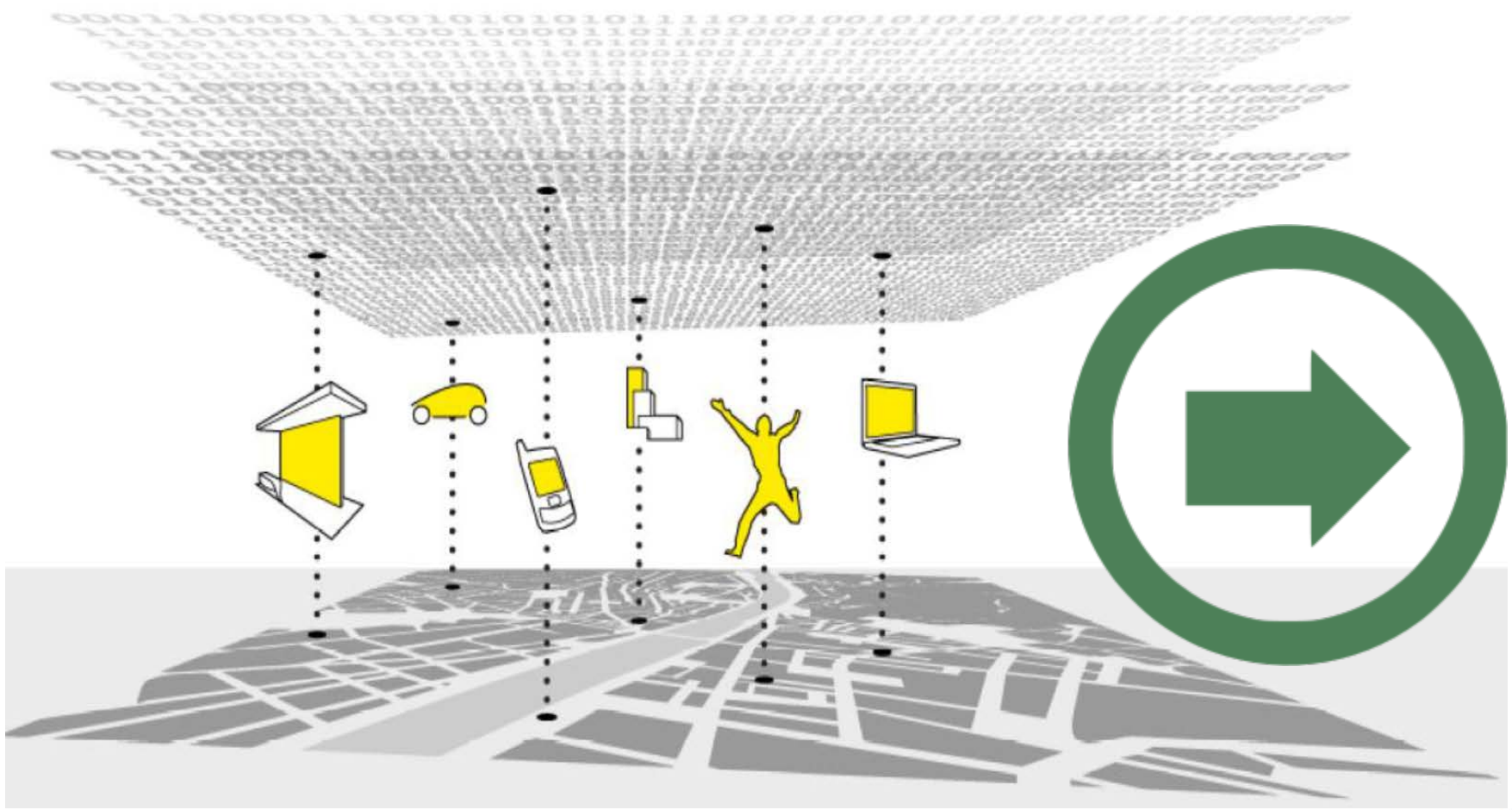
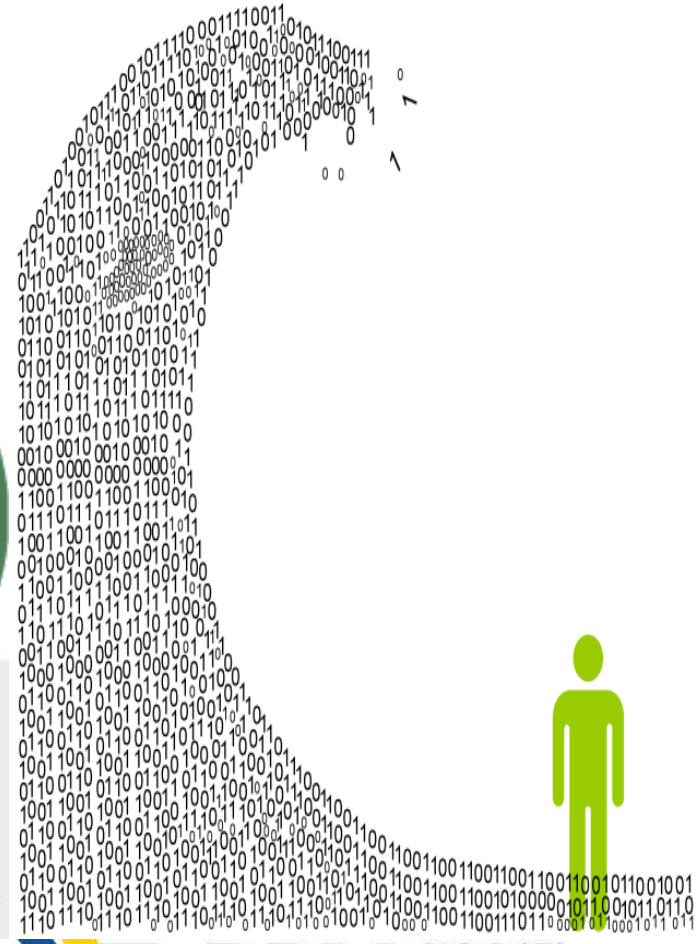
BDV PPP & BDVA

