



## **Digital Economic Opportunity in Spain**

How digitalization may boost  
the Spanish Economy

September 2017



**accenture**strategy

the  $\mathbb{R}^n$  is a linear space over  $\mathbb{R}$  with the usual addition and scalar multiplication. The inner product is defined by

$$\langle x, y \rangle = x_1 y_1 + \dots + x_n y_n \quad (1)$$

and the norm is defined by  $\|x\| = \sqrt{\langle x, x \rangle}$ . The inner product and the norm are related by the Cauchy-Schwarz inequality

$$|\langle x, y \rangle| \leq \|x\| \|y\| \quad (2)$$

and the triangle inequality  $\|x + y\| \leq \|x\| + \|y\|$ . The inner product and the norm are also related by the Pythagorean theorem

$$\|x + y\|^2 = \|x\|^2 + \|y\|^2 \quad (3)$$

if and only if  $\langle x, y \rangle = 0$ . The inner product and the norm are also related by the parallelogram law

$$\|x + y\|^2 + \|x - y\|^2 = 2\|x\|^2 + 2\|y\|^2 \quad (4)$$

and the parallelogram law is satisfied if and only if the inner product is defined by (1). The inner product and the norm are also related by the Minkowski inequality

$$\|x + y\| \leq \|x\| + \|y\| \quad (5)$$

and the Minkowski inequality is satisfied if and only if the inner product is defined by (1). The inner product and the norm are also related by the Hölder inequality

$$|\langle x, y \rangle| \leq \|x\|_p \|y\|_q \quad (6)$$

where  $\|x\|_p = (|x_1|^p + \dots + |x_n|^p)^{1/p}$  and  $\|y\|_q = (|y_1|^q + \dots + |y_n|^q)^{1/q}$  and  $1/p + 1/q = 1$ . The inner product and the norm are also related by the Young's inequality

$$|\langle x, y \rangle| \leq \frac{1}{2}(\|x\|^2 + \|y\|^2) \quad (7)$$

and the Young's inequality is satisfied if and only if the inner product is defined by (1). The inner product and the norm are also related by the Cauchy-Schwarz inequality

$$|\langle x, y \rangle| \leq \|x\| \|y\| \quad (8)$$

and the Cauchy-Schwarz inequality is satisfied if and only if the inner product is defined by (1). The inner product and the norm are also related by the Bessel's inequality

$$\langle x, x \rangle \leq \sum_{i=1}^n \langle x, e_i \rangle^2 \quad (9)$$

where  $e_1, \dots, e_n$  is an orthonormal basis for  $\mathbb{R}^n$ . The inner product and the norm are also related by the Parseval's identity

$$\langle x, x \rangle = \sum_{i=1}^n \langle x, e_i \rangle^2 \quad (10)$$

and the Parseval's identity is satisfied if and only if the inner product is defined by (1). The inner product and the norm are also related by the Plancherel's theorem

$$\langle x, y \rangle = \sum_{i=1}^n \langle x, e_i \rangle \langle y, e_i \rangle \quad (11)$$

## **CONTENT**

### ***Digital Transformation as a growth driver***



**Alberto Zamora**

Accenture Strategy  
Iberia Lead

The Digital Disruption we are witnessing is profoundly changing the way we live, work, and relate to one another. This 4<sup>th</sup> Industrial Revolution blurs the frontiers between the physical, digital, and human scenes, impacting business ecosystems, employment, policymakers, environment, and people habits in a broader sense.

Although the entire society determines the digitalization of an economy, business ecosystems have a leading role to empower the transformation through three sets of levers: digital skills, technologies and accelerators.

Based on our research, Spanish economy presents certain delay in its Digital Transformation when compared with its European peers, mainly due to the lack of a clear digital strategy, the digital talent gap, the operating complexity of companies, the limited investment in innovation and the sometimes-rigid regulation.

