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IMPROVING UPTAKE OF TEXT AND DATA MINING IN THE EU

Impact of Text and Data Mining
on European Economic Growth

### How does Text and Data Mining Impact Economy?

Text and Data Mining (TDM) is closely related to the concept of Big and/or Open Data. To put it in simple words – the activity of mining text and data allows us to translate the vast, unstructured, and unstoppable flow of data into useful pieces of information. It can be argued that thanks to TDM, Big and/or Open Data is changed into actionable intelligence – specific insights that allow us to advance economic, social and scientific processes.

Big and/or Open Data is forecast to boost European economic growth by a further 1.9% by 2020 (Bukowski, 2014). This growth will happen mainly through three types of economic gains to organizations and institutions:

1. Resource efficiency improvements through reducing the information concerning resource waste in production, distribution and marketing activities.

2. Product and process improvements through innovation based on R&D activities, day-to-day process monitoring and consumer feedback.

3. Management improvements through evidence based, data-driven decision making.

Although it is hard to say which part of this growth is attributable to TDM and which to the construction of Big and/or Open Data, without making Text and Data Mining widespread in various fields of human

Types of economic gain through
Big and/or Open Data

1 Resource Efficiency Improvements

2 Product and Process Improvements
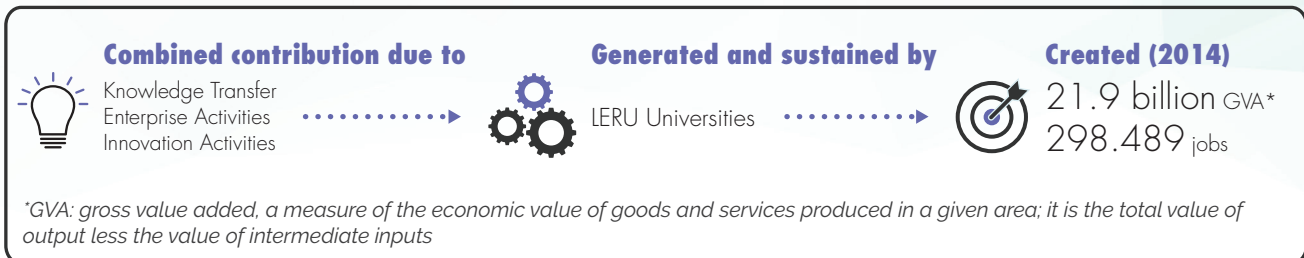
3 Management Improvements
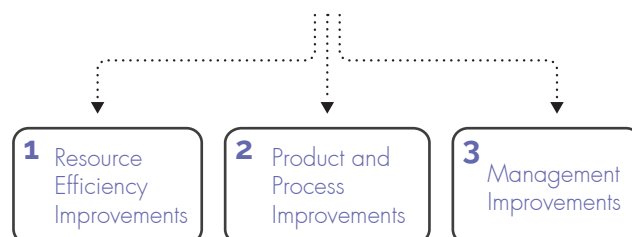
Source: Bukowski 2014

activity, it is much less probable that societies will be able to capitalize on the phenomenon of Big and/or Open Data. Therefore, accessibility and quality of TDM will determine to a wide extent the economic influence of Big and/or Open Data. In other words – Big and/or Open Data will arrive at its full potential only through Text and Data Mining.

Complexity of TDM's Economic Impact

One of the most talked about aspects of making Big and/or Open Data contribute to economic growth through TDM is related to the market players. Private companies need to leverage the data that they themselves gather, link it with Open Data (if necessary) and develop TDM capabilities in order to be able to translate those vast informational resources

IMPACT OF KNOWLEDGE TRANSFER ON THE ECONOMY

Combined contribution due to
Knowledge Transfer
Enterprise Activities
Innovation Activities

Generated and sustained by
LERU Universities

Created (2014)
21.9 billion GVA*
298.489 jobs

*GVA: gross value added, a measure of the economic value of goods and services produced in a given area; it is the total value of output less the value of intermediate inputs

Source: BIGGAR, 2014

into specific actions. Thanks to this, companies will be able to become more effective (management decisions will be faster and more accurate), as well as efficient (thanks to better usage of resources).

Perhaps the most promising aspect of TDM's economic impact is its ability to boost innovation through more effective R&D. Part of the R&D value chain is driven by companies themselves. However, much of the capacity for innovation in the economy is also determined by what one may call innovation infrastructure – and well prospering universities are a vital element. What is important to underline, is that university R&D capacity is of crucial importance to Small and Medium Enterprises (SMEs) – for, very often, they are too small to conduct necessary research by themselves.

Universities directly boost the economy through the knowledge transfer that is possible thanks to the vast amount of research and research related activities that are, in general, a stronghold of the world of academia. Based on their research capacities, universities produce innovations and technological advancements that are then sold or licensed to the world of praxis (either market entities, public administration bodies, or even third sector organizations). Knowledge transfer can also take place in form of consultancy activities or specifically contracted research by a third party. Many spin-off companies start up as a direct result of university born research.

It has been calculated that "[t]he combined contribution due to knowledge transfer, enterprise and innovation activity generated and sustained by the LERU Universities [was] €21.9 billion GVA and 298,489 jobs across Europe as a whole" in 2014 alone (BiGGAR, 2015).

Evidently, economic impact is related to the concept of capitalizing on research. It follows that both process and outcomes of producing knowledge through research can be improved through popularization of the usage of Text and Data Mining by European university based researchers.

TDM: Economic Impact through Academia

In order to realise the promise of Big and/or Open Data as a means to influence Europe's economy, we need to guarantee both accessibility and quality of Text and Data Mining activity in the EU - for companies and academia. Safeguarding access to and quality of TDM for university based researchers is an investment in Europe's innovation infrastructure. It should be seen as a vital part of the European economy and its future growth and development.

In addition, increased uptake of TDM by researchers will make the process of knowledge discovery more efficient and this will further boost economic impact. It is estimated that for "each €1 in GVA directly generated by the LERU Universities, there was a total contribution of almost €6 to the European economy" (BiGGAR 2014: 1). It is fair to assume, that making research more efficient will further boost this proportion making universities more economically impactful.

Resources:

1. BiGGAR Economics. (2014). Economic Contribution of the LERU Universities, Scotland: BiGGAR

2. Bucholtz, Sonia, Maciej Bukowski, Aleksander Śniegocki. (2014). Big and open data in Europe - A growth engine or a missed opportunity?, Warszawa: Warsaw Institute of Economic Studies

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