@BDVA_PPP #BigData

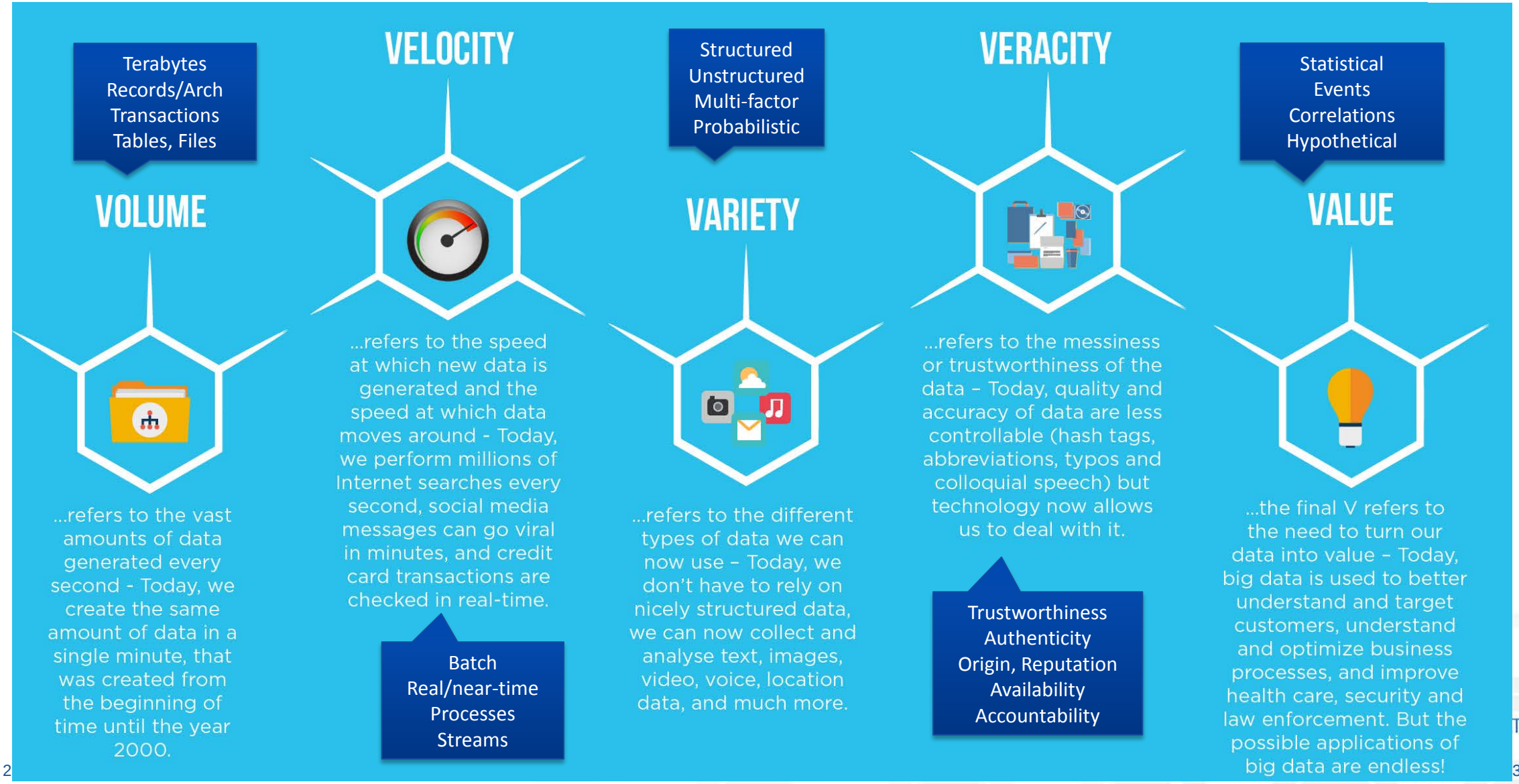
Jim Kenneally
Principal Investigator, Intel Corp
BDVA Interlock with ETP4HPC
jim.kenneally@intel.com

‘Datafication’ of our world… …generating a tidal flood of data





Datafication leads to Big Data!



WHAT IS THE BDV PPP

The EU and Industry launched the Contractural Public Private Partnership (cPPP) on Big Data Value in 2014-10

The Big Data Value Association represents 'Private' side

"In the Commission's view, strategic cooperation through a contractual Public-Private Partnership (cPPP) can play an **important role in developing a data community and encouraging exchange of best practices**. In line with the principles set out in H2020, the Commission considers that a sufficiently well-defined cPPP would be the most effective way to implement H2020 in this field,…"

Commission Communication "Towards a thriving data-driven economy" - 2 July 2014

"… EU action should provide the right framework conditions for a **single market for Big Data** …"

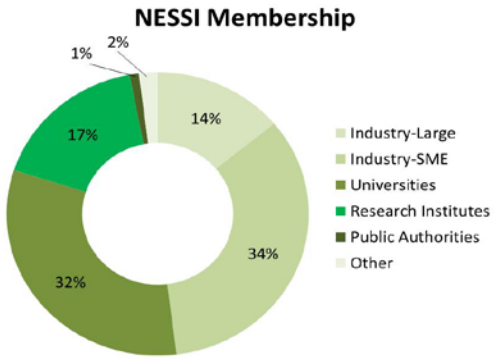
European Council Conclusion – 24/25 October 2013

"Big Data is possibly one of the few last chances for Europe's software industry to **take a true leadership**"

CEO Software AG, Karl-Heinz Streibich

BDV cPPP proposal stimulated by NESSI+

Stimulated by the NESSI ETP



> 450 members

…but NOT only NESSI

Non-NESSI Launch Partners include
Fraunhofer, INSIGHT and DFKI

Principles

- Openness
- Transparency
- Cooperation
- Inclusion
- Efficiency
- Neutrality
- Fair access
- Cross domain
- **Cross stakeholder**:
  - Industry – Large
  - Industry – SME
  - Research
  - User
  - Other

Investment

- “The European Commission and Europe's data industry have committed to invest **€2.5 billion** in a public-private partnership (PPP) that aims to strengthen the data sector and put Europe at the forefront of the global data race.”