This delay has prevented the Spanish economy from realizing a tremendous value so far, but the good news is that we still have a huge economic opportunity ahead if the Digital Transformation is accelerated. In fact, if we accelerate the digitalization in Spain, there is an estimated opportunity of incremental GDP up to USD 48.500 million by 2021.

Throughout this study, we have identified the key initiatives to realize this value based on 5 key guidelines: Leadership, Digital Strategy, Investment & Execution, Digital talent & Organization and Government Support.

We intent this study to serve as a call for action for Spanish companies, institutions and policymakers to promote a shift towards digital. Thus, Accenture has joined its experience in the digital space with Mobile World Capital Barcelona (MWCB) to create awareness in the business ecosystem of the need of accelerating the digitalization of our economy and to help them navigate the process.



## **An opportunity for change**



**Constantí  
Serrallonga**

General Manager of  
Mobile World Capital  
Barcelona

Digitalisation is a global revolution that is here to stay. The eruption has brought about a paradigm shift requiring a strategic global, cultural and cross-sectional response. Joining the transformation in which we are immersed in, means evolving so we stand out from the crowd, and this requires investment, training and incentives for new social and economic ecosystems.

Identified as the economy with the greatest prospects for growth in the EU and the target of large international investment funds, Spain has a major opportunity within its grasp. After living through the economic crisis, the moment has arrived to grow, accelerate and make a qualitative leap forward. We have been given a great opportunity in which, if we are to grasp it to the full, requires cooperation and commitment among all parties involved. Only in this way, can we provide the right response to the challenge that we face as a society that is eager to improve.

In this context, we have the necessary potential to undertake a major process for change: research centres, business schools, human capital and talent, and government bodies willing to collaborate.

Since its conception, Mobile World Capital Barcelona Foundation has been a part of this essential driving force for change. The Foundation's work is oriented towards the areas driving this revolution: entrepreneurship and innovation, economic and industrial transformation and digital training and empowerment. In turn, these efforts have produced significant success: making Barcelona the mobile world capital and an increasingly relevant agent in the global digital ecosystem. This growth is thanks to the participation and collaboration of all agents involved, both public and private, who make up a continuously improving ecosystem and who offer a bright future.

The progress to date should provide the motivation to continue working in the same direction, ever faster, without looking back. The hurdles in our path are not easy and will require a lot of intensive work if they are to be overcome. Forecasts suggest that by 2020 around 1 million jobs will not be covered due to a lack of digital talent. With this mind, one of our goals must be to promote the training of talent and digital skills to ensure growth.

This revolution requires vital changes and a digital agenda for the country, leading it towards new forms of value creation. We must be able to develop a framework that incentivises and facilitates impact on all areas of our society; an environment for strategic growth that is also sufficiently dynamic to tackle the most immediate economic and social challenges.

This report contains a clear reference to the high rate of return from such efforts, with a genuine potential to increase our GDP. This goal should fill us with motivation and energy because, in short, it means improving people's quality of life, which is a fundamental aspect and constant challenge in our daily existence. We have before us a major opportunity to work together in fostering change that could position us as an economic leader in the digital age.

---

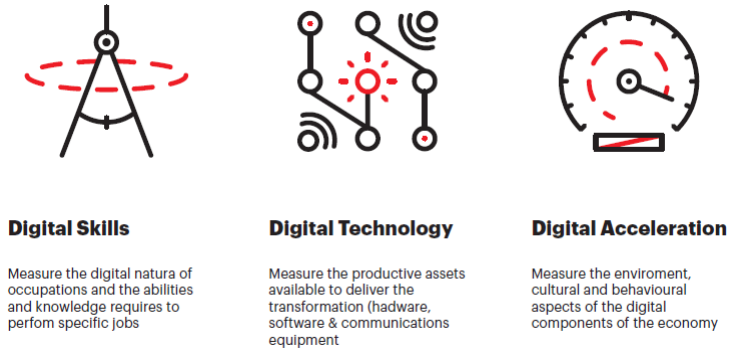
## ***Executive Summary***

# 1 Executive Summary

We live in an era of constant change, in which the Digital Disruption is profoundly changing the way we live, work, and relate to one another. This transformation is delivering immense benefits for businesses, consumers, society and environment, yet there are still challenges and threats that must be addressed.

