific tool or method, but a vast process that utilises four simple steps: research, formulation, testing, and application. Following these steps, a company is able to effectively steer itself towards market needs, through constant customisation offering high levels of adapting capabilities.

Although it is strategy, not technology, that drives Digital Transformation, there are quite a few technologies that help the transition, so their adoption is essential. To name but a few: Internet of Things, Cloud technologies, Big Data, open APIs; and at a further step Blockchain, Artificial Intelligence and Machine Learning, Augmented/Virtual Reality, 3D printing, Robotics, etc.

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

STRATEGY - DEFINING THE PATH

The organisation needs to put its goals into perspective, to identify its objectives and align them with customer needs and expectations, and with market trends. It must create milestones and design a strategic plan that will help accomplish them.

ORGANISATIONAL 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.

UNDERSTANDING THE 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.



TECHNOLOGICAL EVOLUTION/EXPANSION

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 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 other activities and mechanisms, such as hackathons and accelerators, 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

There's an impressive amount of literature on how to achieve digital transformation, as each company has different needs and goals, different *modi operandi* and there are no "one size fits all" solutions. Nevertheless, there are some common practices that we can identify, which don't always go by the same name but have similar methodologies and results. Some of them emphasise on the IT pillar, aiming at IT and workload automation, while others emphasise on an organisational cultural shift with the help of technology and up-to-date methodologies, such as Design Thinking workshops and other design-driven activities.

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.

The following list is indicative and by no means exhaustive.

DIGITALISATION

Internal processes are automated using up-to-date software solutions, security is enhanced, big data analysis offers valuable insights, while various business sectors are upgraded thanks to cloud storage or updated hardware equipment. Digitalisation should not be an end in itself. It should only be considered a necessary step toward digital transformation and not a complete strategy per se. It must be combined with other methods in order to achieve its transformational effect.

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 within the enterprise and identifying new markets.

In their quest for innovation, many organisations 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, will be the key factors to implement such a transition. Startups turn the digital sphere into a powerful ally and 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.

Design thinking is a methodology often applied to Innovation Bootcamps. It is a creative problem solving methodology used to identify a real problem or set an internal challenge that addresses it.

EDUCATION/MENTORING COURSES

Education courses that businesses offer to their employees 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, either online or in a real classroom, 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.

Reverse mentoring is a more effective method. It offers a valuable opportunity to curb the generation conflict between older and younger employees, thus enabling dialogue. Leaders can benefit from the experience of the mentors and learn during interesting conversations what young people think and how they deal with social media 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 presently benefit from the fresh perspectives of tomorrow's leaders.

Mentors benefit from the programme as well. They are given the opportunity to actively participate in the digital revolution of the company they work for, helping shape its future. This, in turn, strengthens the feeling of being connected to their own company.

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 combined with external expert knowledge transfer and top-level mentoring will ignite 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, boosts creativity and offers valuable training for adaptation to the digital future. By taking advantage of the collective intelligence, a corporation is able to identify in-house talent and also ideas that could be a game-changer for the business. It's called collaborative innovation.

External Hackathons are fast-track competitions, where teams and individuals are required to come up with a solution, a product or a service that will get them a reward, usually in funding. They usually attract startups, but when adapted to the enterprise's needs, they have the power to accelerate the process of digital transformation. Their true impact is the learning of a new way of thinking, a fresh way to deal with old processes and methodologies, and knowledge transfer. 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 and services that can also be exclusive.

DIGITAL TRANSFORMATION COMMON PRACTICES AND THEIR IMPACT ON BUSINESSES

	Solving Business Problems	Internal Evolution	Market Diversification
Digitalization	•••	•	•
Innovation Labs / Bootcamps	••	•••	•
Education / Mentoring Courses	••	•••	••
Internal / External Hackathons	••	•••	••
Corporate-Startup Cooperation	•••	•	•••

The Greek Economy

Amidst political turbulence and financial recession, the Greek economy is going through one of its worst eras in recent history. It is going through its 9th year of recession; enterprises of all sizes and types (especially SMEs) are facing higher tax rates and less market opportunities, thus investing less in sectors like marketing, publicity and updating their technological equipment and software systems.

Greece is a developed country with an economy based on the service (80.2%) and industrial sectors (15.8%)¹, with a population of 10.9 million people. The economy of Greece is the 47th largest in the world by nominal gross domestic product (GDP \$194,559M according to the World Bank, €175,881M according to the Hellenic Statistical Authority)². As of 2016, Greece is the 16th largest economy in the 28-member European Union³.

According to the World Economic Forum, Greece ranks 87th out of 137 countries in the Global Competitiveness Index

1. CIA The World Factbook, retrieved: October 2017, <https://www.cia.gov/library/publications/the-world-factbook/geos/gr.html>

2. World Bank, Gross domestic product 2016, retrieved: October 2017, <http://databank.worldbank.org/data/download/GDP.pdf>, Hellenic Statistical Authority, Gross Domestic Product (2nd Estimation), retrieved: October 2017, <http://bit.ly/2y5XApj>

3. Eurostat, Gross domestic product at market prices, retrieved: October 2017, <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>



(GCI) 2017-2018⁴, scoring 4.0 (in a scale from 1 to 7), but climbs up to number 71 in terms of Innovation and Sophistication factors (73rd in Business sophistication and 75th in Innovation) and number 77 in the Efficiency enhancers subindex. Despite the low scores, Greece is listed as a stage 3 economy (innovation driven), together with 36 developed economies in the world. Also according to the Global Competitive Index, Greece ranks 50th in Technological Readiness.