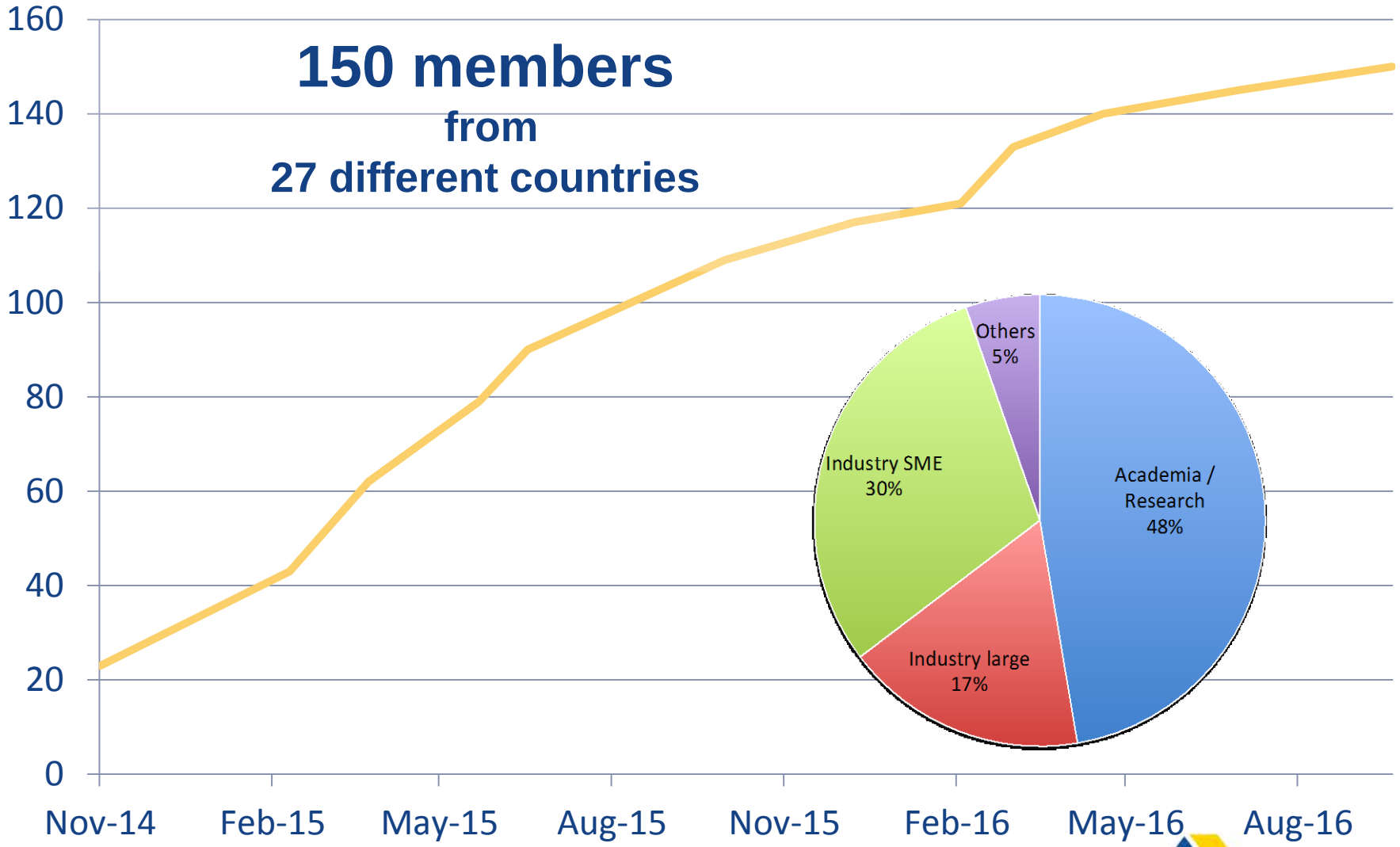
- “The EU has earmarked over €**500 million** of investment over 5 years (2016-2020) from Horizon 2020”

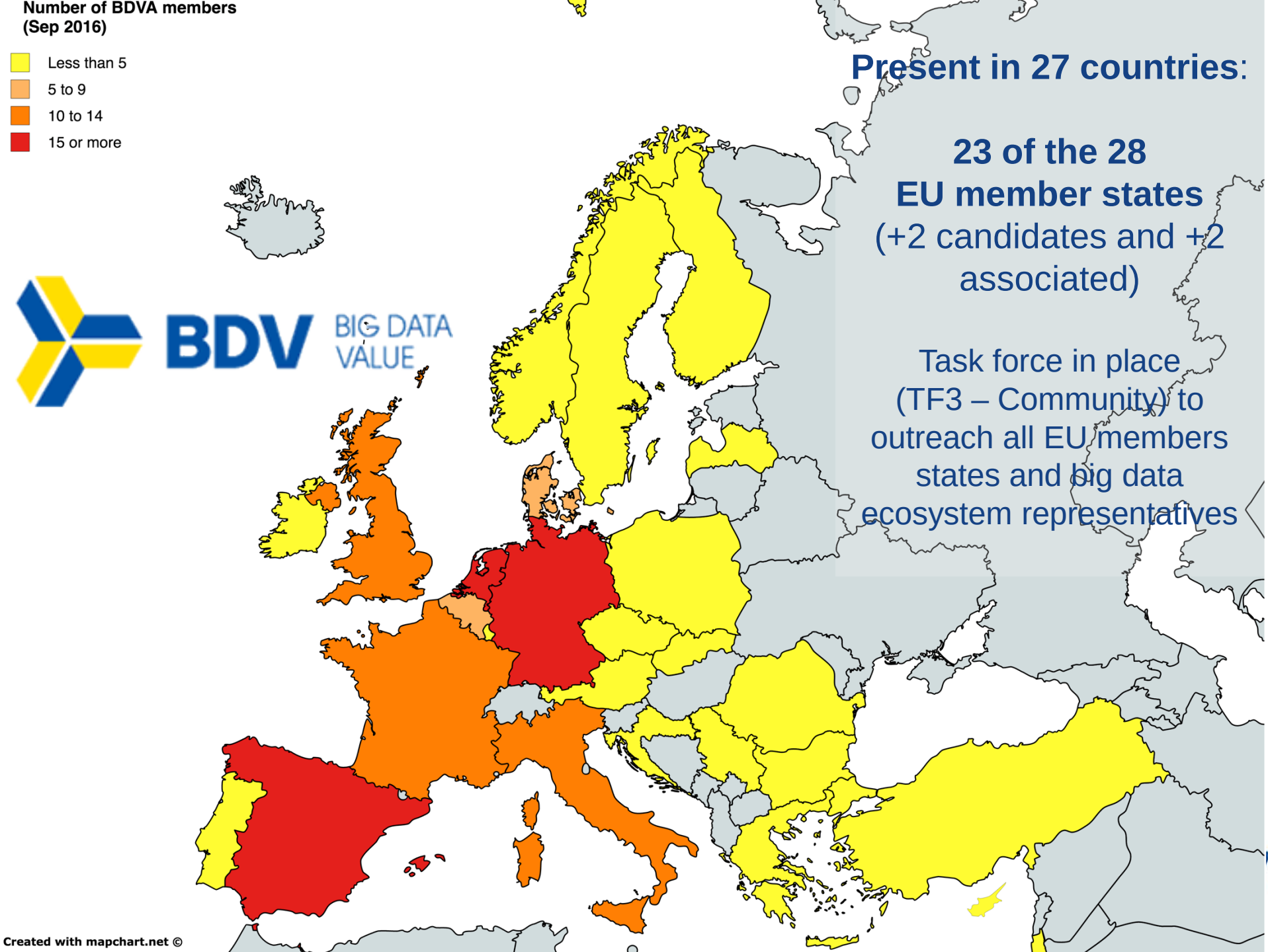
- Private partners are expected to leverage this through sector investments of four times the cPPP budget (ie €2 billion)

