

IESE- VII CONFERENCE ON ARTIFICIAL INTELLIGENCE IN FINANCE

THE TRANSFORMATIONAL IMPACT OF AI FOR THE FINANCIAL SECTOR AND CENTRAL BANKS

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THE TRANSFORMATIONAL IMPACT OF AI FOR THE FINANCIAL SECTOR AND CENTRAL BANKS



01.

AI is a general-purpose technology, and a paradigm shift that will enhance existing technological advancements such as the Internet, big data, 5G and blockchain.



02.

AI is gaining momentum and could have a broad and positive transformational impact on the economy and society.



03.

The financial sector is an early adopter of new technologies and could be among the first to benefit from the new capabilities offered by AI.



04.

For central banks, AI is likewise transformational, allowing them to address a growing number of complex and novel issues, drive productivity and contain costs.



05.




AI will impact all central banking activities and poses several challenges.

CENTRAL BANKING WILL BE AFFECTED BY THE DIGITAL TRANSFORMATION


MORE RISK-FOCUSED

MORE OPPORTUNITY-FOCUSED


Financial stability

-  **Transitional risks:** early investment in inferior technology and late investment, leading to competitiveness loss
-  Increased **interdependencies** between financial intermediaries, market infrastructure and technology suppliers
Greater focus on third-party providers
-  Herding behaviour

Microprudential supervision

 **Complexity of AI models:** greater focus on data and explainability

 Expand/leverage the use of **granular information and data sources**

 **Impact of AI on fundamental rights**

- Bias and misuse of technology
- Data privacy concerns
- Financial inclusion


 **AI risk mitigation / incident reporting**

Conduct supervision


Payments and financial operations


 Innovation and oversight of payment systems and market infrastructures

Monetary policy

 Impact on monetary transmission: effectiveness of monetary policy decisions

 Changes in economies' potential GDP / employment

 GDP and inflation nowcasting

 Communication: text and sentiment analysis

+ IMPACT ON INTERNAL OPERATIONS AND PROCESSES

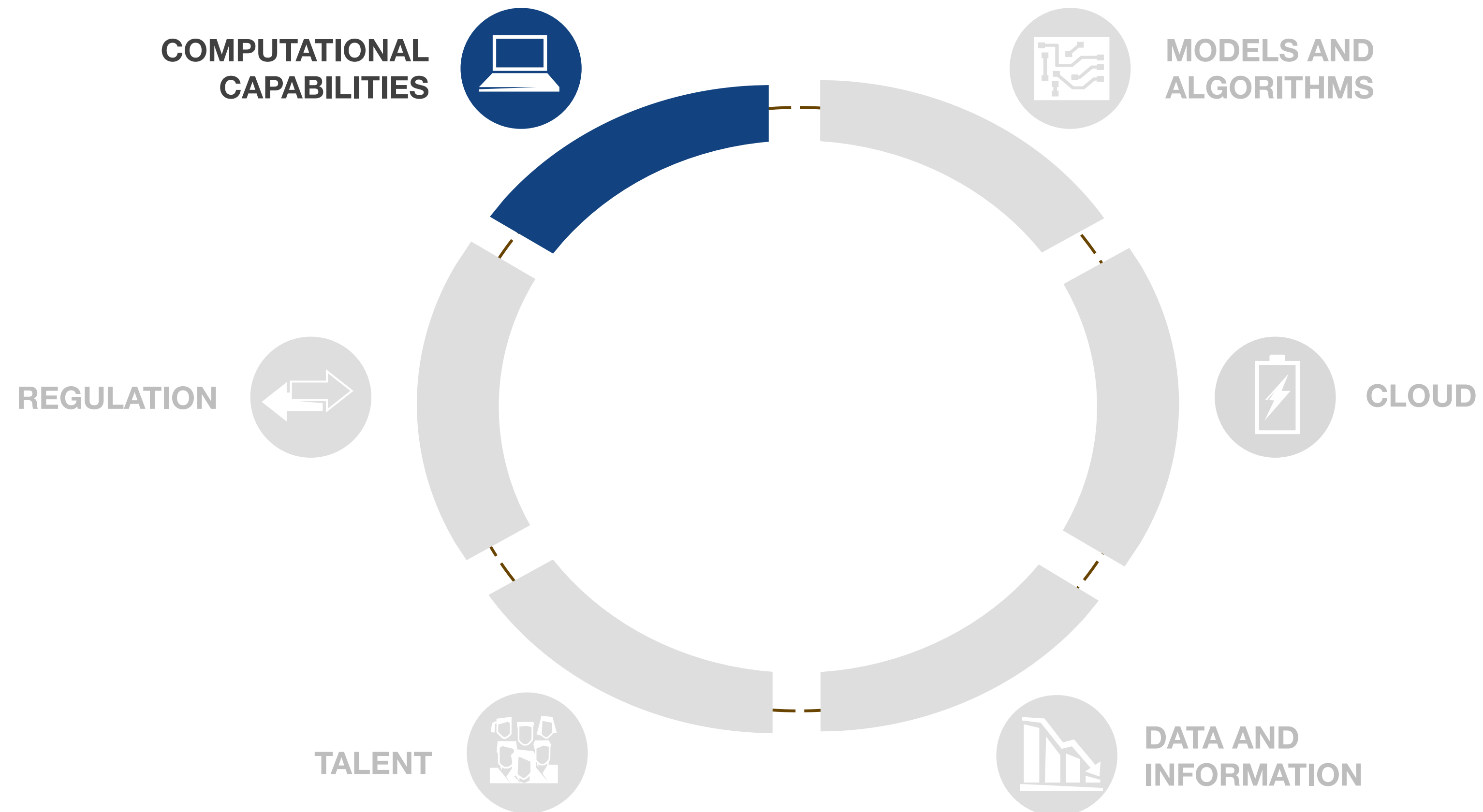
AI IN CENTRAL BANKING IS JUST GETTING STARTED. TO SCALE UP, CERTAIN CHALLENGES WILL HAVE TO BE OVERCOME

WHERE ARE WE NOW?