It is noteworthy that Greece ranks last (137th) in the “effect of taxation on incentives to invest” pillar. In terms of the most problematic factors for doing business, an executive opinion survey by the World Economic Forum points to high tax rates and regulations, inefficient government bureaucracy, policy instability, limited access to financing, and government instability.

A look to the country’s key digital statistical indicators shows 66,84% Internet penetration⁵, 18.41 million mobile subscriptions (169% of the population)⁶, an average internet speed of 7.9Mbps (via fixed connections)⁷ and 11.4Mbps (via mobile connections). 68,57% of the Greek households own a computer and 68.07% of the households have Internet access (ITU). The country ranks 36th in the world in terms of ICT development.

4. World Economic Forum, *Global Competitiveness Index 2017-2018*, retrieved October 2017, <http://www3.weforum.org/docs/GCR2017-2018/05FullReportTheGlobalCompetitivenessReport2017%E2%80%932018.pdf>

5. International Telecommunications Union, *ICT Development Index 2016*, retrieved: October 2017, <http://www.itu.int/net4/ITU-D/idi/2016/#i2016countrycard-tab&GRC>

6. GSMA Intelligence

7. Akamai State of the Internet Report Q1 2017, retrieved: October 2017, <https://www.akamai.com/us/en/multimedia/documents/state-of-the-internet/q1-2017-state-of-the-internet-connectivity-report.pdf>.

Six characteristics of future-ready government

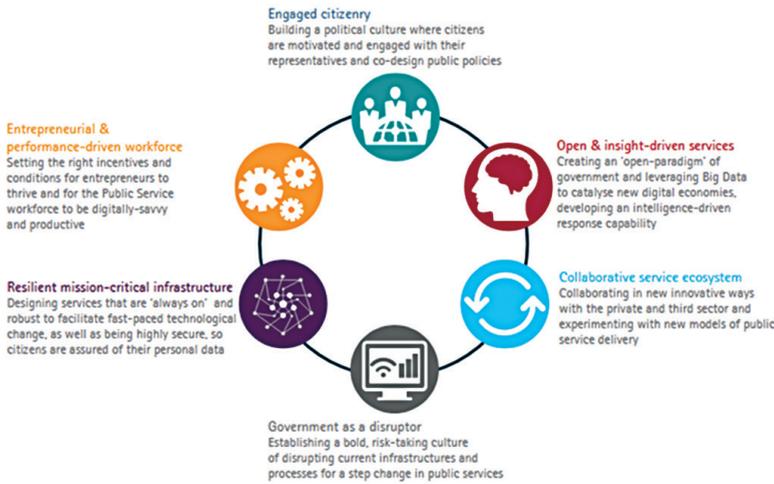


Image source: Accenture

The Public Sector

An older Accenture report⁸ identifies six characteristics of a future-ready government focused on rebuilding accountability and promoting growth and competitiveness. The Greek government doesn't seem to focus on progress or any of those. Only baby steps have been taken in order to build online services that are being enriched at a very slow pace, such as the electronic platforms for taxation and social security services⁹.

At a more local level, some municipalities have taken the matter into their own hands in terms of digitalisation and implementation of smart city practices. The city of Trikala in Central Greece is one such example, having gone as far as adopting self-driving transportation solutions and free Wi-Fi connections for its citizens. The city of Heraklion, on the island of Crete, is also a successful example (listed as one of the 21

8. Accenture Public Services Pulse Survey on Digital Government, January 2015, retrieved: October 2017, <https://accntu.re/2jdAuKX>

9. ePrescription is a good example that helped to modernise Greece's medical care network. It a digital social service which aimed to connect and render interoperable all national social insurance funds through a fully integrated platform that helps to manage, monitor and control the drug prescription lifecycle. The total investment in the project "ePrescription" was almost €12 Million, of which the European Regional Development Fund contributed €10 Million, for the 2007-2013 programming period. The first pilot project was initiated in 2010 and, thus far, ePrescription is the most important eHealth application. It has a high rate of coverage and penetration throughout the country and is positively affecting the public health and public finance systems. By using ePrescription patients benefit from reduced difficulties affecting their prescription insurance coverage and enjoy a simpler process, especially when it comes to renewal of prescriptions. Furthermore, health authorities are relieved of excess paperwork and bureaucratic procedures. From the doctor's point of view the project offers a clear overview of the patient's medical history and better alignment with guidelines.

most “smart” cities in the world for 2012, 2013 and 2014¹⁰), while a dozen more cities have adopted interactive platforms in order to communicate with the citizens, gather feedback and allow them to report problems. The city of Athens has made significant investments in the recent years and has even appointed a Chief Digital Officer (more details will follow in the case studies section).

Greece has updated its National Digital Strategy, set up a new governance structure and developed a new framework of ICT projects production. As such, Greece is at a very early stage in implementing the roughly €1B investments planned for ICT investment under ESIF for the period 2014-2020.

