SPAIN
Investment opportunities
ICT Sector
I. ICT Sector in Spain

II. The information Society in Spain
I. ICT Sector in Spain
I. ICT Sector in Spain

World Market

The World ICT market by region, 2014

- Asia Pacific: €740 Billion
- Europe: €768 Billion
- USA: €1,027 Billion
- Rest of World: €1,166 Billion

The World ICT market by segment, 2014

- Telecom services: 45.5%
- Telecom equipment: 15.3%
- IT services: 17.8%
- IT hardware: 2.4%
- Software: 11.2%
- Consumer electronics: 9.8%

Source: ONTSI (Spanish Observatory for the Telecommunications and Information Society), 2015. Data 2014 (Last data available)
Spain is one of the most important **ICT markets by volume** in Europe: **€97,931 Million**.

There are more than **32,000 ICT companies**, including digital content, operating in Spain. The sector is currently employing more than **453,000 workers**.

The **gross added value** at market prices represents the **4.9% of GDP** in **2015**.

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**Spain ICT Sector Turnover 2015**

- **Telecommunications**: 29.3%
- **Information Technologies**: 33.3%
- **Production**: 3.5%
- **Digital Content**: 15.8%
- **Commerce**: 18.1%
- **Commerce**: 3.5%

**€97.93 Billion**
Spanish companies are present and recognized in major international markets...

Spain is a leader in advanced technologies:

- Spanish software for air-traffic control is worldwide renowned and used
- High-Tech and Defense Industry
- Telecommunications, Utilities, Energy, Banking...
Leading **ICT multinationals** are already successfully located in Spain, taking advantage of Spain’s benefits:

### Software Vendors

- Hitachi
- SAP
- Oracle
- SAS
- Microsoft
- SAP AG
- Citrix
- Novell
- BMC Software
- EMC
- Unisys
- Ubisoft

### Hardware Vendors

- IBM
- HP
- Fujitsu
- NEC
- Sony
- Lenovo
- Toshiba
- LG
- Xerox

### Telecom equipment vendors

- Siemens
- Nortel Networks
- Cisco
- Samsung
- Ericsson
- Alcatel-Lucent
- ZTE
- Huawei

### Service Providers

- Vodafone
- TeliaSonera
- Google
- BT
- Colt
- Orange

### ICT Services and Consulting Companies

- Thales
- NTT Data
- UST Global
- Neoris
- Altran
- Accenture
- Ernst & Young
- Deloitte
- PwC
- Atos
- Softtek
- Capgemini
### ICT Industry: Telecom Operators

<table>
<thead>
<tr>
<th>Company</th>
<th>Direct Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Movistar</td>
<td>26,230</td>
</tr>
<tr>
<td>RTVE</td>
<td>6,302</td>
</tr>
<tr>
<td>Orange</td>
<td>4,008</td>
</tr>
<tr>
<td>Vodafone</td>
<td>3,634</td>
</tr>
<tr>
<td>Ono</td>
<td>2,425</td>
</tr>
<tr>
<td>Televisió de Catalunya</td>
<td>2,331</td>
</tr>
<tr>
<td>Rest</td>
<td>18,228</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>63,158</strong></td>
</tr>
</tbody>
</table>

- **Movistar** 41%
- **RTVE** 14%
- **Orange** 4%
- **Vodafone** 12%
- **Ono** 29%

### Main mobile operators

<table>
<thead>
<tr>
<th>Mobile Operators</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Movistar</td>
<td><a href="http://www.movistar.es">www.movistar.es</a></td>
</tr>
<tr>
<td>Vodafone</td>
<td><a href="http://www.vodafone.es">www.vodafone.es</a></td>
</tr>
<tr>
<td>Orange</td>
<td><a href="http://www.orange.es">www.orange.es</a></td>
</tr>
<tr>
<td>Yoigo</td>
<td><a href="http://www.yoigo.com">www.yoigo.com</a></td>
</tr>
</tbody>
</table>

### Mobile Virtual Network Enablers (Complete)

- DIGI Mobil: Movistar
- Lycamobile: Movistar
- Ono: Movistar
- Lowi: Vodafone
- R: Vodafone
- TeleCable: Vodafone
- Euskaltel: Orange
- Jazztel: Orange
- Simyo: Orange

### Mobile Virtual Network Enablers (Redistributors)

- Tuenti: Movistar
- Lebara, PepePhone, Hits Mobile, BT, Eroski Móvil: Vodafone
- Aire Networks, Carrefouronline, Día Móvil, LCR Telecom, MÁSmovil, Moreminutes, Procono, You Mobile: Orange

ICT Industry: Video Games

- The **Spanish Videogame development industry** had a turnover of **510.7 million euros** in 2015.

- There are around **500 Videogame companies** in Spain and more than 4500 workers in the industry.