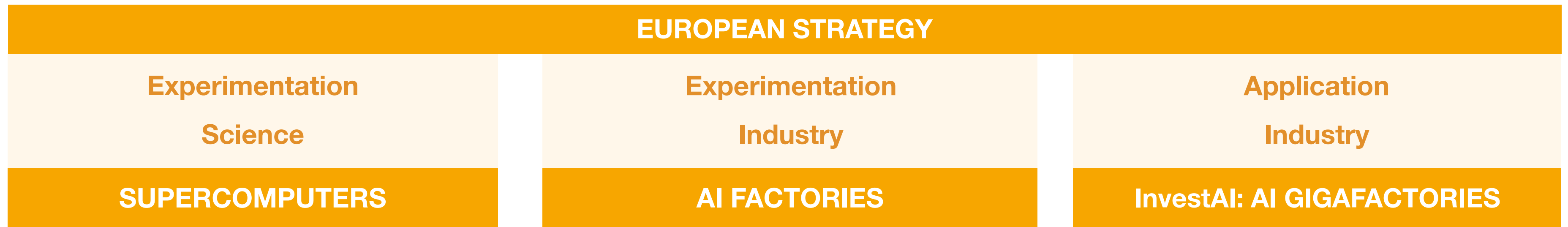
- All central banks are beginning to develop **use cases** and **governance models** for AI
- Some central banks are starting to set up digital **innovation centres with AI experimentation**
- Some central banks will have specific mandates regarding AI: in Europe, **market surveillance authorities for high-risk AI systems** developed for banks

WHAT IS NEEDED TO MOVE FORWARD?

KEY ELEMENTS TO MOVE FORWARD



1. COMPUTATIONAL CAPABILITIES: A COMPELLING NEED TO MOVE FROM EXPERIMENTATION TO APPLICATION

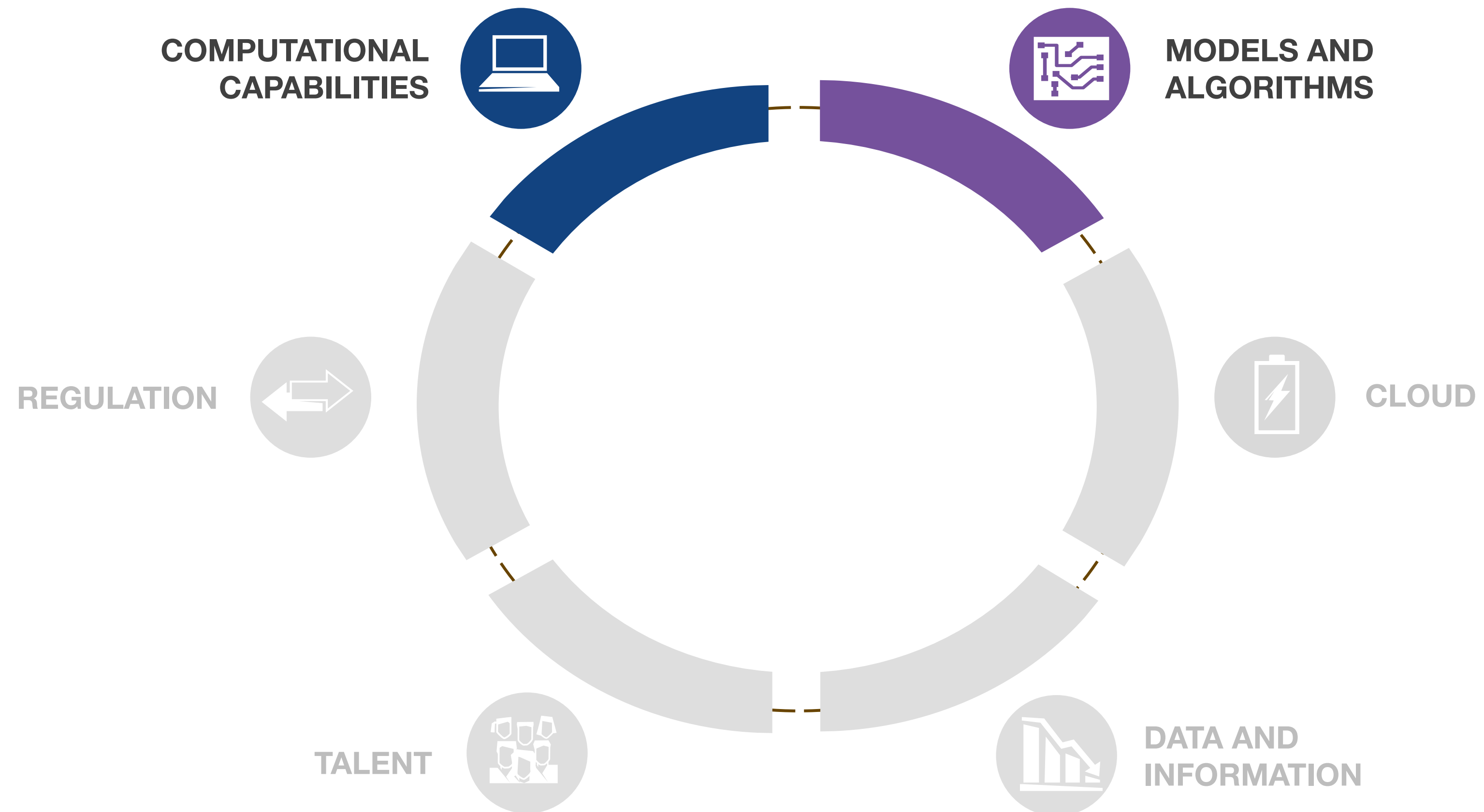


- Cooperation with AI factories and the private sector is crucial
- Finance will be one of the verticals for experimentation