In May 2016, the Greek Government set up a General Secretariat for Digital Policy responsible for the policy-making, design, overall coordination and monitoring of the implementation of ICT investments in the country. In November 2016, the new Ministry for Digital Policy, Telecommunications, and Media was also created.

The Country’s Digital Profile

Greece is placed among the last three European countries (26th out of 28 countries) on the Digital Economy and Society Index (DESI)¹¹ for 2017¹² and belongs to the Low performing cluster of countries¹³. Moreover, on the Digital Economic Opportunity Index (DEOI), Greece ranks last out of 28 EU countries, with a score of 17.8 on a scale of 100.

Europe’s Digital Progress Report (EDPR) tracks the progress made by Member States in terms of their digitisation, combining quantitative evidence from the Digital Economy and Society Index (DESI) with qualitative information on country-specific policies. Overall, Greece did not make much progress compared to other EU Member States from 2014 until today, with a few exceptions in some sectors. Its low performance in digital skills acts as a brake to the further development of its digital economy and society¹⁴.

10. More on the digital profile of the city can be found at http://www.intelligentcommunity.org/heralio_n_crete (retrieved: November 2017)

11. The Digital Economy and Society Index (DESI) is a composite index that summarises relevant indicators on Europe’s digital performance and tracks the evolution of EU member states in digital competitiveness. DESI overall index is calculated as the weighted average of the five main DESI dimensions: Connectivity (25%), Human Capital (25%), Use of Internet (15%), Integration of Digital Technology (20%) and Digital Public Services (15%).

12. European Commission, The Digital Economy and Society Index (DESI), retrieved: October 2017, <https://ec.europa.eu/digital-single-market/en/desi>

13. Low performing countries are Romania, Bulgaria, Greece, Italy, Croatia, Poland, Cyprus, Hungary and Slovakia.

14. Europe’s Digital Progress Report (EDPR) 2017 Country Profile Greece, retrieved: October 2017, http://ec.europa.eu/newsroom/document.cfm?doc_id=44308

CONNECTIVITY

Greece features wide availability of fixed broadband, but take-up is progressing slowly. Because the connection prices are relatively high, the transition to fast broadband is slower than in other EU countries, but as fibre optics networks are expanding, this will change in the next few months. In integrating digital technology, companies use social media at the level of EU average, but don't use more sophisticated technology, such as cloud services or eInvoices.

While 99% of Greek households are covered by basic fixed broadband, mobile broadband take-up lies at 50 subscriptions per 100 people, well below the EU average of 84 subscriptions per 100 people. Subscriptions to fast broadband (7%) remain well below the EU average (37%). Despite a progress of 8%, Greece remains last amongst the Member States in NGA coverage per household, far from the EU average of 76%. Greece is performing better in terms of 4G, as 4G coverage lies at 80% of households, close to the EU average of 84%.

Pro-competitive measures adopted in the markets for wholesale local access and wholesale central access for mass-market products are expected to facilitate the upgrade of VDSL to vectoring and the deployment of fibre.

The transposition of the Broadband Cost Reduction Directive - once completed - should enable the providers to maximise the impact of private investment in terms of NGA coverage to help Greece catch up. It is of particular importance for Greece, since its broadband strategy relies on the private sector, to provide most of the investment in high speed networks, limiting public intervention mainly to areas where market failure has been identified.

Greece is planning to invest €304M of ESI Funds (2014-2020) in the deployment of broadband infrastructure and more specifically for High Speed networks - access/local loop with a capacity of 30 Mbps or more - where two projects are envisaged. Currently there are no plans for other financial instruments to be used in broadband deployment.

The updated Digital National Strategy relies on seven priority actions, the deployment of NGA network infrastructures being the first. It adjusts the National Plan Next Generation Broadband Access 2014-2020 to the new Gigabit targets and reaffirms the intention of Greece to finance NGA infrastructure in white areas, as well as in grey areas.

HUMAN CAPITAL

In 2016, the percentage of the Greek population using the internet on a regular basis (66%) was one of the lowest among European countries (EU average is 79%). The number of individuals having at least a basic level of digital skills is also progressing with 46% in 2016 compared to 44% in 2015. The share of the Science, Technology, Engineering and Math (STEM) graduates remains relatively high and this is promising for Greece's digital future. Currently, Greece has the lowest proportion of ICT specialists in the workforce (1.2%) in the EU.

More people are online, but skills levels remain low. However, the number of science and technology graduates is relatively high and this is a good promise for Greece's digital future.

USE OF THE INTERNET

A significant percentage of Greek Internet users engage in a wide range of online activities, such as reading news online, listening to music, watching films and playing games online, using the Internet to communicate via voice or video calls and participating in social networks. For most of these activities engagement among Greeks is higher than or equal to overall in Europe.

It is also to be noted that over the past year, more and more users have been engaging in online banking (28% compared to the previous year 21%) even if the percentage of Greeks using this service remains below EU average (59%).