One of the most relevant effects of the digitalization is the acceleration of the economy leveraging the latest technologies, such as artificial intelligence, data analytics, IOT, mobility and cloud computing. In the face of this scenario, Accenture and Oxford Economics developed the Digital Economic Opportunity (DEO) index to measure the digitalization and the digital opportunity within an economy.

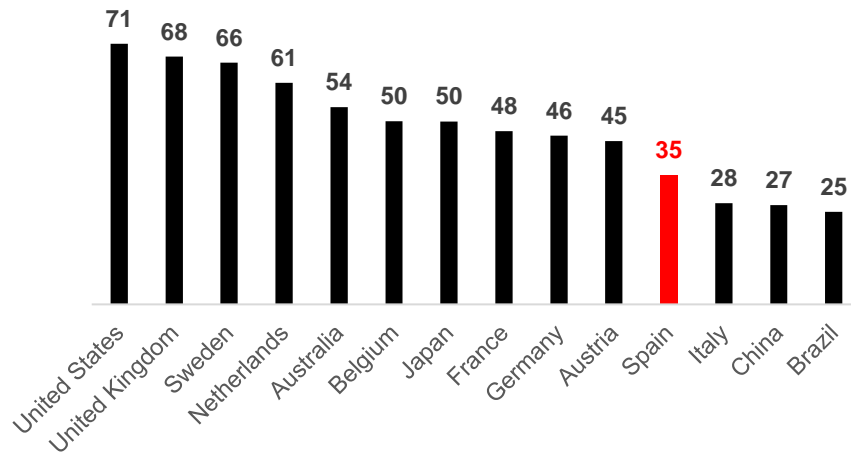
As the Digital Transformation spans far beyond cutting-edge technologies, our methodology structures the analysis through 3 levers:



## 1.1 Key quantitative findings

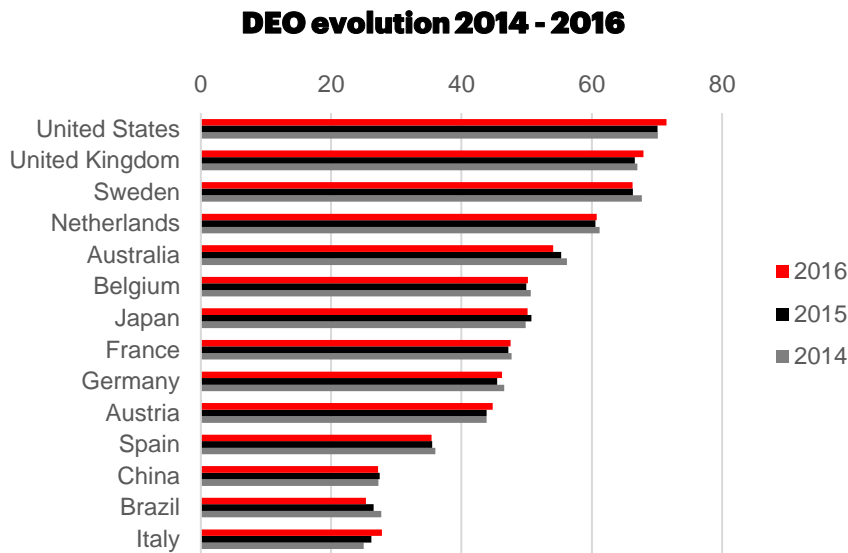
Our analysis positions USA and UK as world’s digital leaders, while Spain is still far behind even compared with the average of its European peers, as shown in the graph below.

**Digital Economic Opportunity 2016**



**Spain ranks 11<sup>th</sup> out of the 14 countries analysed, showing a significant room for improvement in its digitalization**

Not only Spain is in the back pack, but it is not closing the gap with the leading countries. In fact, the Spanish DEO decreased in 2014-2016, revealing that its digital growth has been lower than the peer average during this period, since the DEO is a relative index.