BDV PPP/A - Commitments

- **Leverage the cPPP** investments through sector investments of 4 times
- **Open, transparent and inclusive** definition
- **Update** Strategic Research & Innovation Agenda (SRIA);
- **Ensure 20% SME** participating organisations;
- Develop **skills and competences** in Big Data Value
- **Governance model, which supports openness and efficiency**
- **Monitoring Impact**

BDVA: A growing and diverse community





BDV BIG DATA VALUE

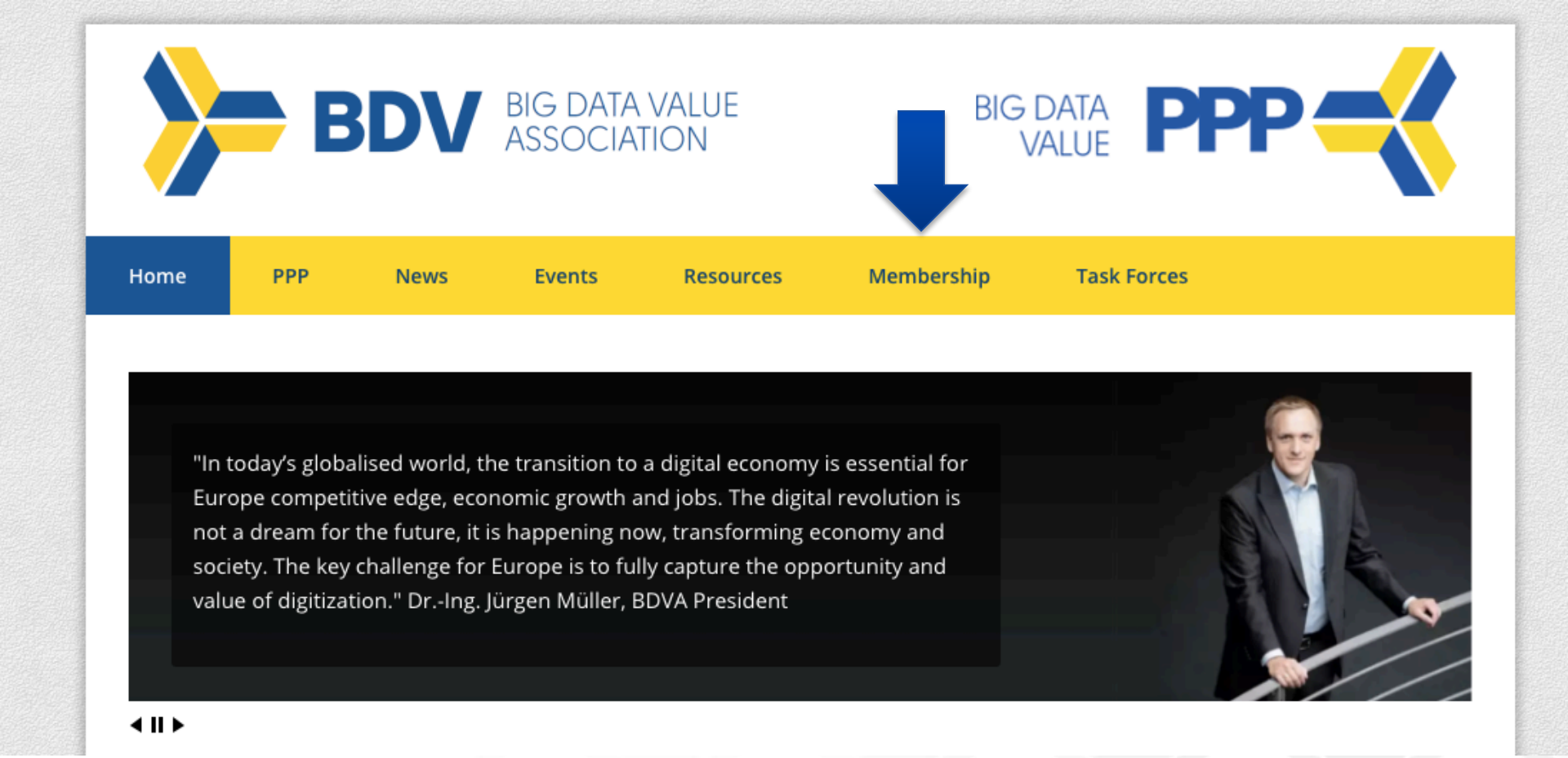
Present in 27 countries:

23 of the 28
EU member states
(+2 candidates and +2 associated)

Task force in place (TF3 – Community) to outreach all EU members states and big data ecosystem representatives