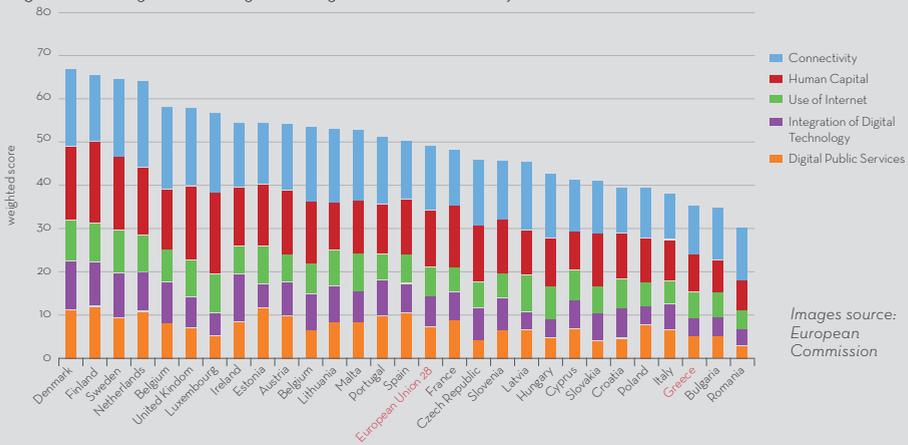
INTEGRATION OF DIGITAL TECHNOLOGY

Greece's overall industry performance in integrating digital technology is below par although it shows progress. Companies in Greece use social media to the same level (20%) as the EU average (20%). More and more Small and Medium Size Enterprises (SMEs) use electronic sales channels. And in 2016, the average turnover from online sales for SMEs progressed quickly (5.9%), while it only represented 1.2% in 2015. However, the percentage of enterprises using technologies, such as eInvoices (3%) or cloud services (6%), is low. While in terms of digital intensity (ICT users and eCommerce) companies in the manufacturing sector are scoring slightly higher (12%) compared to the EU average (11%); this shows the importance of developing an Industry 4.0 strategy for Greece's digital potential.

On the positive side, the Greek startup ecosystem is viewed very favourably worldwide and investments in digital companies have multiplied over the last few years. In December 2016, a new EU-backed Fund-of-Funds initiative called EquiFund¹⁵ to boost equity financing for high-growth Greek SMEs was announced. It will facilitate access to finance for startups and entrepreneurs and boost innovative businesses, and is expected to be active in the first quarter of 2018.

15. The new 'Fund-of-Funds' programme, signed on December 22, 2016 and is managed by the European Investment Fund (EIF), aims to boost entrepreneurship and create a lasting impact on local businesses, by attracting private funding to all investment stages of the local equity market, ranging from entrepreneurship steps even before the early stage startups, up to mature expansion companies. It will be instrumental in unlocking the equity potential in the Greek market. The Fund-of-Funds is co-financed by the EU through Structural and Investment Funds (ESIF) resources from the Operational Programme "Competitiveness, Entrepreneurship and Innovation 2014-2020" (€200M) and through the European Fund for Strategic Investments (EFSI) (€60M), the heart of the Commission's Investment Plan for Europe (also known as the 'Juncker Plan'). Up to €10 million will come from EFSI supported resources. It is the first time that European Structural and Investment Funds and the EFSI are combined in Greece.

Digital Economy and Society Index, by Main Dimensions of the DESI



Images source: European Commission

DIGITAL PUBLIC SERVICES

In Digital Public Services, the percentage of internet users that have exchanged forms with the public administration online is above the EU average (38%). Greece has also progressed in the provision of Open Data (73%), now well above the EU average (56%). However, on the supply side, in the provision of online public services, Greece performs low: only 5/100 forms are prefilled, while the EU average is 49/100.

Actions for instilling more transparency into public services and making the government more accessible to all citizens have been taken. A number of eGovernment portals are already in place. Notably, Ermis, the Governmental Public Administration Portal, aims at informing citizens and businesses and ensuring the safe use of eGovernment services through digital certificates.