84 Science and Technology Parks throughout Spain

I. ICT Sector in Spain

Infrastructures

Network Infrastructure Plan – RedIRIS Network (Network for the Scientific Community)

Source: RedIris, 2016
Encourage the deployment of ultra-fast networks
- At least 50% households 100 Mbps in 2020
  - Promote an improved user experience and promote appropriate service conditions
  - Encourage the deployment of ultra-fast broadband networks, optimizing the use of radio spectrum and improve the experience for broadband users

Develop the digital economy
- 33% of SMEs make online purchases or sales
  - Promoting the development of e-commerce
  - Promoting an innovative industry of digital content
  - Increasing public-private partnerships and identify and maximize the opportunities that are presented in this new scenario

Improve e-government and digital public services
- Increasing effectiveness and efficiency in public Administrations
  - Bringing the Administration to citizens and businesses
  - Increasing the levels of use of eGovernment
  - Rationalize and optimize the use of ICT in public administration

Building confidence in the digital
- Establishment of capabilities for monitoring and diagnosis of digital trust permanent
  - Boost market confidence services
  - Strengthen existing capacities to promote digital trust
  - Promote excellence in the organizations on digital trust

Encourage R & D + i in the industries of the future
- Double the total annual public spending on research and ICT development, in 2020
  - Leverage an equivalent increase in private spending
  - Increase the efficiency of public investment in R & D in ICT
  - Encouraging private investment in R & D in ICT
  - Promote R & D in ICT in SMEs
  - Expand the Spanish participation in R & D in ICT in the international arena

Supporting digital inclusion and ICT training new professionals
- Reduce to below 15% the percentage of population that has never used internet
  - Promote inclusion and digital literacy
  - Adapt training systems for digital training and ICT training new professionals


More than **2.4 Billion Euros** allocated by the government to fulfil the Digital Agenda, assuming the Digital Agenda for Europe in 2020.

It contains 106 lines of action structured around **6 main objectives:**
## I. ICT Sector in Spain

### IT Labor costs in Spain

<table>
<thead>
<tr>
<th>Job Category</th>
<th>Experience (0-2 years)</th>
<th>Experience (2-5 years)</th>
<th>Experience (5-10 years)</th>
<th>Experience (&gt;10 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country Manager</td>
<td>80 (20%) – 107.5 (40%)</td>
<td>100 (20%) – 142.5 (40%)</td>
<td>125 (20%) – 175 (40%)</td>
<td>140 (20%) – 195 (40%)</td>
</tr>
<tr>
<td>Chief Information Officer</td>
<td>80 (10%) – 102.5 (20%)</td>
<td>90 (10%) – 110 (20%)</td>
<td>125 (10%) – 152.5 (20%)</td>
<td>137.5 (10%) – 175 (20%)</td>
</tr>
<tr>
<td>IT Director</td>
<td>50 (10%) – 65 (20%)</td>
<td>55 (10%) – 75 (20%)</td>
<td>67.5 (10%) – 85 (20%)</td>
<td>75 (10%) – 95 (20%)</td>
</tr>
<tr>
<td>Chief Technology Officer</td>
<td>40 – 52.5 (10%)</td>
<td>52.5 – 65 (20%)</td>
<td>70 – 87.5 (20%)</td>
<td>90 – 125 (20%)</td>
</tr>
<tr>
<td>Chief Security Officer</td>
<td>50 – 51 (10%)</td>
<td>65 – 67 (10%)</td>
<td>85 (20%)</td>
<td></td>
</tr>
<tr>
<td>Development Manager</td>
<td>38.5 – 54 (10%)</td>
<td>45 – 63.5 (10%)</td>
<td>55 – 70 (10%)</td>
<td>64 – 77.5 (10%)</td>
</tr>
<tr>
<td>SW Architect (Java, .NET, etc.)</td>
<td>36 – 43.5 (5%)</td>
<td>41.5 – 46.5 (5%)</td>
<td>46.5 – 53.5 (10%)</td>
<td>48.5 – 56.5 (10%)</td>
</tr>
<tr>
<td>Team Lead (SW Development)</td>
<td>32.5 – 42.5 (10%)</td>
<td>40 – 45.5 (10%)</td>
<td>45.5 – 50 (10%)</td>
<td>50 – 55.5 (10%)</td>
</tr>
<tr>
<td>IT Business Analyst</td>
<td>27.5 (5%) – 33.5 (10%)</td>
<td>30 (5%) – 41.5 (10%)</td>
<td>36.5 (5%) – 49.5 (10%)</td>
<td>42.5 (5%) – 57.5 (10%)</td>
</tr>
<tr>
<td>Business Intelligence Consultant</td>
<td>25 – 32.5 (10%)</td>
<td>30 – 38.5 (10%)</td>
<td>35.5 – 48.5 (10%)</td>
<td>40 – 51.5 (10%)</td>
</tr>
<tr>
<td>IT Security Consultant</td>
<td>24 – 31.5</td>
<td>29.5 – 37</td>
<td>34 – 44.5</td>
<td>41.5 – 51.5</td>
</tr>
<tr>
<td>Java/J2EE Developer</td>
<td>21.5 – 25 (5%)</td>
<td>27.5 – 35 (5%)</td>
<td>34 – 40 (10%)</td>
<td>40 – 45 (10%)</td>
</tr>
<tr>
<td>.NET Developer</td>
<td>22.5 – 26.5 (5%)</td>
<td>29 – 33 (5%)</td>
<td>33.5 – 40 (10%)</td>
<td>38.5 – 43 (10%)</td>
</tr>
<tr>
<td>PHP Developer</td>
<td>21.5 – 24 (5%)</td>
<td>25 – 33.5 (5%)</td>
<td>30 – 39 (10%)</td>
<td>38 – 43.5 (10%)</td>
</tr>
<tr>
<td>ERP Consultant (SAP mainly)</td>
<td>24 – 31.5 (10%)</td>
<td>32.5 – 41.5 (10%)</td>
<td>37.5 – 47.5 (10%)</td>
<td>42.5 – 57.5 (10%)</td>
</tr>
<tr>
<td>Mobile Apps Developer</td>
<td>25.5 – 32.5 (5%)</td>
<td>30 – 37.5 (5%)</td>
<td>41.5 – 47.5 (5%)</td>
<td></td>
</tr>
<tr>
<td>CRM Consultant</td>
<td>26 (5%) – 34 (10%)</td>
<td>30 (5%) – 40 (10%)</td>
<td>34 (5%) – 43.5 (10%)</td>
<td>39.5 (5%) – 51.5 (10%)</td>
</tr>
<tr>
<td>Network Engineer</td>
<td>24 – 27.5</td>
<td>25 – 30</td>
<td>27.5 – 35</td>
<td>29.5 – 39.5</td>
</tr>
<tr>
<td>System Administrator</td>
<td>20 – 27.5</td>
<td>24 – 32.5</td>
<td>30 – 41.5</td>
<td>34 – 47.5</td>
</tr>
</tbody>
</table>