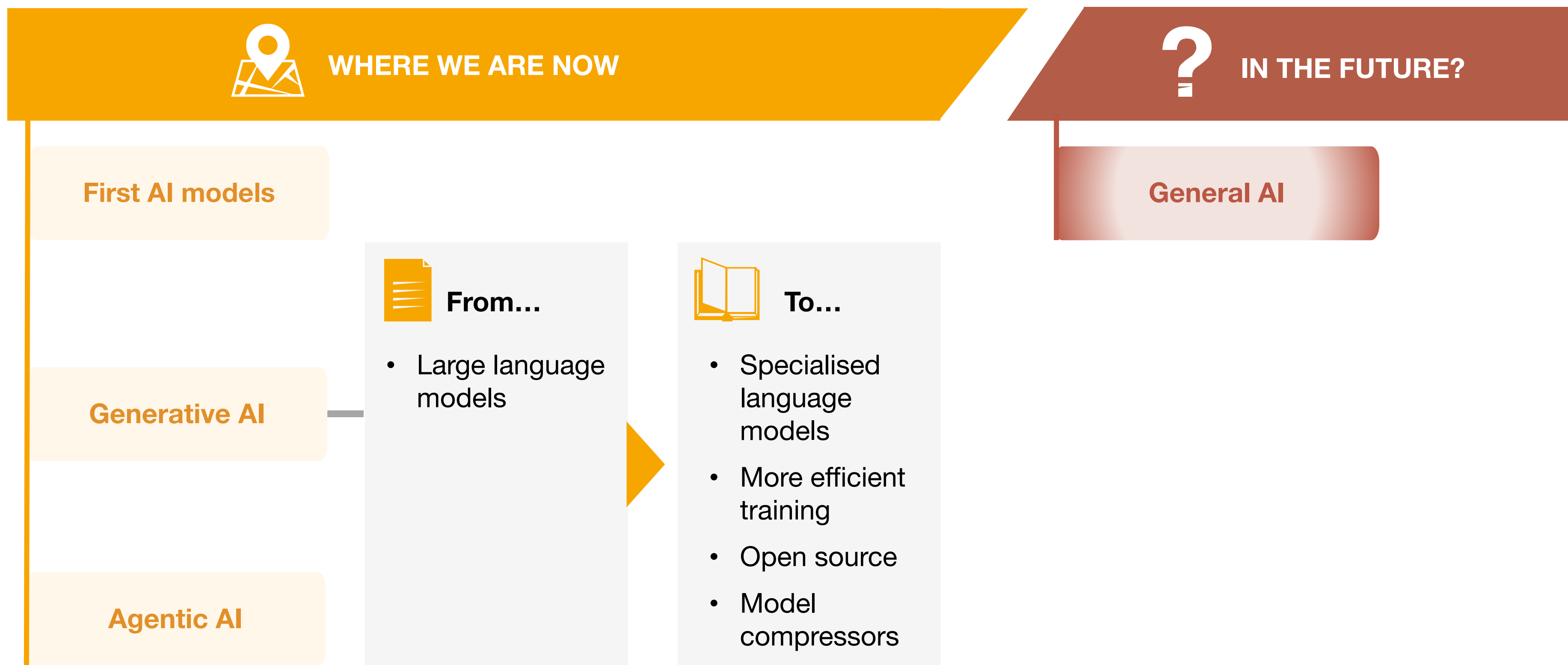


- New developments make progress less costly

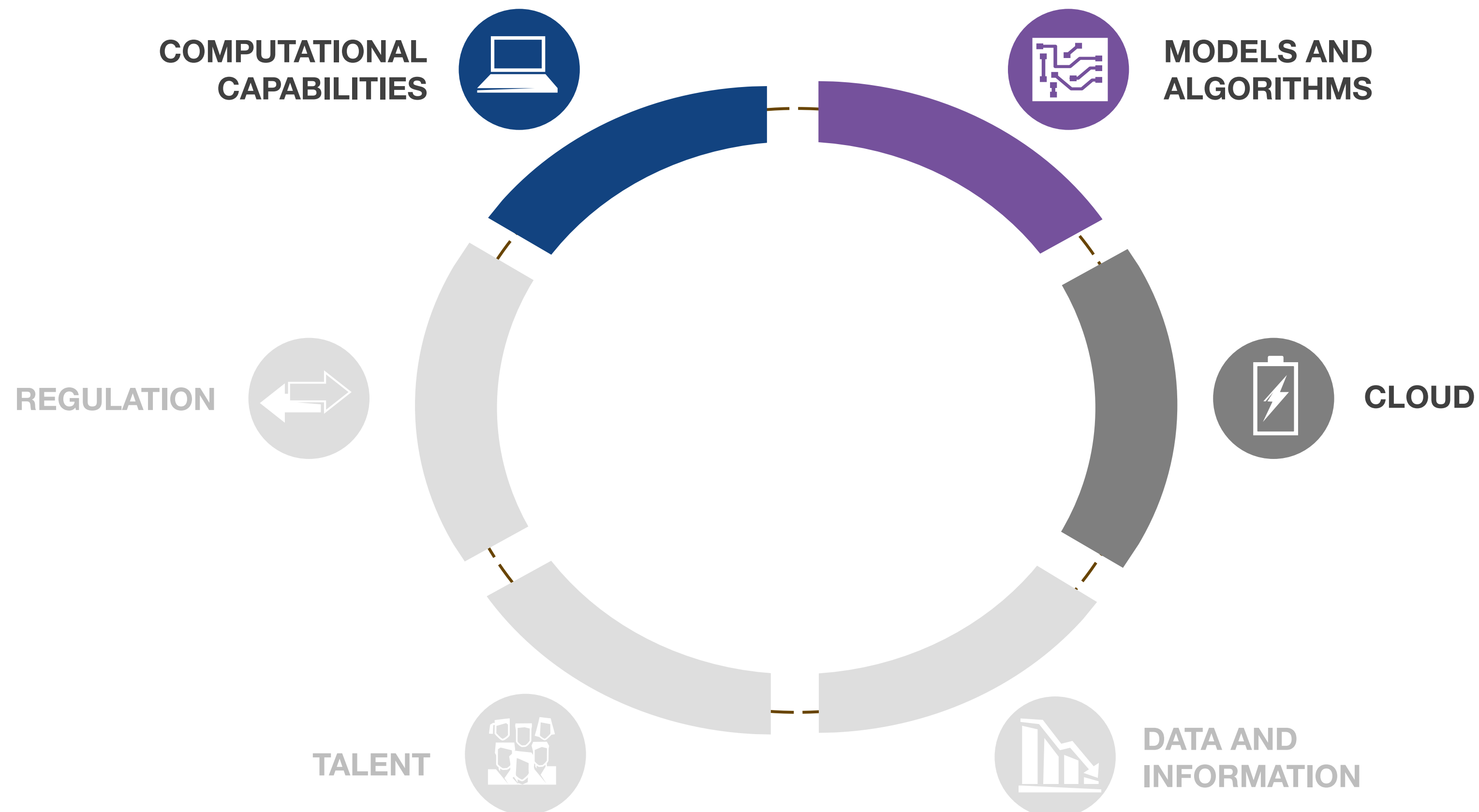
KEY ELEMENTS TO MOVE FORWARD



2. MODELS AND ALGORITHMS ARE EVOLVING VERY QUICKLY, DRIVING NEW CAPABILITIES AND EASING THE ADOPTION OF AI



KEY ELEMENTS TO MOVE FORWARD



3. CLOUD COMPUTING MUST STRIKE A BALANCE BETWEEN NEW CAPABILITIES AND CONFIDENTIALITY

Cloud computing moves in parallel with AI