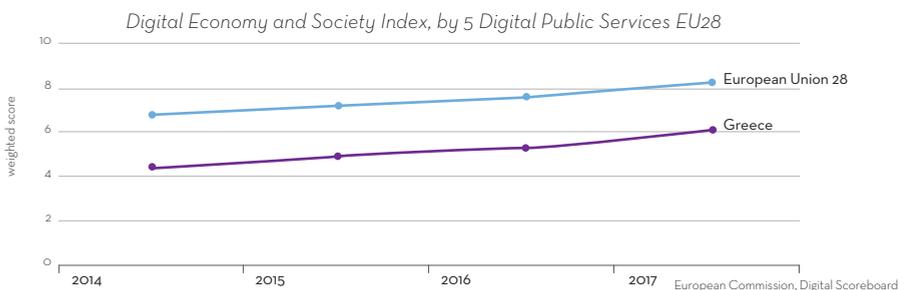
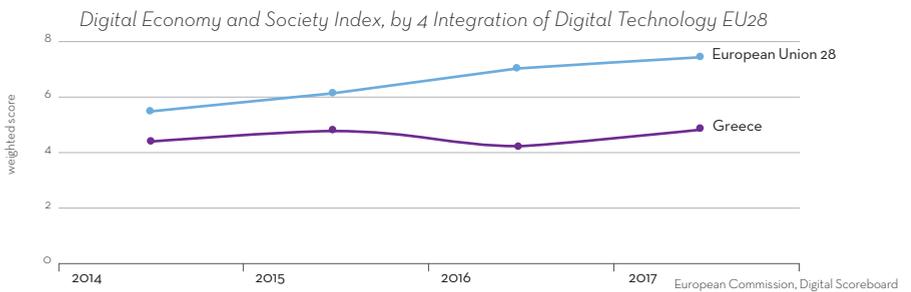
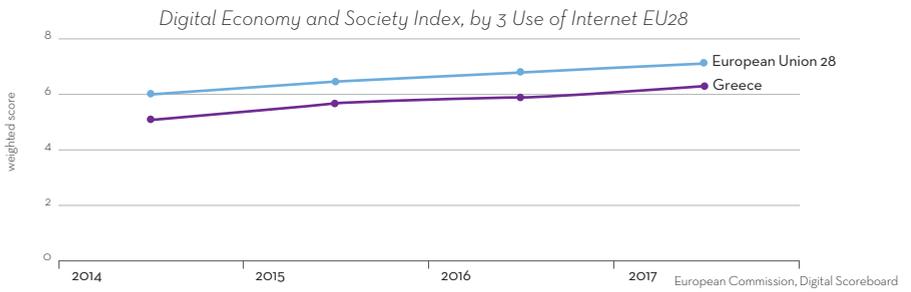
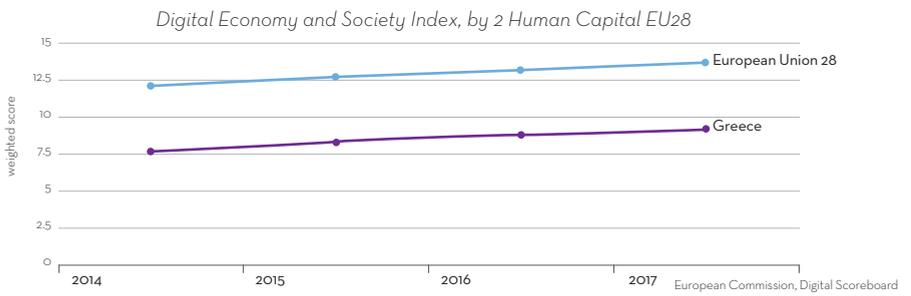
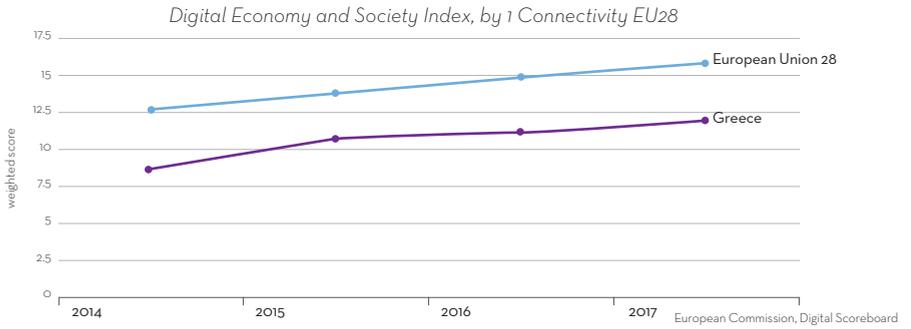
In September 2017, the Greek Government signed a contract with the country’s leading telecommunications provider, OTE, launching one of the ministry’s project titled “Document and Workflows Digital Management System, with embedded remote digital signatures”. The project of Digital Document Management is expected to upgrade the citizens’ relations with public services.

A recent study by the Hellenic Federation of Enterprises (SEV) and Accenture¹⁶ predicts that Greece’s digital maturity could drive a rise of the national GDP by 2.6%-4% by 2021 (€4.9-7.6M) and will help create more than 50.000 new jobs, thus putting brain drain to a halt.

Greece’s performance across ‘Technological Readiness’ indicators over the past 10 years shows a good potential for achieving a good digital transformation level in the next years, but economic challenges during the same period have affected performance on all other indicators, resulting in lower overall productivity.

16. Accenture & Hellenic Federation of Enterprises, *Digital Greece 2017: The road to development (in Greek)*, retrieved: October 2017, http://www.sev.org.gr/uploads/Documents/Digital_Greece_060517_full_hi_res.pdf

Below you can see how Greece scores in the main DESI dimensions compared to the European average of 28 countries.



Images source:
European
Commission

The Private Sector

Greece usually follows other countries in terms of technology adoption rate and penetration, due to the barrier of language in many cases. Voice controlled devices is such a case, since there is no Greek language support in any of the big platforms (Apple, Google, Amazon), although there is partial support by Google's Search Assistant and there is a Greek company, MLS Multimedia, that builds its own voice control systems.

Virtual/augmented reality is gradually catching up, but is more often used in advertising/marketing campaigns than in business applications. The use of the cloud is quite usual in Greek enterprises, but more advanced technologies like robotics and machine learning are currently used mostly in lab and academic environments. Internet of Things and Big Data technologies are also catching up gradually, while some other pioneering technologies like Blockchain are next on the hot list for enterprises.

In the past two years, a few surveys regarding the matter have been conducted in Greece, showing that enterprises realise the need to transform, but are not quite there yet. One of the most recent, by Stanton Chase¹⁷, surveyed 350 respondents from various industries and positions and found out that 71% of respondents classified DT as "Very Important" for their organisation and, on average, ranked their company's engagement in Digital Transformation as 7 out of 10. Stanton Chase estimates 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.

Marketing & Media, as well as Business Intelligence / Analytics / CRM, are the top value chain parts expected to primarily be digitalised, followed by Sales and Operations. New Consumer Behaviors and Mobile Usage are the main external factors driving the shift toward Digital Transformation.

