

Tools for Innovation Monitoring

Published On: 03 April 2017

Organisation: European Commission

Country: European Commission

Level of government: Central government

Sector: General public services

Type: Data

Launched in: 2016

Overall development time: 2 year(s)

Link to the innovation's website

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Description

The TIM project (Tools for Innovation Monitoring) aims at developing text mining and visualisation tools to help policy-makers apprehend complex, large, and changing datasets in the field of innovation. Main applications of TIM are: detect and monitor emerging technologies, detect new trends in science and technology, manage funding programmes for research and development.

Accurate, targeted, and timely information is needed by European Institutions at almost every stage of the decision making process. This Information is increasingly embedded in large amounts of textual data available on the Internet, e.g. in traditional or social media, or in large public or proprietary document sets. The sheer volume of data makes it nearly impossible to extract the available information manually. Tools to search, retrieve, combine and visualise data and information are then needed to timely delivery relevant information to policy makers. This is key to a better performing European public administration. TIM combines text mining and analysis techniques with computational linguistics, database bridging, and visualisation techniques to to address not only the problem of volume, but also of timeliness in order to provide the right information in the proper format for the decision making process, in a variety of contexts.

The issue of monitoring innovation and technological development is a widely shared problem. TIM tries to cover the whole cycle of innovation and is unique in the sense that it integrates various sources of data related to innovation: scientific articles, book chapters, conference proceedings, patents, trademarks, designs, news from media, data on EU grants programme, data on companies, etc. These data are bridged to allow the users to navigate through the sets of data.

Why the innovation was developed

- Policy makers need accurate and timely information which is increasingly embedded in large volumes of textual data online.

Objectives

Improve effectiveness

Main beneficiaries

Academia, Government bodies, Government staff

Results

Results not available yet

Development

Design

Internal development based on the original idea from staff from the European Commission Joint Research Centre and staff from CERN, strongly supported by the Director-General of the JRC.Design time: 1 year(s) 3 month(s)

Testing

- Pilots
- Beta testing

Testing time: 3 month(s)

Implementation

Tools used:

- SolR, Postgress, Java, Gefi

Resources used:

- 7 full-time equivalent staff
- 2016 budget is c. 500k €, include licensing fees for access to proprietary data

Implementation time: 6 month(s)

Challenges and solutions

- Dataset bridging is a challenge. TIM used the same approach as the one developed in the project Europe Media Monitor, another flagship text mining project of JRC. Bridging of data is made using an entity matching process resulting in uniquely identifying entities.
 - Visualisation of information in the relevant format is a challenge and is taken up by closely interacting with users and a clever software architecture allowing easy development of new visualisation.
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Partnerships

CERN & Europe Media Monitor team

Academics and Research Bodies, Other Public Sector

CERN was at the origin of the project and participated in the design phase. Europe Media Monitor team (JRC) supported us throughout all the phases of development.

Lessons Learned

Lessons Learned

- Data visualisation and analysis projects in government environment should: - integrate IT developers, data scientists, and technologists (depending on the field of application); - be user-driven to ensure the IT solution is actually used; - be product-oriented and focus on the delivery of real useful IT systems.
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Conditions for success

- Support from hierarchy, user driven approach, problem solving and product orientation, proper IT supports, vision.
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Other information

Full results to be expected after official launch of TIM end of October. Impact of the project is related to what various text mining tools will bring to policy-makers: - A more horizontal non-fragmented EC-wide approach to big data (textual data); - A more holistic approach to policy-making by wider data coverage and more data intelligence; - Improved capacity to apprehend complex, large, and changing datasets of relevance for policy making; - Timely delivery of information to policy-makers; - Spotting trends and patterns in large complex datasets for a better informed and proactive policy making; - Specific policy benefits in the fields where text mining is applied: innovation, funding management, evaluation, smart specialisation, territorial and urban policies...

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