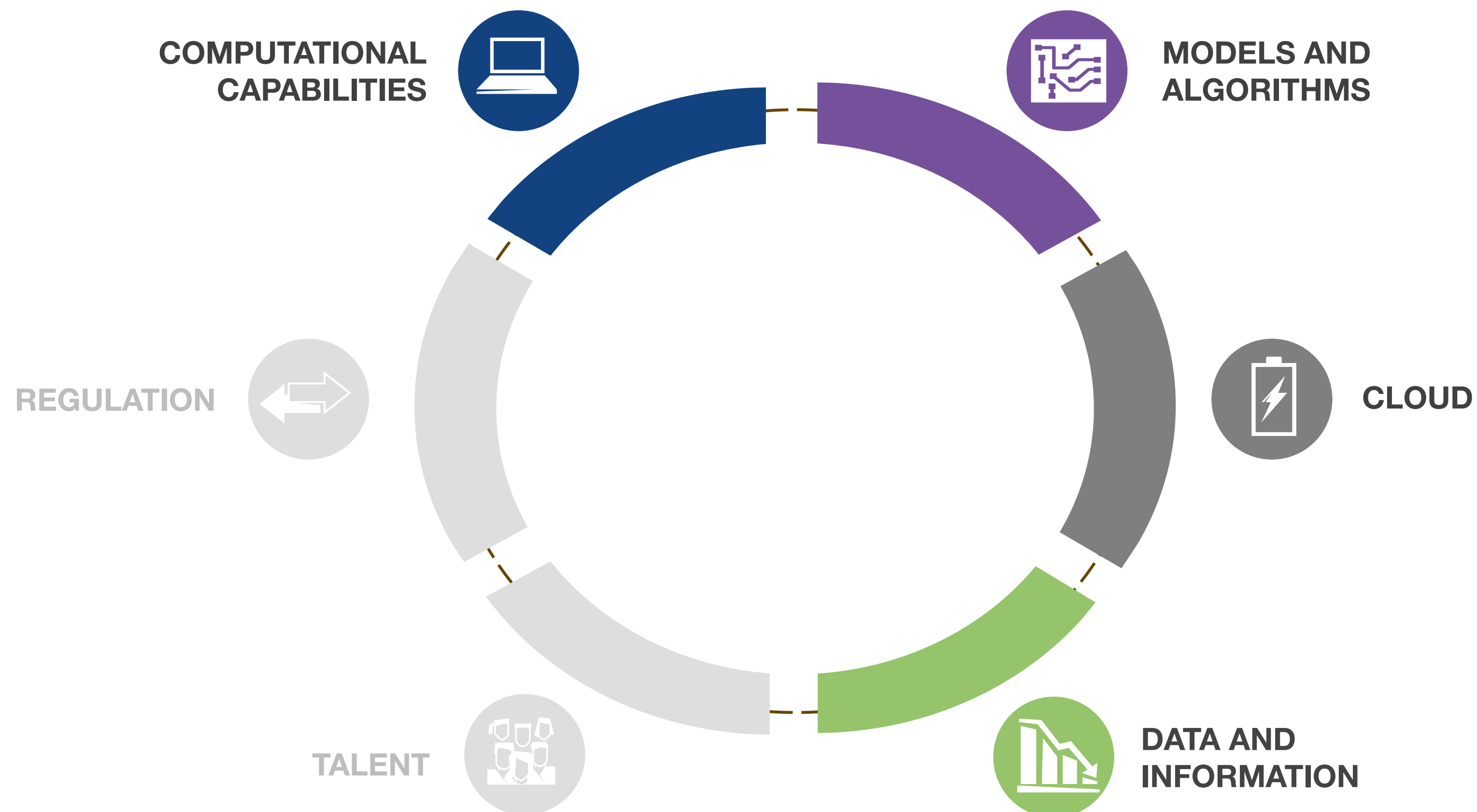
- Cloud computing expands analytical capabilities, but confidentiality is a critical issue
- Cybersecurity will help ensure cyber resilience, operational continuity and data privacy, but usability should also be maintained
- Technology increases dependency on third parties: vendor lock-in and supply chain vulnerabilities become an increasing problem that needs to be managed