Resistance to Change is the most important drawback that could inhibit the success of Digital Transformation, thus, unsurprisingly, Culture and People is a vital internal factor necessary for the success of DT.

Big Data & Analytics is the area most expected to evolve (73.7%) while Mobility & Cloud Access and Internet of Things (IoT) follow as additional areas awaiting major digital changes. The areas/functions in highest short-term demand for transformation are Performance Marketing, Digital Media and Analytics, E-Sales, Social Media, and Customer Experience. Traits identified as essential for ideal candidates in these "digital" roles are Agility and Speed (68%), Innovation (56%), and Leadership & Influence (52.4%). Notably, CEOs, GMs tended to value a Results Oriented mindset more than HRs, while the opposite was true for Innovation.

17. Stanton Chase, Executive Newswire 17: Digital Transformation, retrieved: November 2017, <https://stantonchase.com/athens/newswire-17/>

Main reasons for Greece's slow DT progression

- Greece's digital vision and strategy is just starting to formulate, because none of the political forces in the government managed to identify the need to transform in time.
- The country has been facing political instability since the beginning of the financial crisis, thus national digital strategy is often a project that completes its life cycle alongside that of each government.
- Lack of finance and vision has kept the local authorities from making digital transformation one of their priorities.
- Since less people have been hired in both the public and in some segments of the private sector (i.e. telcos and banks) the last 8 years, the median age of people working in public services is growing, making it difficult for them to adopt new skills and competencies, especially since they are not being subject to frequent training.
- Poor DESI scores are the result of both inefficient national strategies and the lack of cooperation between the public and the private sectors. Better scores in technical infrastructure and NGA show that the country is focused more on digitalisation and less on the improvement of services.
- High levels of bureaucracy and the lack of an integrated digital governance model prevent the implementation of the digital strategy across different ministries.

Suggestions

Greece could benefit a lot from creating the right conditions for private investment to occur, in particular by completing the transposition of the Broadband Cost Reduction Directive.

The country needs to address its severe digital skills' gaps. Greece continues to suffer from a "brain drain", but addressing the shortage of ICT specialists remains crucial for supporting the digital transformation of the industry. Focus on digital skills and competences should be of high importance in the education sector. The fact that about one third of the population has never used the internet also limits the possibilities offered by the digital economy and society. If successfully implemented, the Greek National Coalition for the Digital Skills and Jobs could also help build digital skills capacity with industrial relevance and could enable better collaboration, especially among the public, the education and the industry sectors.

Encouraging the adoption of digital technologies by businesses is an important driver of digital transformation. Greece would also benefit from an Industry 4.0 scheme to develop specific digitalisation plans for the Industry. Investing more in market verticals, such as maritime and tourism, could significantly benefit the economy in the long run.

Continuing the effort to modernise public administration using ICT could be highly beneficial to enable greater citizen trust and accountability. The eGovernment Strategy of Greece offers a path towards the design of effective online services and tools that will increase transparency and efficiency. This path should be also followed by the governments to come in order for any progress to be achieved.

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.



City of Athens



Constantinos Hambidis

Chief Digital Officer

The municipality's actions cannot lead to the Smart City of the future on their own. The municipality is in the epicentre, but in the outer circle lie the rest of the city's structures: small, medium and large enterprises and everything that can be offered in terms of service. The point of Digital Transformation is to affect the whole city, not just the municipality. But, the City has to begin transforming from the inside.

There were three main reasons that led the City of Athens to implement a Digital Transformation strategy:

1. Transparency and Governance
2. Citizen Engagement
3. The improvement of the citizens' life quality.

These in turn expand to five pillars in our policy:

1. THE CITY'S NETWORKS

The majority of Greek cities lack a proper functioning network and that's why this initiative is so important for us. Very soon the City will be connected to the GR-IX¹⁸ network. We are also adopting the long-term fibre optic connections leasing model (the municipal network is expected to be completed in Q2 2018), and we are also bringing Fibre To The Office at the Town Hall – a very important pilot project that is a first for pre-existent, older buildings in Greece. We have also created a pilot Wi-Fi network in Athens that we plan to expand by the end of 2018 by interconnecting locations with high tourist traffic. Our perspective is to offer faster Internet to all citizens, and that's why we have mapped the providers' plans and future services according to the regulatory authority's decisions, that will very soon be released to the public. This way, the public will be able to see what services are available in their area, when (in a 2-year timeframe) and by which

18. GR-IX is a neutral, not-for-profit Internet Exchange, and the only one in Greece. It constitutes an important national infrastructure the main purpose of which is to interconnect all significant Internet players in Greece.

provider –at the KV level. In the more distant future, we hope to bring FTTH connections to all schools of the City.

2. DIGITAL GOVERNANCE

We have already completed the integration of digital payments for all services of the central municipality's operations. But I would also like to mention the digital signature project – more than 90% of the documents that are presented to the city council are digitally signed and shared in digital form. In the long run, this will be extended to all services to the citizens, such as the Registry Office, aiming to minimize the citizen's visit to the counter. We have planned many projects like this.

3. ENGAGEMENT

Our first priority is to organise the municipality's online content (Q1 2018). The municipality has more than 10 sites, but the content is not organized based on the citizens' needs. It will be reorganised and all sites will be interconnected.