**The Spanish DEO evolution states the need for an acceleration of its Digital Transformation to follow Leaders' pace**

Source: "2016 Digital Economic Opportunity Index" – Accenture & Oxford Economics

## 1.2 Causes of the digitalization delay in Spain

There are a myriad of causes that explain the digitalization delay of Spain. Since there are many possible angles for this analysis, we have selected the most relevant causes across the three levers of our analytical framework:

### Digital Skills

The digital talent gap is a main cause of the delay from Skills perspective. As digital transformation is knowledge-intensive activity, it requires high density of digital talent, but the current demand for digital skills is not met by the offer in Spain. Low ICT salaries, youth unemployment and low demographic mobility are some of the reasons for the talent gap.

At the same time, companies in Spain have not invested as much as other countries in digital training, so employees' reskilling has also been delayed. The effects of the financial crisis are still noticeable in this space.

### Digital Technologies

The lack of a clear digital vision and strategy, coupled with the uncertainty around the profitability of new technologies and the operating complexity of Spanish companies are restraining the digital transformation.

Thus, the level of investment in innovation in Spain is still behind other European peers and the scarcity of corporate ventures makes it more difficult to transfer innovation from research centres and universities into the market.

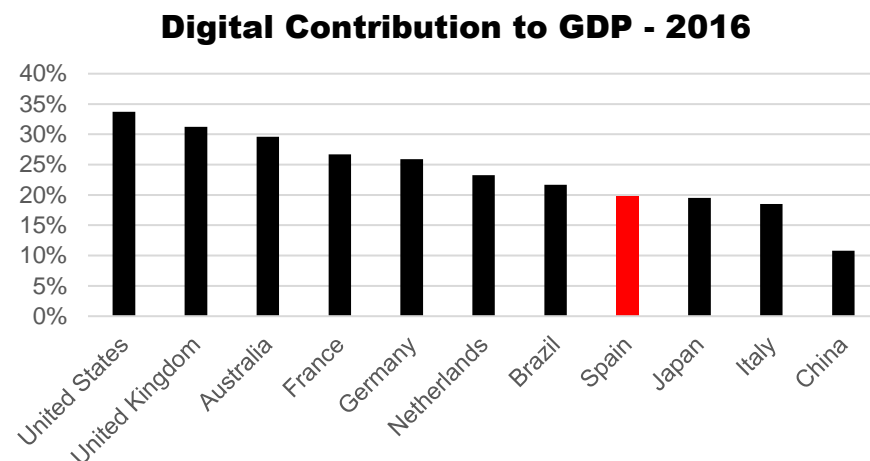


### **Digital Accelerators**

Regulatory frameworks, scarce innovation ecosystems and limited access to finance have also slowed down the digital transformation pace in Spain. Additionally, Spanish customer behaviour is more traditional than in other countries (e. g. ecommerce consumption), so companies have contemporised some digital investments as the Spanish customer behaviour continues evolving.

### **1.3 The opportunity ahead**

The digitalization delay in Spain shown by the DEO Index is confirmed by our analysis of the Digital Economy, in which digital contribution to Spanish GDP is again clearly behind world leaders.