The way ahead

- Rethink the cloud strategy: hybrid clouds?
- Strategic alliance with the private sector
- More room for sharing information and technology among central banks

KEY ELEMENTS TO MOVE FORWARD

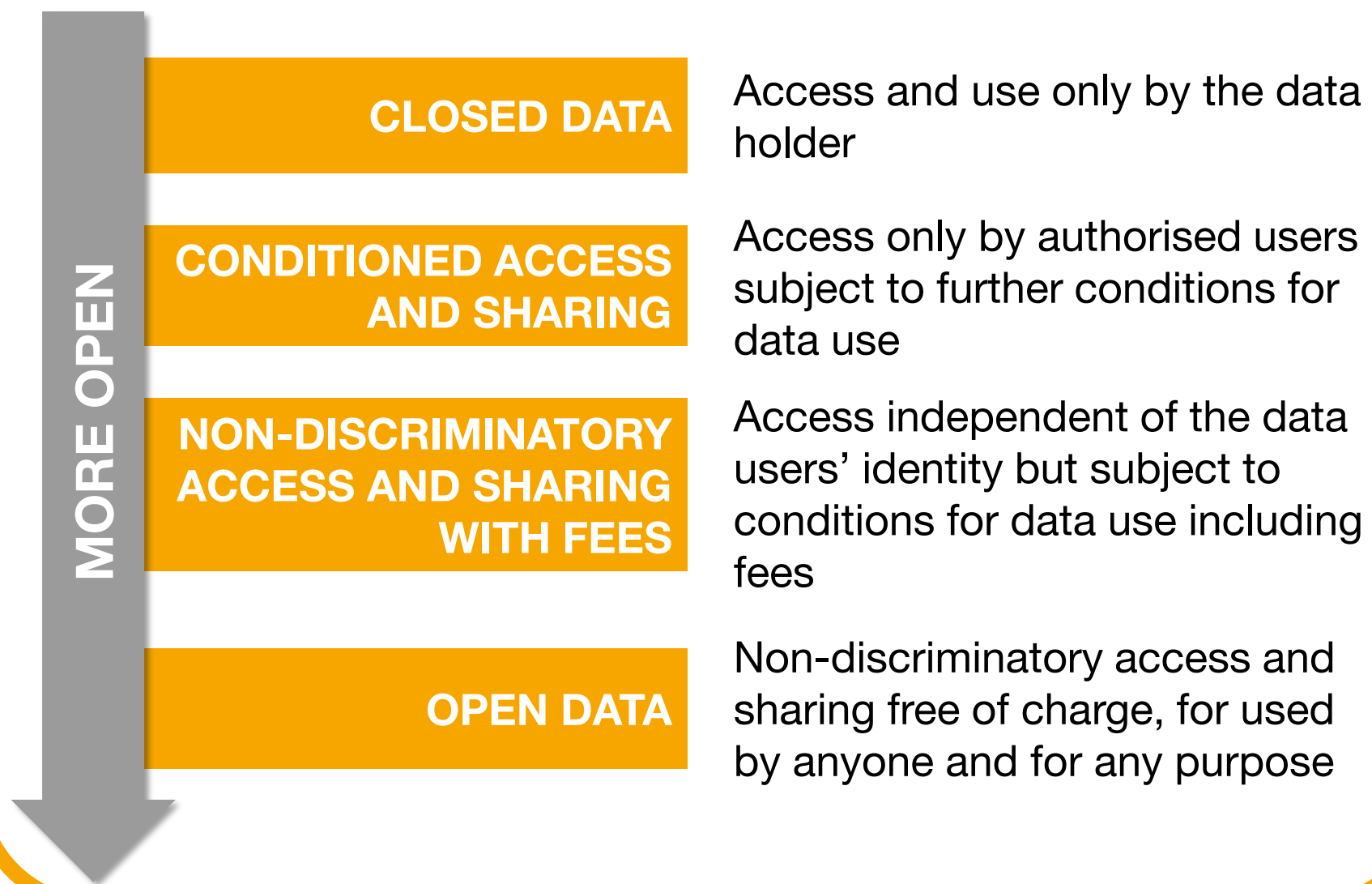


4. WHILE SAFEGUARDING CONFIDENTIALITY, MORE DATA SHARING IS NEEDED TO HARNESS THE BENEFITS OF AI



MORE OPEN DATA ARE NEEDED

To harness the benefits of AI, more high-quality OPEN data (structured and unstructured) are needed.