4. DIGITAL EDUCATION

There already are the educational projects at Innovathens (Hub of Innovation & Entrepreneurship), at the city's schools, at MakerSpace (collaborative fabrication workspace), at Fab Lab (a node of the Digital Fabrication Laboratories network Fab Labs) and at the "Lela Karagianni" building, which has just been launched offering digital skills lessons to the local community and the refugees. The municipality's employees are also being gradually educated in the use of the new digital systems and services.

5. ENTREPRENEURSHIP & INNOVATION

We have two major projects. The first is the Digital Council – nine large technology companies (i.e. Microsoft, OTE, Vodafone) and the four universities of the city – an initiative by the mayor aiming to better establish an open dialogue with the market. The second one is Athens Digital Lab, which is still on the works and has already the support of the Stavros Niarchos Foundation. Its aim is to call for ideas that will then be incubated and developed in order to address the city's real needs and challenges.

The biggest challenges we have had to face had to do with the institutional framework. The second challenge was the ageing population working at the municipality (there have been no new hires since 2010) along with the lack of digital skills, and the lack of willingness to learn. The third challenge is bureaucracy. No matter how fast you want to progress, weeks, months and even years may pass before you get the necessary permissions. Especially for ICT projects, this is a big obstacle, because things change so fast.

“
The point of Digital Transformation is to affect the whole city, not just the municipality. But, the City has to begin transforming from the inside.

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In April 2017, Athens Mayor Giorgos Kaminis announced the appointment of a chief digital officer –a first for Greece's capital-, who will be responsible for upgrading the digital capacity of the city's public services and design its strategy in order to transform into a Smart City.



Eurobank

Eurobank



Maria Leontiou

*Head of Innovation
Center, Group
Digital Banking*

In an era where technology is advancing rapidly, businesses are forced to move faster in order to stay in the game. Understanding our customers and being able to offer them personalised experiences anytime, anywhere is at the core of our strategy and this cannot be achieved without going digital.

Our vision is to strengthen Eurobank's profile as a customer oriented organisation that delivers unique and personalised experiences realised by a supreme, mobile-1st digital offering with a human touch.

THE STRATEGY

The journey started in 2015. We had to cultivate our vision and design our implementation approach. Most part of the effort at this stage fell in the Culture pillar, as all levels of the Organisation had to be convinced in terms of the objective, the investment and the commitment involved in achieving it.

2016 was the year of setting up the grounds for delivering the objectives. New organisational units and domains were created (e.g. Innovation Center, Customer Experience, IT and Digital organisational synergies) and decision processes streamlined (Agile methodology, merging IT and Digital Banking under a same head). Intense technological research was conducted in order to decide on new technology investments (off-the-shelf vs. custom development), re-architect legacy systems and define economies of scale by re-use of technology. Also, various initiatives that had been initiated independently within the digital concept were grouped under the same Digitalisation Programme.

THE IMPLEMENTATION

A dedicated digital transformation unit was established to lead efforts on addressing the following challenges:

- Listen to the customer rather than assume what the customer needs
- Transform legacy technology and wrap technological debt into a nimble architecture that will adapt to customer needs
- Create a new Culture of collaboration, agility, experimentation and continuous improvement.

We build and empower Customer Experience, Digital Marketing and Advanced Analytics functions within the Organisation that will manage the feedback we get from customers. At the same time we are building an Omni-channel infrastructure that will turn all touch points of the customer

(Branch, E-Banking with PC/Tablet/Mobile, Mobile Apps, Corporate site, Contact Center, ATMs, etc.) into a single and seamless user experience.

IT has a key role in our digital transformation initiatives since we see technology being a key differentiator in everything we do. Our IT governance and operating model is evolving to face new challenges and opportunities.

Employee engagement is also a key pillar in digital transformation, thus HR also plays a critical role in making our people feel part of this journey and providing them with the right tools to do so. To compete in the digital era, we need to modernise the workforce and skillset so we need to focus on attracting new expertise, building digital literacy, putting in the appropriate training and engagement programmes, as well as handling with aging proficiencies and processes. HR is the key sponsor for such initiatives.

“
Going digital was the only way to cater for our customers’ constantly evolving behaviours, needs and preferences.
 ”

THE CHALLENGES

Setting off on a digital transformation journey, being a Greek bank in the midst of the crisis, was a bold decision. Making all business units see the value in digital transformation and be convinced that it should be viewed as a short-term cost center but a long-term investment in competitiveness instead was a challenge. At the end it was more than obvious that going digital was not a nice-to-have initiative but a key to survival.

Change management has to be deployed in many different levels and dimensions, from external communication to the customers (Marketing, Advertising, Digital Branding) to the internal communication to the staff that need to get away from the traditional inside-out thinking and understand and employ outside-in design thinking principles.

THE FUTURE PLANS

For Eurobank, 2017 was the year of launching its digital image. All major offerings are redesigned and deployed with strong customer impact and marketing presence. Also, the Omni-channel infrastructure is being worked on to be able to support the future. This is a very fundamental, however, transparent achievement that will define the ease of evolution for the following years. Technology and processes are running in full throttle for the delivery engine to achieve the daunting delivery objective.

