Driving digital transformation through (big) data

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Rome, 2018
Introduction
Digital Transformation & Analytics

**WHAT**
The ability to manage data is critical to the success of organisations such as the European Commission

**WHY**
To become a data mature organisation to take informed decisions

**WHAT FOR**
- Policy-making
- Functioning
- Transparency
- Providing services

**How**
Through the Digital Transformation
- Data4Policy
- Data, Information and Knowledge management
- Data Strategy
- Data Services
Objectives

Maximise the use of data to the fullest to support the policy making lifecycle and the internal functioning

1. Experimenting with technology
   - Scale-up

2. Federating capabilities
   - Scale-up

3. Creating platforms
   - Scale-up

By carrying out different pilots, we understood how the policy-making lifecycle and the internal functioning could benefit from technology...

... and create a collaborative environment (ecosystem)...

... with the ultimate objective of fostering innovation and providing ready-to-use environments...
Experimenting with technology

Background

The role of Data analytics

All types of data can provide valuable insights for public authorities provided they are analysed in the correct way, making use of solid analytical processes for the type of data, hypothesis and questions at hand. Due to the nature of (big) data, relevant technology is an important element to process the data and discover insights.
Experimenting with technology
Pilots (1): analysing feedback from citizens - DORIS

Why a solution was needed?

- To analyse data from open and closed questions
- Dashboard to visualise and further analyse the results of the consultation
- Text analysis, sentiment analysis, data mining and reporting techniques to facilitate the analysis of structured and unstructured information
- Optimisation of the time required for the analysis

The solution

- Different analytics techniques (clustering, keyword extraction, name entity recognition, sentiment analysis and campaign detection)
- Web interface to access the results of the analysis with basic functionalities such as filters, maps, translation and automatic charts
Experimenting with technology
Pilots (2): job market analysis - Victory

Why a solution was needed?

- To analyse all job vacancies that are published in employment portals in order to be able to launch vacancy-unification policies.
- To analyse the employability in Europe.
- To discover the market trends when it comes to IT needs.

The solution

- Job vacancies data was purchased to the job employment service providers with a total of 50 millions of records analysed per year.
- Different algorithms were applied to prepare the information and machine learning techniques to classify and analyse the data.
- A web tool has been developed to visualise the results.

Some results...

- England is the region that publishes the largest number of IT job vacancies (related to analyst or software programmers and applications).
- The country with the lowest IT vacancies is Italy and the most public is Germany.
- The most required degree is Master.
- Generates quality employment, the vast majority of contracts are permanent.
- Large companies generate 1.5 more vacancies than SMEs.
- The most demanded experience is 2 years, 3 to 5 years, and.
- The most frequent salary range is between 16-30K
Federating capabilities

Objectives

1. Promote teamwork and overcome silo mentalities

2. Harnessing synergies between portfolios

3. Give more visibility to the work done by different services and foster re-use as a service

The strategic use of data, information and knowledge is an essential part of this new way of working. Hence, data, information and knowledge need to be shared and exploited in order to remove the barriers that still hamper working together.
Federating capabilities
Federated Catalogue of Services: User Interface

What can you find here?

While gathering is still important, gathering and analyzing relevant data is the basis of an effective decision making. Being from a policy OCR or a horizontal service, you probably need to use and analyze various data in your projects. Here you can find data and analysis services, provided by different CDOs that have put in place the needed capabilities. The services can include data, tools and/or expertise to guide you in the choice of a service or its use, according to your own business context.

Tools
Access to tools and methodologies that will help you fulfill your data needs, from generic analytics tools to custom-made solutions for specific demands or policy areas.
A wide range of tools, platforms, frameworks and methodologies to choose from, developed or made available by different CDOs.

Data
Access to internal and external data sources and datasets that will help you complete your analysis and make better informed decisions.
Different datasets are published in a variety of internal portals or external locations. You might find exactly what you need for the task at hand.

Experts
Expert advice that will help you find the best solution for your needs.
A set of experts from different services who will guide you in the setup and implementation of your data projects.
Creating Platforms
Big Data Test Infrastructure: Background

This Big Data Test Infrastructure is one of the activities under ISA² Action 2016.03 – Big Data for Public Administrations, funded by the ISA² Programme.

The ISA² programme supports the development of digital solutions that enable public administrations, businesses and citizens in Europe to benefit from interoperable cross-border and cross-sector public services.

Problem statement:

- Adoption of analytics technologies is lagging behind in public administrations
- Lack of a turn-key cloud environment that offers a full stack of technologies to test the value of new ways of processing big data

Objective:

Support the execution of Big Data pilots under different policy domains by any interested Public Administration and Institution in Europe enabling the implementation of both Big Data pilots at National/Local level and at cross-border level.

The infrastructure is to be used by the Commission and by interested Public Administration in the EU.
EC Data Ecosystem
Thank you for your attention

Driving digital transformation through (big) data
European Commission
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