MAIN TOOLS FOR SHARING DATA

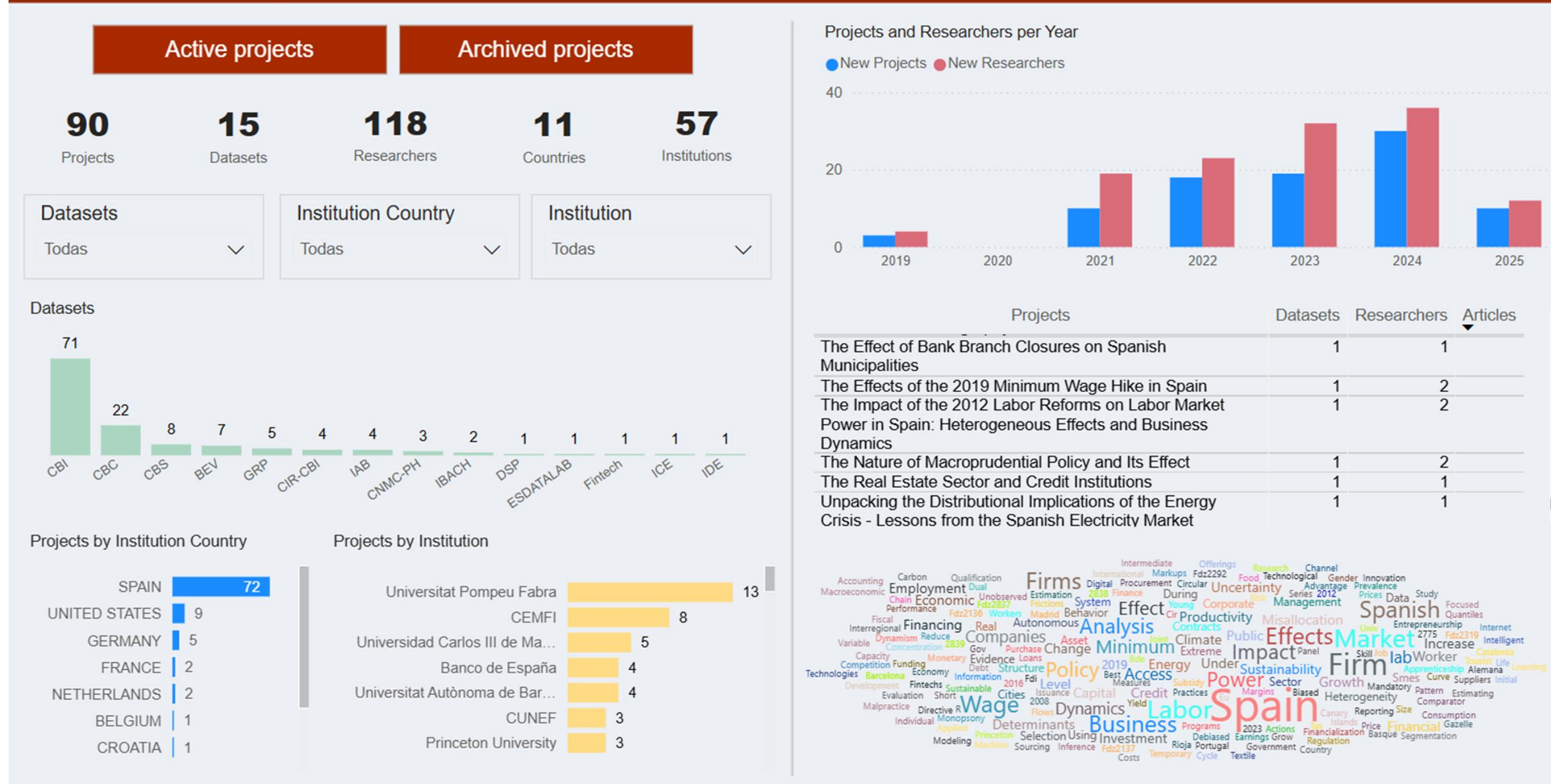
- Application programming interfaces (APIs)
- Trusted data intermediaries
- Datalabs and secure rooms