Data: Thousand € (In brackets, variable salary)

Study for the cities of Barcelona, Bilbao, Madrid, Seville and Valencia

Main Players: Private Sector

**AMETIC**

AMETIC, the Association of Electronics, Information and Communications Technologies, Telecommunications and Digital Content Companies, is the main point of reference in a sector which is one of the most dynamic in the Spanish economy and of unique importance for the development of the country. AMETIC is one of the largest and most representative business organizations in Spain, with over 3,000 members, comprising individual members and business groups, whose activities are related to the electronics, information technologies and telecommunications sector.

C/ Príncipe de Vergara 74, 4ª planta - 28006 MADRID
Tel: +34 91 590 23 00
http://www.ametic.es

**aDigital**

The Spanish Association of Digital Economy, Adigital, integrates businesses and organizations interested in the development of the digital economy for promoting and defending their interests.

C/ Ensenyal 218, Entlo - 08029 BARCELONA
Tel: +34 93 240 40 70
http://www.adigital.org

**AENTEC**

The Spanish Association of New Technologies (AENTEC) constitutes a group of very important companies in the Spanish technological landscape which focuses around a main objective: to create competitive, independent Spanish technology.

Paseo de la Castellana 141, Piso 20 - 28046 MADRID
Tel: +34 91 913 53 90
http://www.aentec.es
Main Players: Government

Red.es

Red.es is the public corporate entity attached to the State Secretariat for the Information Society and Digital Agenda (SESIAD) from the Ministry of Energy, Tourism and Digital Agenda (MINETAD). Their mission is developing programs to boost the digital economy, innovation, entrepreneurship, training for young people and professionals and support to SMEs by promoting the efficient and intensive use of Information and Communication Technologies (ICT). They also deploy technology implementation programs in the public services of the Administration and work for the development of Intelligent Cities and Islands.

ONTSI

The National Observatory for Telecommunications and the Information Society is a body attached to the public corporate entity Red.es, the main objective of which is the monitoring and analysis of the Telecommunications and Information Society sector.

ONTSI prepares, gathers, synthesizes and systematizes indicators, prepares studies and offers informative and updated services relating to the Information Society and is currently the leading public Observatory of the Information Society in Spain. ONTSI is also a meeting and dialogue point between the Information and Communications Technology sector and the different public administration bodies, for the definition of policies and the subsequent evaluation thereof.