Who is behind BDVA?
Board members

How to get involved? www.bdva.eu

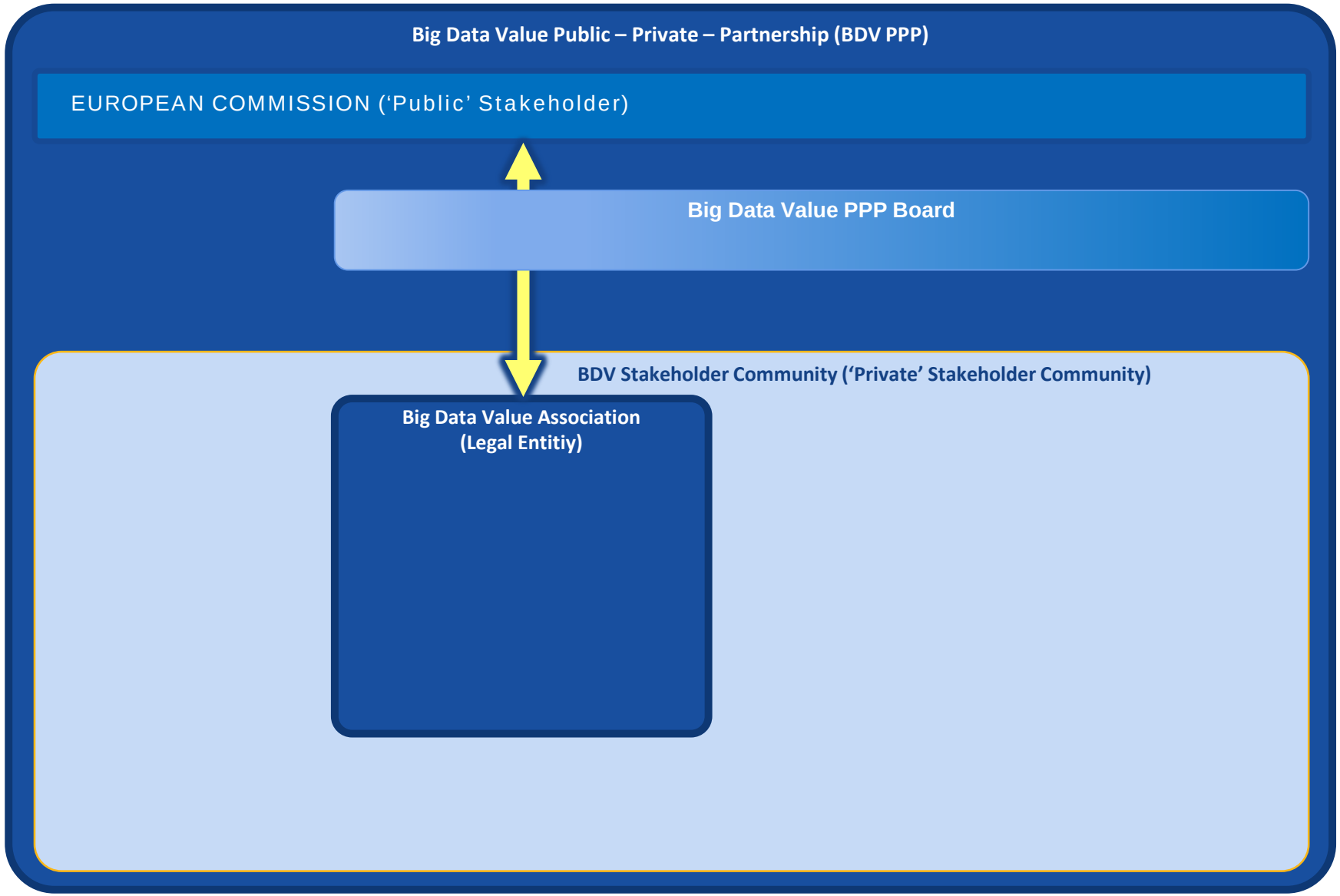


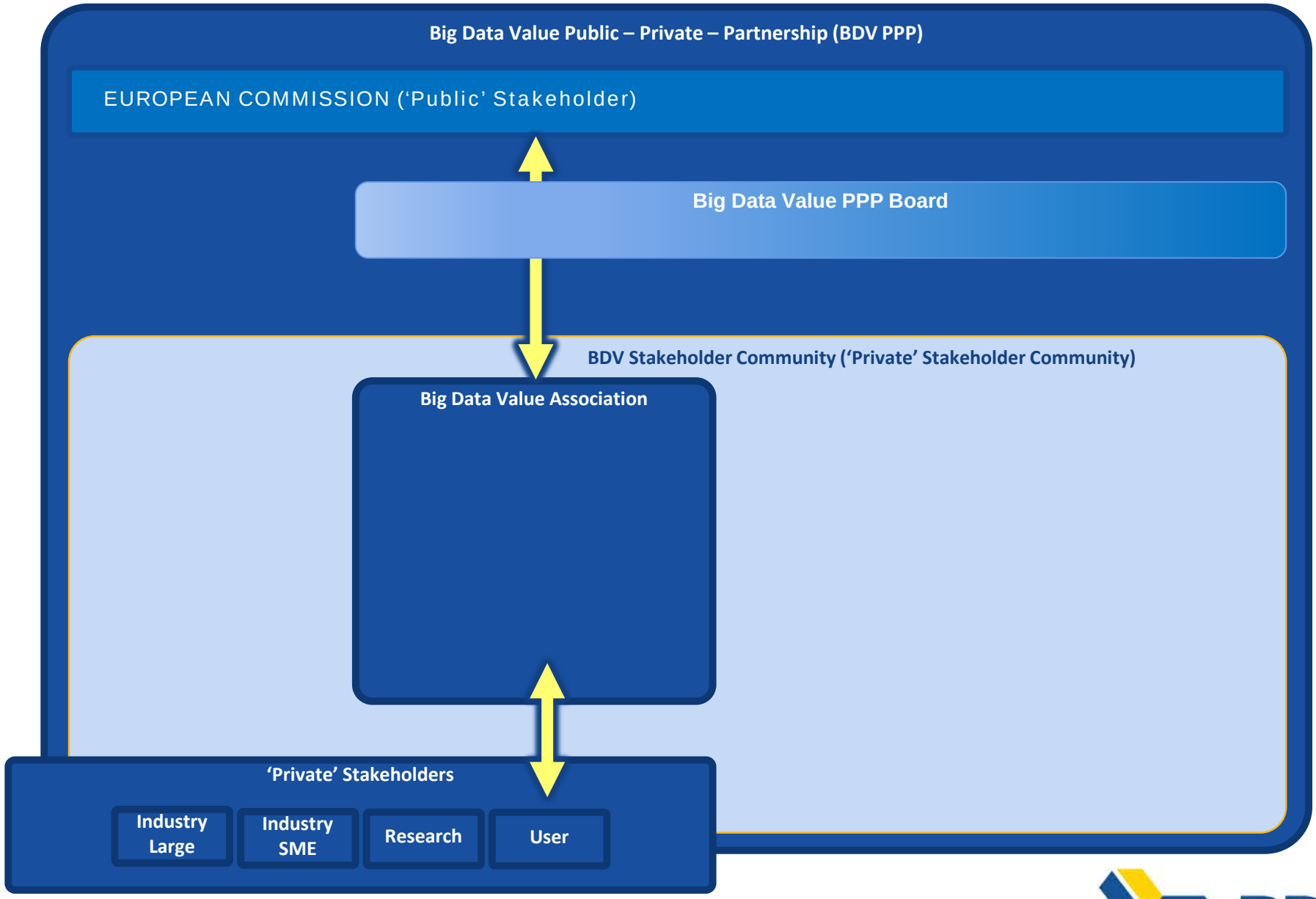
BDVA STRUCTURE

Indicative Timeline

- **2014 - October**
  Signing the Contractual Arrangement between European Commission and the Big Data Value Association
- **2015**
  Refinement of the Big Data Value Strategic Research and Innovation Agenda

  Continuing stakeholder community building
- **End 2016 – Jan 2017**
  Start of first Big Data Value PPP projects within H2020
- **2021**
  PPP projects ending