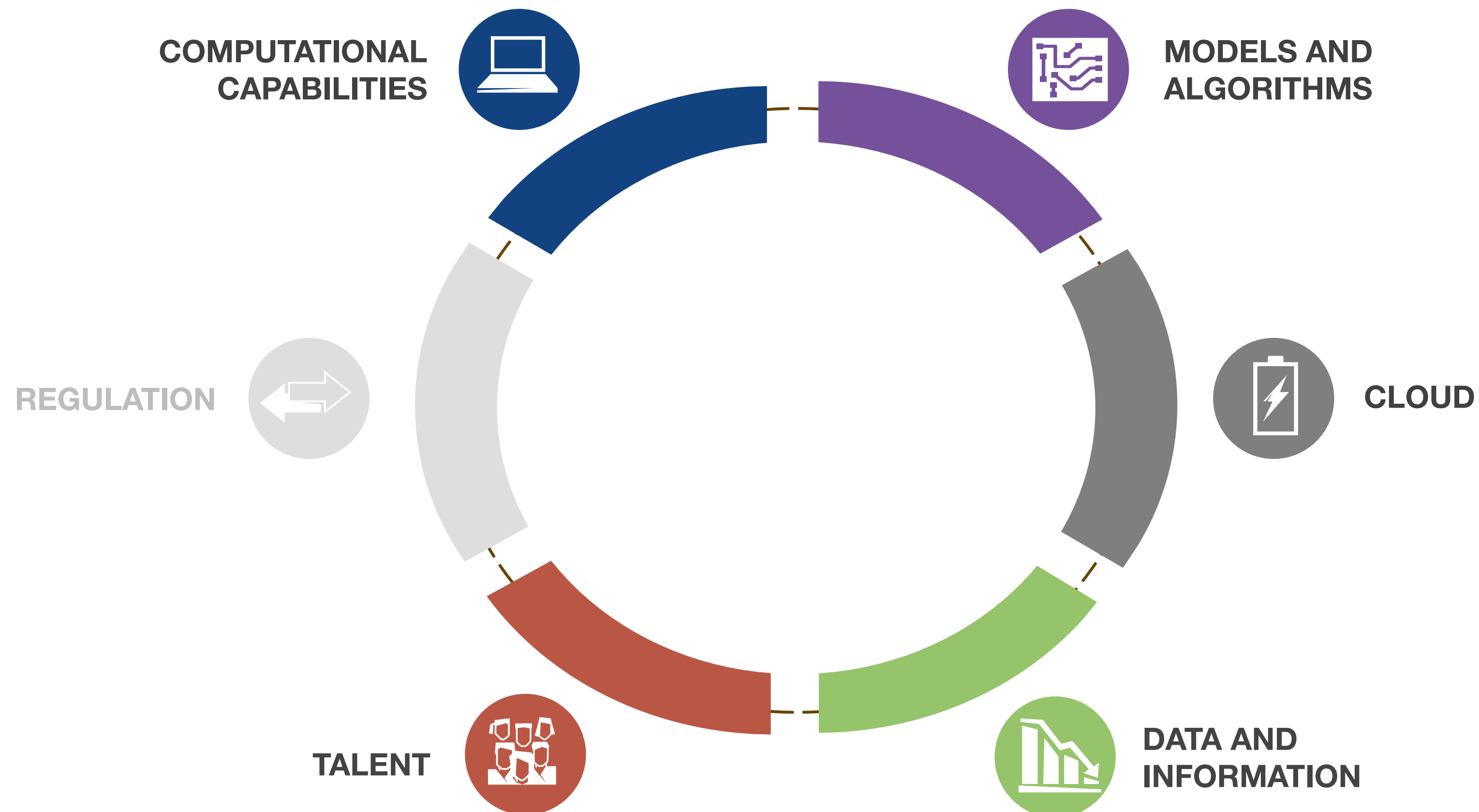
Source: OECD, 2025

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Summary of BELab Activity



KEY ELEMENTS TO MOVE FORWARD

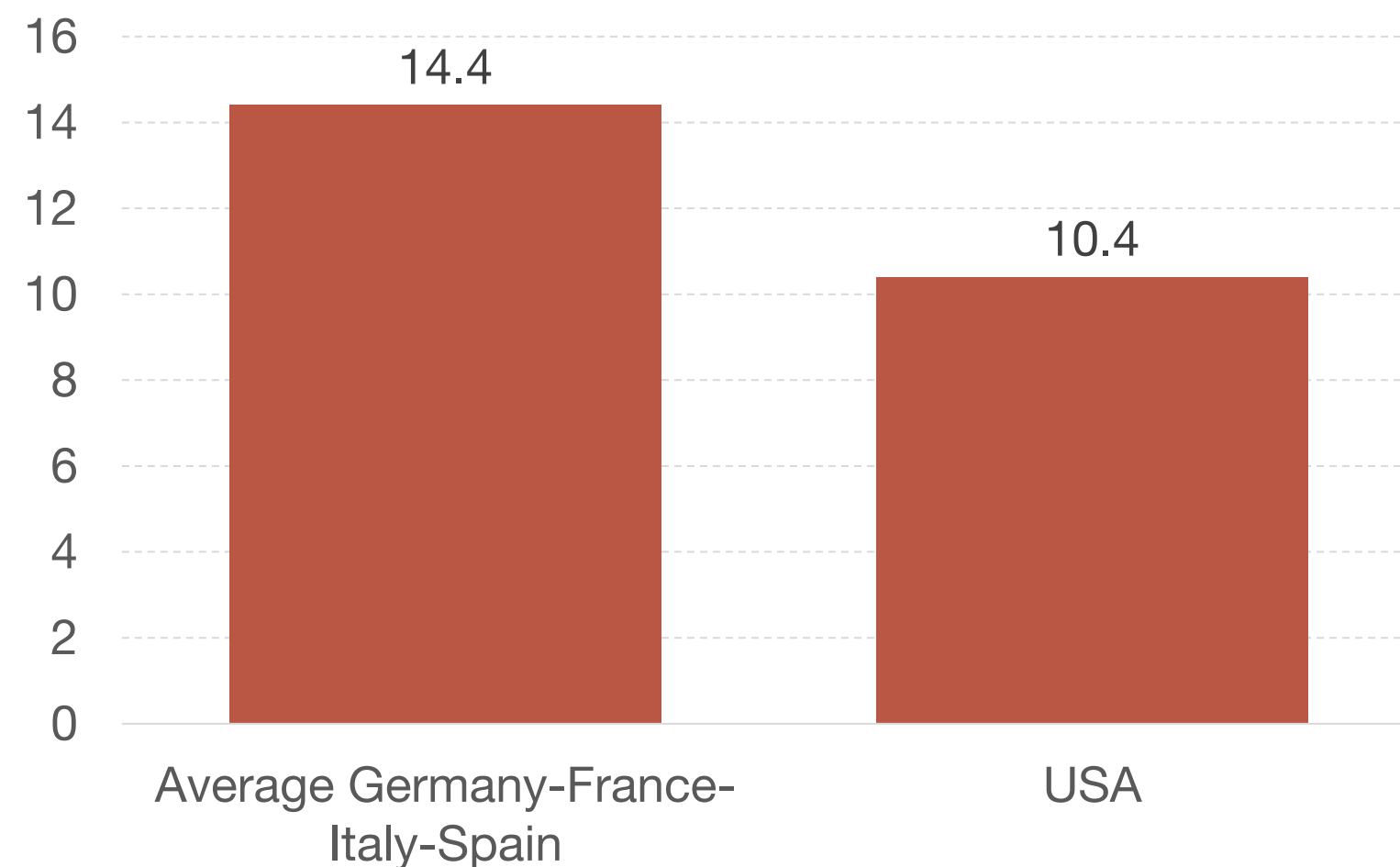


5. THE SCARCITY OF AI TALENT MAY HINDER CENTRAL BANKS' ABILITY TO ACHIEVE THEIR AI AMBITIONS

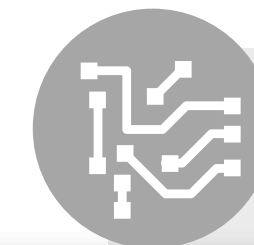


THE NUMBER OF STEM GRADUATES SHOULD INCREASE

INTERNAL RATE OF RETURN FOR STEM GRADUATES IN RELATION TO VOCATIONAL TRAINING. In percentage



Source: Banco de España, drawing on microdata from the Programme for the International Assessment of Adult Competencies (PIAAC 2011-2012 and PIAAC 2022-2023) and CBI-Insights.