Reports

Spain offers interesting opportunities in

- 3D Printing
- Big Data
- Cyber Security
- Digital Entertainment – Video Games
- e-Government
- e-Health
- e-Justice
- FinTech
- Internet of Things
- Nearshore Platforms
- Open Source Activities
- Smart Cities
- Smart Grids
- Social Media – Social Business
II. The Information Society in Spain
Spain in numbers

- In 2015, **mobile lines** reached the **50.8 million** mark (**109.2% penetration rate**)  
- There are over **120,000 stations** all over the country for **mobile telecommunications**  
- There are over **30 million internet users** in Spain  
- **77.1% of households** are equipped with **computers** (desktop, laptop, netbook or tablet) and **81.9%** of households are **connected to Internet**  
- **60.8% of people** over 15 years old have a **smartphone**  
- Spain has **14.7M gamers** that play **5.8 hours/week** in average  
- **99.7%** of the **enterprises** in Spain are **connected to internet** and **85.3%** of companies use some **Open Source Software**  
- **Spanish** is the **second most natively spoken language** in the world with **400 million native speakers**, after Chinese Mandarin  
- In February 2017 the registered **.es domains** reached **1,853,500**
II. The Information Society in Spain

3G (UMTS/HDSPA) & 4G (LTE): Population covered in Spain

Population with access to 3G (UMTS/HSDPA) networks by Province (%), 2015

Population with access to 4G (LTE) networks by Province (%), 2015

II. The Information Society in Spain

Broadband & Pay TV: Penetration Levels in Spain

Broadband Penetration by Province
Lines/100 inhabitants (2015)

Pay TV Penetration by Province
Subscribers/100 inhabitants (2015)

Technology: Household & Business Penetration

77.1% of households are equipped with computers (desktop, laptop, netbook or tablet):

ICT Household equipment in Spain

ICT Infrastructures in Spanish Businesses

Source: INE and ONTSI, 2016.
II. The Information Society in Spain

Broadband: Use of internet

Internet use in Spain by age range
Percentage of Internet users

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Percentage of Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 to 24</td>
<td>99.1</td>
</tr>
<tr>
<td>25 to 34</td>
<td>96.3</td>
</tr>
<tr>
<td>35 to 44</td>
<td>93.8</td>
</tr>
<tr>
<td>45 to 54</td>
<td>84.7</td>
</tr>
<tr>
<td>55 to 64</td>
<td>64.8</td>
</tr>
<tr>
<td>65 to 74</td>
<td>33.9</td>
</tr>
<tr>
<td>Total</td>
<td>81</td>
</tr>
</tbody>
</table>

Source: ONTSI based on INE, 2016.

Internet use in Spain by level of education
Percentage of Internet users

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Percentage of Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Education, First Level</td>
<td>42.6</td>
</tr>
<tr>
<td>Secondary Education, First Level</td>
<td>79.7</td>
</tr>
<tr>
<td>Secondary Education, Second Level</td>
<td>94.4</td>
</tr>
<tr>
<td>Vocational Training, Higher Level</td>
<td>97.3</td>
</tr>
<tr>
<td>Tertiary Studies</td>
<td>98.6</td>
</tr>
<tr>
<td>Total</td>
<td>81</td>
</tr>
</tbody>
</table>
**II. The Information Society in Spain**

**Broadband: .es Domains**

In February 2017 the registered **.es domains** reached **1,853,500**

Source: Red.es, 2016
Spanish is the second most natively spoken language in the world with around 400 million native speakers, only after Chinese Mandarin.

### Internet Users by language

<table>
<thead>
<tr>
<th>Language</th>
<th>Percentage of Users</th>
<th>Number of Users (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>26,30%</td>
<td>948,6</td>
</tr>
<tr>
<td>Chinese</td>
<td>20,80%</td>
<td>752</td>
</tr>
<tr>
<td>Spanish</td>
<td>7,70%</td>
<td>277,1</td>
</tr>
<tr>
<td>Arabic</td>
<td>4,70%</td>
<td>168,4</td>
</tr>
<tr>
<td>Portuguese</td>
<td>4,30%</td>
<td>154,5</td>
</tr>
<tr>
<td>Japanese</td>
<td>3,20%</td>
<td>115,1</td>
</tr>
<tr>
<td>Malaysian</td>
<td>3,00%</td>
<td>109,4</td>
</tr>
<tr>
<td>Russian</td>
<td>2,90%</td>
<td>103,1</td>
</tr>
<tr>
<td>French</td>
<td>2,80%</td>
<td>102,2</td>
</tr>
<tr>
<td>German</td>
<td>2,30%</td>
<td>83,8</td>
</tr>
<tr>
<td>Other</td>
<td>21,80%</td>
<td>797</td>
</tr>
</tbody>
</table>

Source: Internet World Stats, 2017. Data June 2016 (Last data available)