Big Data Value Public – Private – Partnership (BDV PPP)
EUROPEAN COMMISSION ('Public' Stakeholder)
Big Data Value PPP Board
BDV Stakeholder Community ('Private' Stakeholder Community)
Big Data Value Association
(Legal Entitiy)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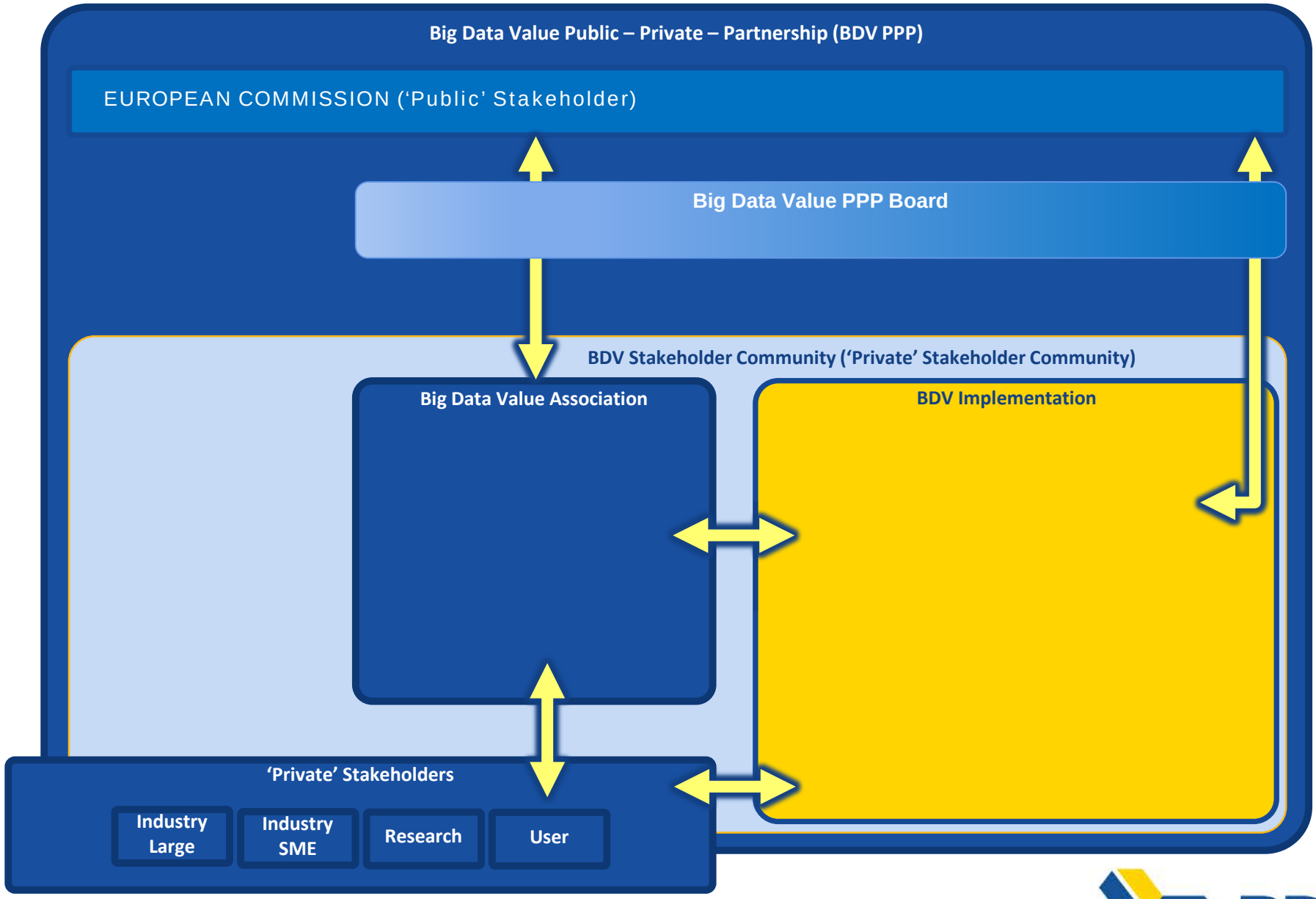
'Private' Stakeholders
Industry Large
Industry SME
Research
User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Industry Large
Industry SME
Research
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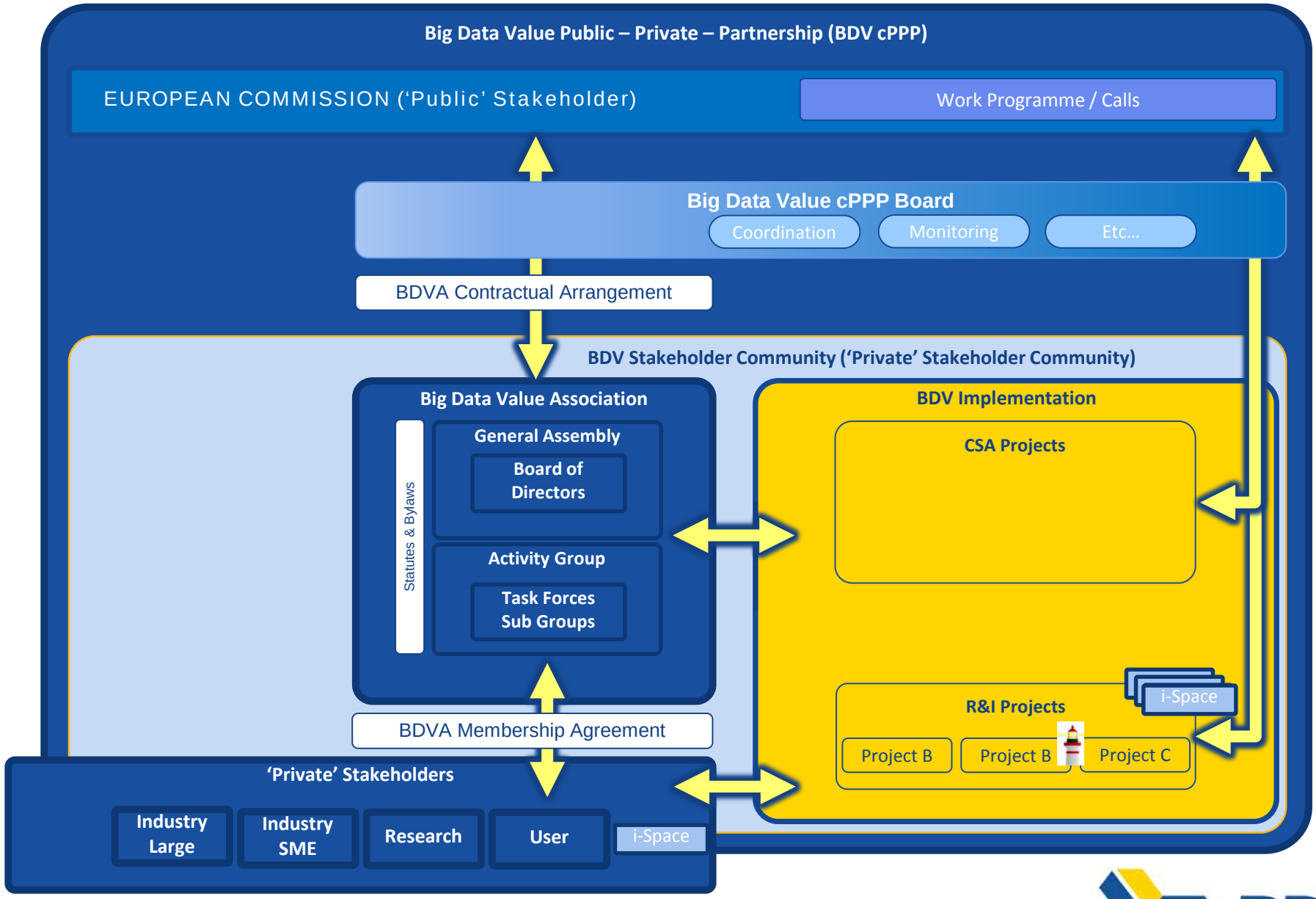

