BDVA's input to the Digitising European Industry Working Group 2 "Strengthening leadership in digital technologies and in digital industrial platforms across value chains in all sectors of the economy" Follow up to the workshop on October 21st, 2016

Digital transformation of health and care Subgroup

November 2016

The Big Data Value Association, representative of the Big Data Value (BDV) PPP, was invited to participate in the Digitising European Industry Working Group 2 workshop that took place in Brussels on October 21st, 2016. Three representatives of our Industry-led association joined the workshop and contributed in the different subgroups. This document is the BDVA response to the requested input by the European Commission to the questions addressed during the workshop, and in particular to the subgroup "**Digital transformation of health and care**". BDVA has also submitted input for the "Industrial Data Platforms" and the "connected smart factories" subgroups through different and independent documents.

This input is provided by **BDVA TF7 (Applications domains) Subgroup Health**. It also refers to the the **BDVA Strategic Research and Innovation Agenda (SRIA)** [1]. The BDVA SRIA is built upon inputs and analysis from SMEs and Large Enterprises, public organisations, and research and academic institutions. Stakeholders include suppliers and service providers, data owners, and early adopters of Big Data in many sectors, with approximately 200 organisations and other relevant stakeholders physically participating and contributing.

Where do we want to go?

- ## What kinds of next-generation platforms are needed (if any)?

The next generation platforms in healthcare should include:

- Tools and methods to support Big Data analytics
- Tools and methods to support Artificial Intelligence and knowledge-based approaches
- Processes and methodologies for fast validation of results in clinical trials
- Tools and methods for simulation of biological processes
- Techniques for data/knowledge standardization and interoperability
- Mechanisms to deal with ethical and privacy issues

[1] http://bdva.eu/sites/default/files/EuropeanBigDataValuePartnership_SRIA__v2.pdf

- **What kinds of large-scale federating initiatives are needed** (if any)?

Linking and aggregation of information from different databases, various data sources and types in healthcare domain, not just within a single hospital's/GP clinic's IT infrastructure, but also across multiple healthcare providers, other healthcare players (e.g. insurance & pharma) and even consumer-generated data, is the upcoming challenge that all stakeholders have to consider and find a way to cope with. Therefore, projects that include combination of ICT and Health DGs are needed.

- **what concrete gaps/problems could be addressed through** platform development and **large-scale initiatives at EU level**?

The gaps/problems that could be addresses through platform development are the following:

- Technological challenges:
  - Variety of data (handling with a multiplicity of types, sources and formats),
  - Data veracity (related to the quality and validity of data)
  - Data velocity (availability in real time)
  - Structured and unstructured data
  - Interoperability and data integration limitations
- Social and legal factors such as:
  - Data trustworthiness
  - Data protection
  - Ethical and privacy issues
- Standardization

How do we bridge the gap between what we have and what we want to achieve?

- What concrete platform building initiatives and large-scale pilots can be expected/supported/promoted?

A virtual Data Place for the advancement of Personalised Medicine for cancer and other diseases, which albeit decentralised, would be able to operate securely and in respect for patient confidentiality as a cloud federation providing comparable data with analytics and visualisation capabilities.

Who are the main stakeholders to be involved?

- How can PPPs contribute to building platforms?

The Big Data PPP can contribute in the following way:

- Leverage the i-Space instrument to create eco-systems involving Big Data infrastructures, methods and tools, skills, data etc. and demonstrate their value for the healthcare applications.
- Leverage the Lighthouse instrument applied to healthcare. A potential healthcare lighthouse project can be used to develop interoperability between different health Big Data platforms that

will be available to European industry, end users (hospitals, primary care etc.), and public sector. An example of such a platform is Philips HealthSuite Digital Platform.

- Leverage granted projects to develop particular platform components important to healthcare.

About BDVA

The Big Data Value Association AISBL (BDVA) is a fully self-financed non–for-profit organisation under Belgian law. The Big Data Value Association (BDVA) is the private counterpart to the EU Commission to implement the BDV PPP programme (Big Data Value PPP). BDVA has over 150 members all over Europe with a well-balanced composition of large and small and medium-sized industries as well as research organizations.
The BDV PPP was launched in 2014, but its operationalization has been especially pushed forward with the launch of the LEIT work programme 2016/2017
The objectives of the Association) are to **boost European Big Data Value research, development and innovation and to foster a positive perception of Big Data Value**. In particular, BDVA aims at:

- strengthening competitiveness and ensuring industrial leadership of providers and end users of Big Data Value technology-based systems and services;
- promoting the widest and best uptake of Big Data Value technologies and services for professional and private use;
- establishing the excellence of the science base of creation of value from BIG DATA.

About the Author

Prof. dr. Milan Petkovic
Department Head Data Science, Philips Research
Faculty of Mathematics and Computer Science, Technical University Eindhoven
Vice President, Big Data Value Association
Marija Despenic, MSc,
Research scientist, Data Science Department, Philips Research

BDVA TF7 (applications) Health subdomain.