During 2018 and 2019 we shall leverage on the digital infrastructure to deliver market-differentiating offerings and better customer experience and support. Hence, technological and process-related efforts will be stabilised, while more effort will be placed on cultivating the internal and external culture of the Organisation.

Eurobank, a part of Eurobank Group, is one of the largest banks in Greece. Eurobank Group is a robust financial organisation that operates in 7 countries.



OTE Group



Ioannis Papidis

*IT Digitalisation
& Innovation
Director*

OTE Group is the largest telecommunications and leading technology provider in Greece and SE Europe. The Group is the primary digital transformation enabler for its customers and the country. Furthermore, being part of Deutsche Telecom Group, OTE Group contributes in DT Group's efforts to support Digital Transformation all over Europe.

Telecoms and IT is the platform on which the new digital age has evolved. That does not mean that telecom companies are not challenged by the changes that this new age brings. Telecoms are not immune to the risks and threats posed by the new capabilities and mindset. Our CEO has publicly stated that Digital Transformation is a matter of survival for all companies and not an option. More specifically, Mr. Tsamaz stated "Technology is quickly turning traditional business models upside-down. As digitalisation continues to move from an innovative trend to an all-encompassing reality, companies need to understand and take advantage of digital technology across all aspects of their operations."

It is more than obvious that every corporate environment has to be consistent with global cultural and functional shift.

Coming from a long history of continuous evolution, our group is quite capable of following new technological trends. We have always invested heavily and delivered new capabilities that changed our way of life. This time the change is exponential and it is not just about adopting new technological innovations, we also need to change the way we think, act and relate to each other because of them. That is the reason we are not only incorporating new technology but also helping people understand that these new technologies present a great opportunity to make our everyday life easier and more efficient. Digital Transformation is not about digitising the way we do business today, but is a fundamental change of mind.

OTE has an established 360 digital transformation programme that engages all its Business Units, it is closely monitored and sponsored by the CEO and serves as the compass for all company activities. The programme defines transformational activities and targets both for our customers but also for our employees. Digital Transformation has a holistic impact on OTE and that is the reason all pillars of the company structure started the journey in parallel. Strategy, Marketing, Customer Service, Sales Departments but also Finance, Human Resources, Technology and IT Divisions are onboard.

Key to the success of the programme is Top Management sponsorship and enhancing innovation and collaboration inside and outside the company. We are actively pursuing a portfolio of activities that aim at placing OTE Group as a key contributor at the center of the Greek innovation ecosystem.

We recently organised our 1st Cosmote Hackathon, which took place in May 2017. 14 teams came together and “run the code for the future”. Many innovative ideas were presented during our Hackathon event, and all participants got significant consulting on how to further develop their business model. Cosmote Hackathon is evolving as the signature event of the Greek Innovation scene.

Academia is also a valuable partner for Innovation and Digital Transformation. We are in touch with the academic community and Greek research centers in order to create synergies that will allow both sides to bridge the gap towards the New Digital Era.

So how can we specifically define Digital Transformation? Well, it’s a new age and nobody is able to accurately predict the future. We should all get in a continuous search for the most efficient ways to apply new technologies, under the perspective of non-stop evolution of all business and organisational activities, processes, competencies, models and most importantly our way of life.

OTE Group is on its way to become the most relevant, admired and loved provider of the new Digital age in a way that ensures that nobody is left behind.

“
**Digital
 Transformation
 is a matter of
 survival for all
 companies and
 not an option.**

”

OTE Group is the largest telecommunications provider in the Greek market, and, together with its subsidiaries, forms one of the leading telecom groups in South-eastern Europe. OTE Group offers the full range of telecommunications services: from fixed-line and mobile telephony, broadband services, to pay television and ICT solutions and is the largest investor in new technologies and infrastructure in Greece, having invested over €2bn over the past six years. For the four-year period 2017-2020 it is materialising investments in the range of €1.5bn, primarily targeted at optic fibres and new generation networks.

Afterword

TOWARDS A BRIGHTER FUTURE

Although the government has established a Secretariat for Digital Strategy, not much progress has been made in the recent years, mainly because the government's focus is more on reviving the economy than investing in its future. But this is slowly changing.

A lot of local and international corporations operating in Greece are undergoing a significant digital transformation phase, trying to catch up with the rest of the world. The government is modernising some of its processes and tools that would even further boost this transformation, but there is a lot of ground to cover. Although there is a significant gap in new digital technological skills, the progress of developing new generation networks in the country will hopefully have a positive effect on the adoption of digitalisation in both the public and the private sectors. But digitalisation on its own is not enough. It is only one of the elements of a successful transformation. Equally important is cultural change, the ability to adapt, the cooperation with startups that benefits both sides and boosts innovation.

Such a transformation can accelerate progress, reduce bureaucracy and control costs. It will also directly affect "real economy" in verticals with significant contribution to the national GDP, like maritime and tourism, help job creation and reverse "brain drain", gradually making Greece a promising country, where talented individuals can make a difference. A culture shift will gradually be developed, as enterprises of all sizes will see the effects of digital transformation in other countries. With the help of technology, they will be able to modernise their internal and external processes, as well as their products and services.

We hope that in a few years, Greece will be in a position to stand on equal grounds with its European counterparts. Some of the ingredients needed are already here. It's all a matter of good execution of the right recipe.



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