Big Data Value Public – Private – Partnership (BDV cPPP)
EUROPEAN COMMISSION ('Public' Stakeholder)
Work Programme / Calls
Big Data Value cPPP Board
Coordination
Monitoring
Etc…
BDVA Contractual Arrangement
BDV Stakeholder Community ('Private' Stakeholder Community)
Big Data Value Association
General Assembly
Board of Directors
Activity Group
Task Forces Sub Groups
Statutes & Bylaws
BDV Implementation
CSA Projects
R&I Projects
i-Space
Project B
Project B
Project C
BDVA Membership Agreement
'Private' Stakeholders
Industry Large
Industry SME
Research
User
i-Space

Lighthouse projects – a mechanism for large-scale demos and awareness

Lighthouse Projects

- The major mechanism for Europe to demonstrate Big Data Value ecosystems and sustainable data marketplaces
- Running data-driven large scale demonstrations
- Propose replicable solutions by using existing technologies or very near to market technologies that could be integrated in an innovative way and show evidence of data value
- Create high level impact and broadcast visibility and awareness driving towards faster uptake of Big Data Value applications and solutions

H2020 – Big Data PPP Calls

2017 Call - Apr	2017 Call - Apr	2017 Call - Apr	2017 Call - Apr	2017 – no Call
2016 Call Deadline - April		**2016 – no Call**	**2016 Call Deadline - April**	
ICT-14: Big Data PPP: #A Cross-sectorial and cross-lingual **data integration** (e.g. simplify data analytics across discrete datasets) and #B Data **experimentation incubators** (also know as "Innovation Spaces", e.g. computational environments to support experimentation with private and open datasets) Type of Action: Innovation Action, Total 2016 Budget for #A & #B: 27MLL (cap on budget for #B proposal: 7MLL) **Call URL**	**ICT-15**: Big Data PPP: **Large Scale Pilot** actions in sectors best benefitting from data-driven innovation (also known as "Lighthouse Projects") Type of Action: Innovation Action, Budget 2016: 25MLL (Max Budget for any one proposal in the range of 5-15MLL) **Call URL**	**ICT-16**: Big Data PPP: research addressing main technology challenges of the data economy (e.g. **novel architectures** addressing real time Big Data processing tasks, distributed data and process mining, Real-time complex event processing) Type of action: Research and Innovation action, Budget: not yet available **Call URL**	**ICT-17:** Big data PPP: Support, **industrial skills** (2016), **benchmarking and evaluation** (2017) Type of Action: Coordination and support action, Budget 2016: 5MLL **Call URL**	**ICT-18:** Big data PPP: **Privacy-preserving** big data technologies Type of action: Research and Innovation action, Budget: 8ML Type of action: Coordination and support action, Budget: 1MLL Research and Innovation action: 8MLL **Call URL**

Big Data Value PPP is a formal agreement between the European Commission and European industry (large players and SMEs), researchers and academia to concentrate Horizon 2020 support on common big data research priorities. The private side of the PPP is executed through the Big Data Value Association, a non-profit, industry-led organisation. The Commission will respond to the main research challenges and needs identified by BDVA in their Strategic Research and Innovation Agenda (SRIA) in future Horizon 2020 work programmes and calls for proposals.

BDVA activities: Task Forces and Subgroups

TF0: GA and BOD
TF1: Programme
TF2: Impact
TF3: Community
TF4: Communication

TF5: Legal &Policy
TF6: Technical*
TF7: Application*
TF8: Business*
TF9: Social (Societal)*
TF10: Skills and Education*

