Analysis of Big Data Strategy in Spain

Big Data Inter Platform Initiative

Contents

Big Data Initiative

Goals

- Create a group of Spanish agents
- Alignment of national/European strategies
- Explore similar European initiatives
- Promote Spanish participation
- Profit dissemination
- Identify success stories
- Promote collaborative projects

Big Data Initiative

Goals

European strategy

Big Data EU Observatory
2017
TIC market growth rate x 6 = Big data market growth rate
Market movement: 50 billion € and generation of 3.75 million jobs
2020
Available 16 trillion Gb
Annual growth of data generation: 236%
Growth of 1.9% in GDP

European strategy

Legal framework of Big Data in UE

Requirements
Greater risk control in personal data
Protect consumer rights
Sectoral balance in Big Data operating profits

- EU regulation focused on companies
- “Data Protection Officer” role
  - Ensure data protection into products and services

European strategy

Strategic agenda

- BDVA PPP
  - Lining up the european strategy with the private enterprise and research organizations.
  - Reinforcement of data value chain.
  - Establishment of a *data market* to improve competitivity, growth and employment.
  - Strengthening the european position into a global market.
- H2020
  - *Lighthouse* in industrial sectors (transport, agriculture, bio-economy, etc.)
  - Experimentation and data integration measures into *iSpaces*
  - Networks and communities for active union with a common goal.
  - Calls for proposal to promote the Big Data.

European strategy

Other european initiatives

Network of Big Data Centers of Excellence in Europe

Big Data Inter Platforms Initiative

- Smart Data Forum (Germany)
- The Network of Big Data Centers of Excellence in Europe (european network for investigation).
- Big Data Forum (Finland)
- Rise Data Science (Sweden)
- Emilia Romagna Big Data Community (Italy)

Positioning in Spain

National mapping of Big Data strategy

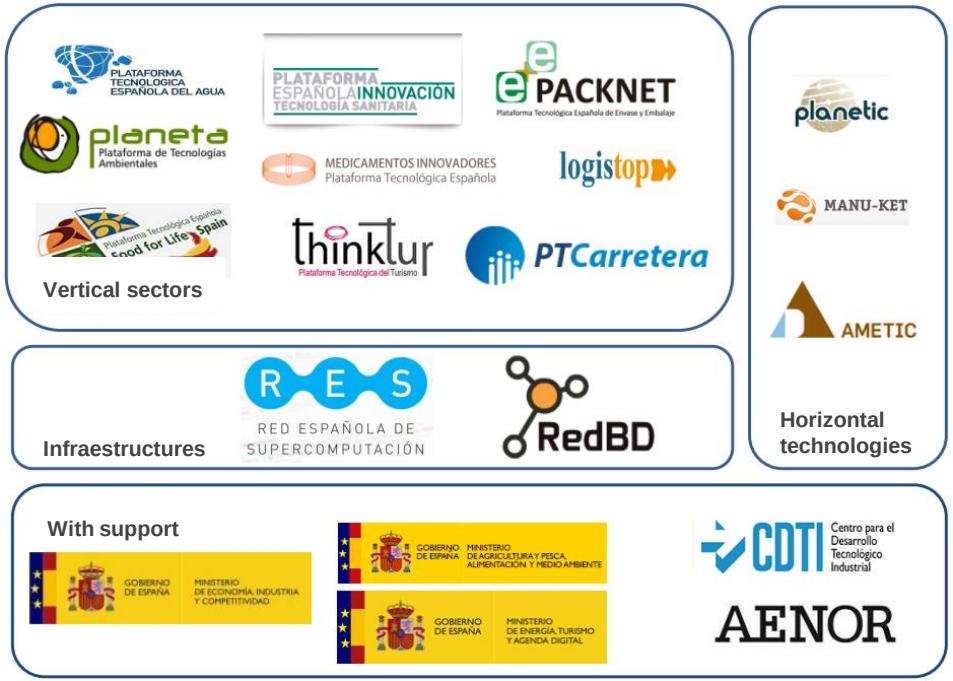
- Spain Digital Agenda
  - Promoting the most relevant ICT initiatives: Big Data, Smart Cities or Cloud Computing

Big Data projects	2015	2016
Requested projects	67	48
Granted projects	18	8
Requested budget	35,6M €	25M €
Funded budget	7,4M €	3,7M €

Financed projects by calls for proposals in the AEESD in 2015 and 2016. Source: Secretary of State for the Information Society and Digital Agenda

Positioning in Spain

Stakeholders



Positioning in Spain

Supply and demand of sectors represented

Water

Data

Data related to the water consumption, management and planning of the distribution system.

A demand centered on the observation of the Earth and on the data obtained by sensors in the distribution system.

Technology

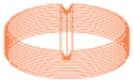
Provides information systems for water management, flow sensors, hardware for real-time management and social networks.

The *Plataforma Tecnológica Española del Agua* has Big Data pilot projects. They are interested in integration of management tools with Big Data technology.

Big Data experiments deploying, analytical techniques application and deep learning in water network systems.

Positioning in Spain

Supply and demand of sectors represented



MEDICAMENTOS INNOVADORES
Plataforma Tecnológica Española

Health

Data

It offers data according to privacy: (1) pharmacological, genetic, clinical and laboratory, with access restrictions; (2) public databases of aggregated data and biomedical publications.

It demands clinical data for research and the access to pharmacological/toxicological data sources.

Technology

Filtering, data mining and machine learning tools.

Software for the elaboration of predictive models that already offers management of large volumes of information.

Its demand is not leaving computational area they are working in.