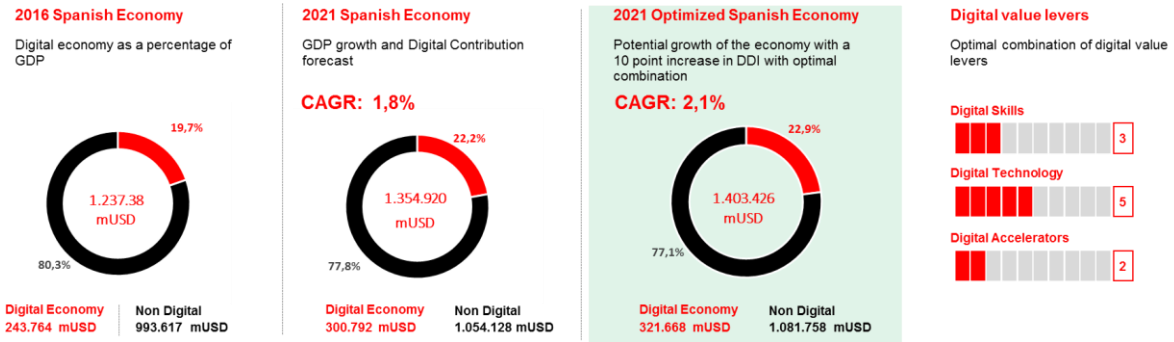


Source: "2016 Digital Economic Opportunity Index" – Accenture & Oxford Economics

We have analysed the optimal impact of a 10-point increase in the DEO on the Spanish GDP to size the multiplier effect of the Digital Transformation on the economy. These efforts do not necessarily mean a higher investment on top of the current plans, but a more efficient reallocation based on the needs of the Spanish economy.

---

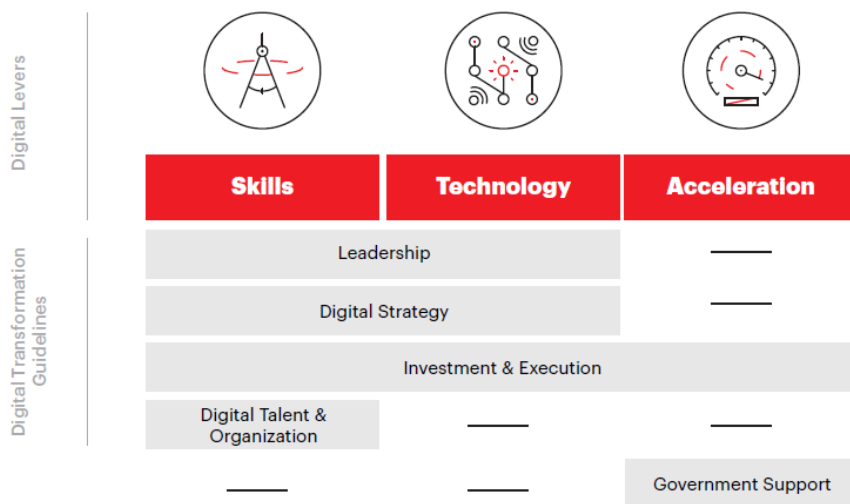
**If we accelerate the digitalization in Spain through the optimal allocation of efforts across the 3 digital levers, there is an estimated opportunity of incremental GDP up to USD 48.506 million by 2021.**



Source: "2016 Digital Economic Opportunity Index" – Accenture & Oxford Economics

### 1.4 The Digital Transformation roadmap

We consider 5 key guidelines to accelerate the Digital Transformation: Leadership, Digital Strategy, Investment & Execution, Digital Talent & Organization and Government Support.



Although there are many initiatives to be launched to accelerate the Digital Transformation across the 5 pillars, we have selected those that impact the most in the causes of the digitalization delay in Spain for each digital lever:

#### Digital Skills

We suggest three key initiatives to boost the digitalization of skills in Spain: acceleration of the reskilling of people, redesign work to unlock human potential and strengthen the talent pipeline.

#### Digital Technologies

Strengthening technology infrastructure and building new ecosystems are the two core initiatives we recommend to accelerate the roll out of Digital Technologies across Spanish companies.

## **Digital Accelerators**

Public sector and institutions can boost Digital Transformation by increasing the incentives (e. g. tax deductions), ensuring an appropriate regulation to foster investments and developing an educational system adapted to new digital needs.

### **1.5 The vision of leaders on the ground**

We have interviewed more than 25 Digital Leaders across the most representative sectors of the economy to get their vision about the digital trends, challenges and transformation pace in Spain.