Big Data Value SRIA

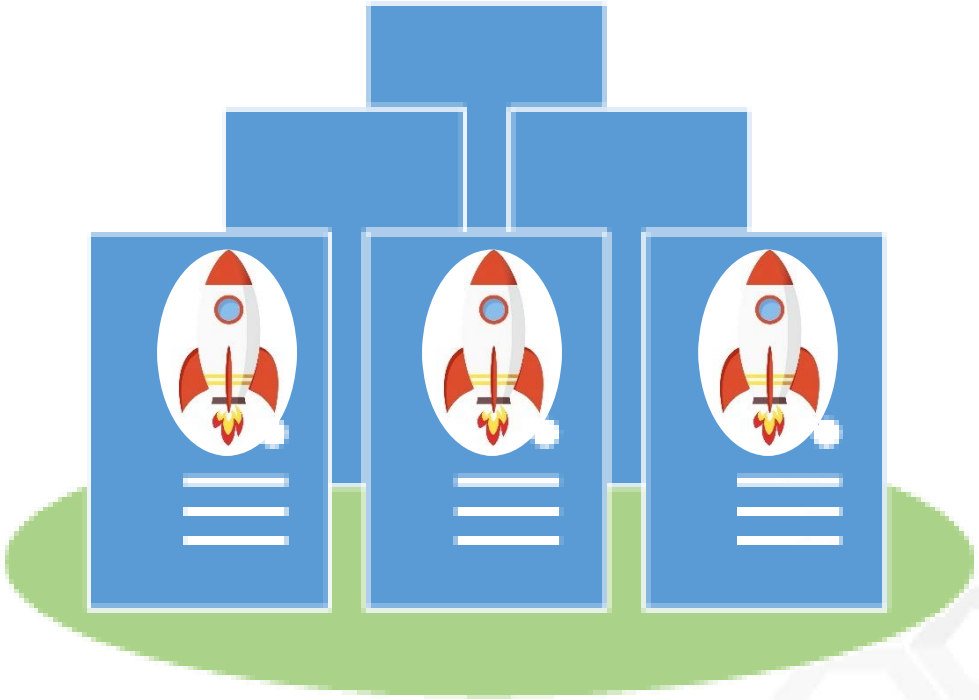
TF6 - Technical

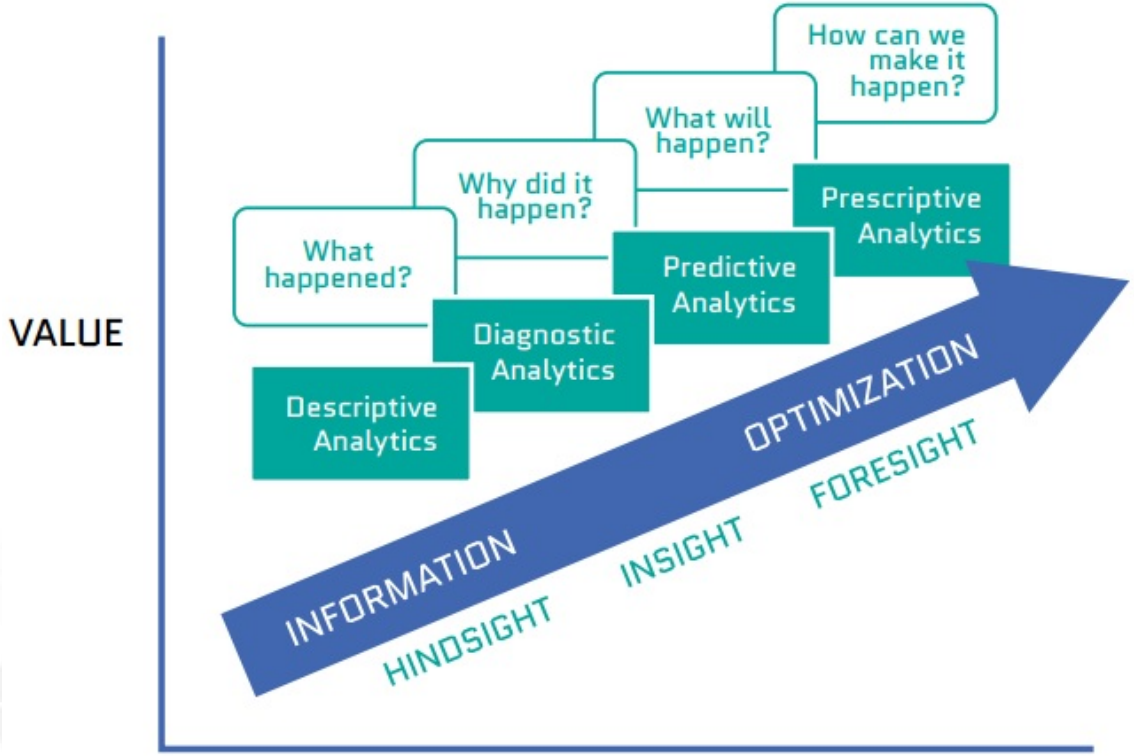
TF6 - Technical		SINTEF	Arne.J.Berre@sintef.no
	TF6-SG1: Data Management	SINTEF/Roman and Adaptant/Mundt & Nissatech/Stojanovic	dumitru.roman@sintef.no
	TF6-SG2: Data Processing Architectures	Insight/Curry	edward.curry@insight-centre.org
	TF6-SG3: Data Analytics	DTU/Ersbøll	bker@dtu.dk
	TF6-SG4: Data Protection and Pseudonymisation Mechanisms	IBM/Gkoulalas-Divanis	arisdiva@ie.ibm.com
	TF6-SG5: Advanced Visualisation and User Experience	UPM/Iglesias	cif@gsi.dit.upm.es
	TF6-SG6: Standardisation	Huawei/Benjelloun	abdellatif.benjelloun@huawei.com

COMPUTE-INTENSIVE BIG DATA

Big Data

- Cannot be analyzed with traditional computing techniques i.e. capture, storage, retrieval, search, sharing, analytics, and visualization
- Requires processes (techniques, tools and architectures) that are faster and more scalable





Source: National Big Data Congres 2014

Big Data + HPC = High Performance Data Analytics (HPDA)

- To transition from **static search** to higher-value, **dynamic pattern discovery,** Big Data requires supercomputing-like capabilities provided by HPC combined with scheduling and optimization software that can manage numerous jobs over multiple environments simultaneously

- Use cases can help inform research on future architectures e.g. data locality, bandwidth, throughput, improved core-to-core communication, reducing data movement at all levels (e.g. edge analytics, in-memory processing, accelerating data movement via more capable fabrics and interconnect networks, etc)

High complexity

Beyond query-driven searches to discover unknown patterns and relationships

High time criticality

Preprocessing, serial, parallel processing of data. Information that is not available quickly enough may be of little value.

High variability

Deep (large amounts of data) and "wide" (many variables)

HPC and Big Data, (IPCEI-HPC-BDA)

- develop a number of real-time integrative HPC applications towards a “Smart Nation” e.g. initiatives like FinTech, Smart Space, Smart Mobility, Smart Energy, Smart Building, Smart Water, Smart City, Smart Agriculture or Manufacturing 4.0.

- Establish Large Scale Pan-European Pilots that accelerate the deployment of **high-performance computing by European industry and Big data enabled applications**.

- Luxembourg, France, Italy and Spain, in close consultation with other Member States, will provide an **HPC and Big Data Enabled Applications implementation roadmap** to the European Council and European Commission in **September 2016**

Considerations for Widespread HPDA Adoption

- Compute centric <<HPDA>> Data Centric
- Reliable and resilient + absorb temporary increases in demand without failure or changes in architecture.
- Open architecture to encourage interoperability, flexibility and open innovation
- Built with increasingly standardised and affordable technologies, deliverable via preassembled and pretested clusters

THANK YOU

Further Information:

BDVA: http://www.bdva.eu/
info@core.bdva.eu
@BDVA_PPP #Bigdata

NESSI: http://www.nessi-europe.eu