Positioning in Spain

Supply and demand of sectors represented

MANU-KET

Industrial/manufacturing

Data

It offers machine monitoring data, coming from multiple sources such as cameras, sensors, databases, OPC or file systems

It demands data about maintenance of production chain or material composition in real time.

Technology

Huge pool of systems, from those related to sensors inside industrial processes to social network analysis tools.

Data analysis and correlation tools as well as a laboratory called *Emulab*

Data mining tools

Positioning in Spain

Supply and demand of sectors represented

ITC

Data

It offers geotechnical data of public lightning and energy consumption of industrial machines.

It demands statistical data about tourism, city mobility, medical and biometrical data, network traffic in communication systems.

Technology

Wide range of modeling and analytical systems for BI, predictive energy analysis, data / maps / photos management, signal capture systems, social network management, data analysis and storage, mass data correlation, elastic searches, analysis network traffic and qualification of tourist information.

It demands Big Data exploitation of data specified in *offering* section.

Positioning in Spain

Supply and demand of sectors represented

Tourism
Data
It offers, among others, data of social networks of tourism, opinions of travelers, tourist information, sensors of devices and tourist offer.
It demands knowledge about customers, demand and price predictions, or carrying capacity of destinations for decision-making providing valuable information.
Technology
It offers information systems for tourist management by destinations, internal management systems of tourism companies, operational issues, marketing and promotion, social network management, revenue management, among others. Intelligent Tourist Destinations.
It demands demonstration pilot projects for information extraction from several sources, data processing and visualization that allow obtaining information with added value. From Big Data to Smart Data.

Current Innovation Poles

Big Data Inter Platforms Initiative

- Enterprises with skills to mass data mining
  - in better disposition to planify
  - strengthening of aptitudes to discover knowledge
  - perform behavioural prediction in uncertainty scenarios
- Industrial processes, products and services are getting better in an exponential way due to:
  - business digitization
  - world instrumentation (sensors, IoT, cyber physical systems, etc.)
  - growing availability of data
  - IA analysis of data

Current Innovation Poles

Facilitators

- Level maturity scientific and technology
  - Volumes, speed and wide range of data is growing at an exponential rate
  - Availability of new systems and technology to data process
- Level maturity of systems
  - The development of data storage, processing and communication systems continues to expand exponentially from the point of view of power and cost reduction
- Level maturity of the market
  - Change of digital mindset in in several segments
  - Focused on efficiency, costs reductions and seeking new sources of revenue
- Level maturity social
  - Growing concern about the use, security, privacy and property of data

Current innovation poles

Sectoral analysis

SECTOR	Data availability	Talent retention and access	TIC infraestructure deployment	Organisational mature
INDUSTRY	««	««	«	«
HEALTH	««	«	«	«
ENERGY (UTILITIES)	««	««	««	«
WATER (PUBLIC BODIES AND UTILITIES)	««	«	«	«
PUBLIC BODIES	«	«	«	«
CITY MOBILITY	«	«	«	«
FINANTIAL	««	«	««	««
MARKETING	«	«	«	«
MEDIA	«	«	«	«
TELECOMM	«	«	««	««
TOURISM	««	«	«	«

Current innovation poles

Analysis of Big Data development

- Volume management and scalability of large-scale data sources
- New large-scale data sources addition
- Analysing and learning from data

- Vertical applications that use special techniques to specific issues: marketing, social media, financial services, etc.
- New large-scale data sources addition
- Interoperability with business intelligence (BI)

- Top-down analysis of objectives and real information needs
- Integration of a large number of heterogeneous sources and ETL processes
- Smart Data

Current innovation poles

Foresight

- Data exponential growth
- Increasing data analysis quality and quantity
- *Growing Machine Learning* for classification and predictive analysis technologies
- Focus on improving cybersecurity and data privacy
- Increasing demand of *data scientists* y *data managers*
- Data business model as a service (data monetization)
- Cognitive computing on the rise
- Fast/actionable data will replace the Big Data

Big Data Pilot Projects

European level (H2020 2014-2016)

Acronym	*Title*
ODINE	*Open Data Incubator for Europe*
AutoMat	*Automotive Big Data Marketplace for Innovative Cross-sectorial Vehicle Data Services*
MixedEmotions	*Social Semantic Emotion Analysis for Innovative Multilingual Big Data Analytics Market*
BISON	*Big Speech Data Analytics for Contact Centers*
QROWD	*Because Big Data Integration is Humanly Possible*
EW-Shopp	*Supporting Event and Weather-based Data Analytics and Marketing along the Shopper Journey*
DataBio	*Data-Driven Bioeconomy*
TT	*Transforming Transport*
DatACRON	*Big Data Analytics for Time Critical Mobility Forecasting*
PROTEUS	*Scalable online Machine Learning for Predictive Analytics and Real-Time Interactive Visualization*
TOREADOR	*Trustworthy Model-Aware Analytics Data Platform*
BigDataEurope	*Integrating Big Data Software and Communities for Addressing Europe's Societal Challenges*
EuDEco	*Modelling the European Data Economy*
BDVe	*Big Data Value Ecosystem*

Big Data Pilot Projects

National level (2011-2016)

- Program typology

Typology	Projects granted	Budget
CIEN (Collaborative projects)	4	34.685.367 €
ID (Individual projects)	67	44.492.734 €
ITC (Innterconecta Program, col.)	15	31.092.566 €
LIC (Innovation projects)	2	3.428.785 €
NEO (Technology-based companies)	6	2.140.406 €
Total	94	115.839.858 €

- Annual evolution of projects granted about Big Data

Year	Projects granted	Budget
2011	3	5.420.483 €
2013	10	8.483.353 €
2014	11	17.556.116 €
2015	39	51.998.693 €
2016	31	32.381.213 €
Total	94	115.839.858 €