Not surprisingly, we have found many common answers across all our questions regardless the sector. Leaders see a profound change in human habits and behaviours driven by new technologies that is forcing them to evolve their business models and the way they relate with their customers and employees.

We also found some technologies impacting all sectors; Big Data, Artificial Intelligence, IoT, mobility and cloud computing are top-of-mind trends when talking about the digital transformation.

Leaders know intuitively that Digital Transformation in Spain is noticeably delayed compared to reference countries such as USA, but key challenges depend on each company's context. Organizational resistance, limited investment, weak innovative ecosystems, regulatory frameworks and the pull of legacy businesses and technologies are amongst the most common challenges to accelerate digitalization.

### **1.6 Conclusions**

Digital Transformation in Spain is delayed due to several causes -from financial crisis in 2008 to the digital talent gap-, but the opportunity ahead is huge for the Spanish economy.

Defining an ambitious digital strategy should be the kick-start for a large-scale transformation that must be fully supported by business leaders to secure enough investments and get the right digital talent on board.

At the same time, the public sector will have a word in the speed and depth of the digital transformation acceleration in Spain through the evolution of current regulatory frameworks and fostering investments.

Now, it is time to double down Digital Transformation efforts across the business ecosystem to boost Spanish GDP

**We have found many common elements of Digital Transformation across sectors**



## Authors

Alberto Zamora  
Accenture Strategy Iberia Lead  
Alberto.zamora@accenture.com

Jordi Arrufi  
Mobile World Capital Barcelona  
jarrufi@mobileworldcapital.com

## About Accenture

Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions – underpinned by the world’s largest delivery network – Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With more than 411,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives. Visit us at [www.accenture.com](http://www.accenture.com).

## Stay Connected



Follow Us – Twitter  
[@AccentureStrat](https://twitter.com/AccentureStrat)



Watch Us – YouTube  
[www.youtube.com/accenture](http://www.youtube.com/accenture)



Connect With Us – LinkedIn  
[www.linkedin.com/company/accenture-strategy](http://www.linkedin.com/company/accenture-strategy)



Follow Us – Twitter  
[@MWCapital](https://twitter.com/MWCapital)



Connect With Us – LinkedIn  
[www.linkedin.com/company/mobile-world-capital-barcelona](http://www.linkedin.com/company/mobile-world-capital-barcelona)

## About Accenture Strategy

Accenture Strategy operates at the intersection of business and technology. We bring together our capabilities in business, technology, operations and function strategy to help our clients envision and execute industry-specific strategies that support enterprise wide transformation. Our focus on issues related to digital disruption, competitiveness, global operating models, talent and leadership help drive both efficiencies and growth. For more information, follow [@AccentureStrat](https://twitter.com/AccentureStrat) or visit [www.accenture.com/strategy](http://www.accenture.com/strategy).

## About Mobile World Capital Barcelona

Mobile World Capital Barcelona is an initiative driving the mobile and digital transformation of society while helping improve people’s lives globally. With support of the public and private sector throughout Barcelona, Catalonia and Spain, MWCapital focuses on three areas: the empowerment of new generations, professionals and citizens in the use of digital technologies; the digital transformation of industries; and the acceleration of innovation through digital-based entrepreneurship. Collectively, our programmes are positively transforming Education, Industry and the Economy.

Copyright © 2017 Accenture & Mobile World Capital Barcelona  
All rights reserved.

Accenture, its logo, and High Performance Delivered are trademarks of Accenture. Mobile World Capital Barcelona and its logo, are trademarks of Mobile World Capital Barcelona.

This document is intended for general informational purposes only and does not take into account the reader’s specific circumstances, and may not reflect the most current developments. Accenture disclaims, to the fullest extent permitted by applicable law, any and all liability for the accuracy and completeness of the information in this document and for any acts or omissions made based on such information. Accenture does not provide legal, regulatory, audit, or tax advice. Readers are responsible for obtaining such advice from their own legal counsel or other licensed professionals.