TALENT IS THE MAIN BOTTLENECK FOR AI DEVELOPMENT

OBSTACLES TO AI ADOPTION FOR SPANISH BUSINESSES



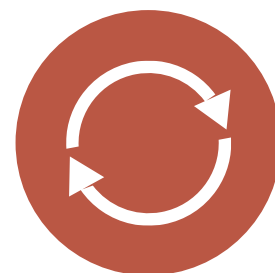
Source: Banco de España, EBAE (Business Activity Survey).

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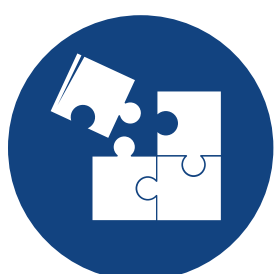
Medium-term workforce planning is crucial



Engaging projects to attract AI talent: leveraging high-quality central bank data and creating centres for AI experimentation and development



More flexible hiring arrangements: high turnover and rotation rates for AI specialists



Enhancing collaboration: pooling resources across several central banks

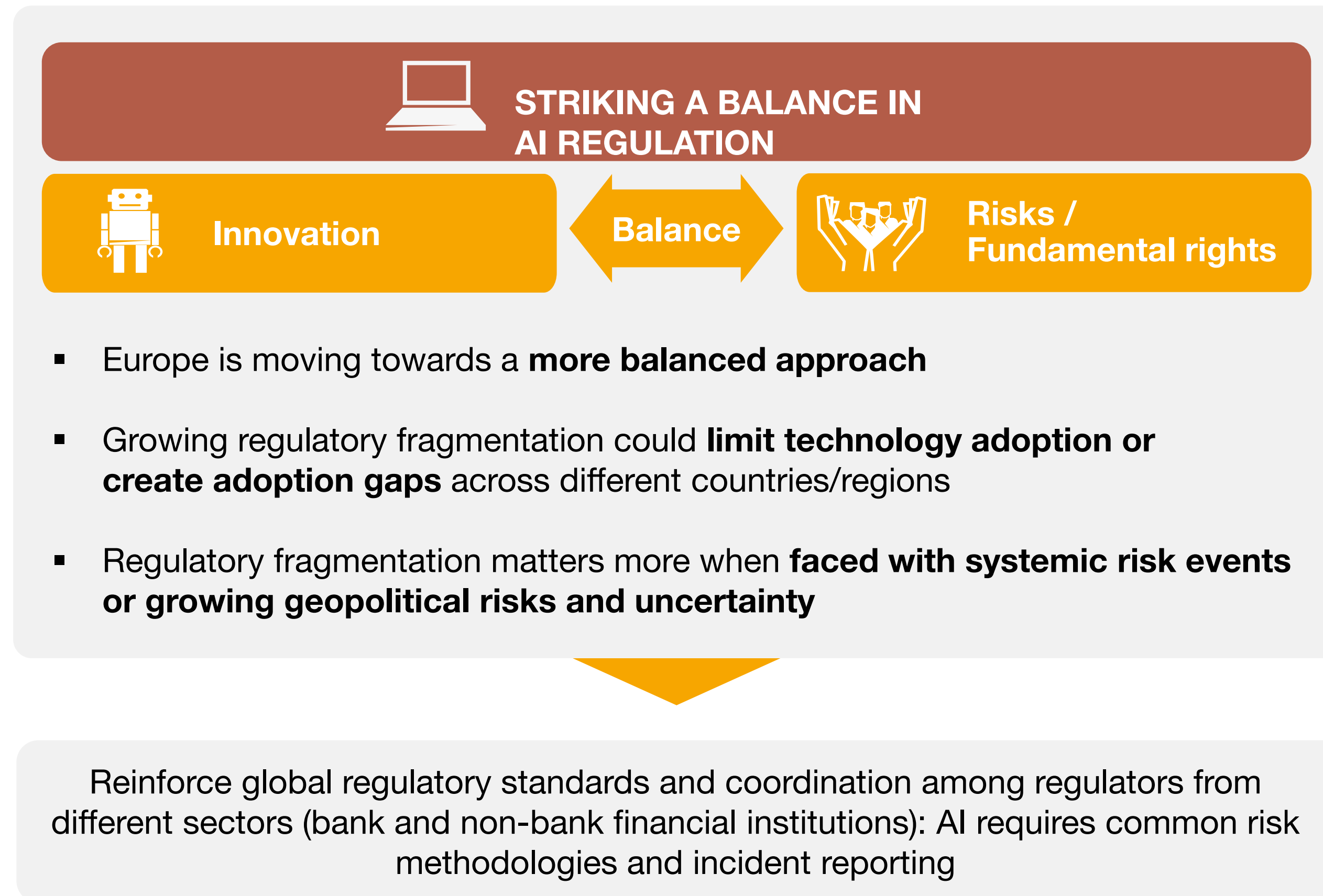


Programmes for upskilling and reskilling the existing workforce / special programmes for management / training on ethical and responsible use of AI

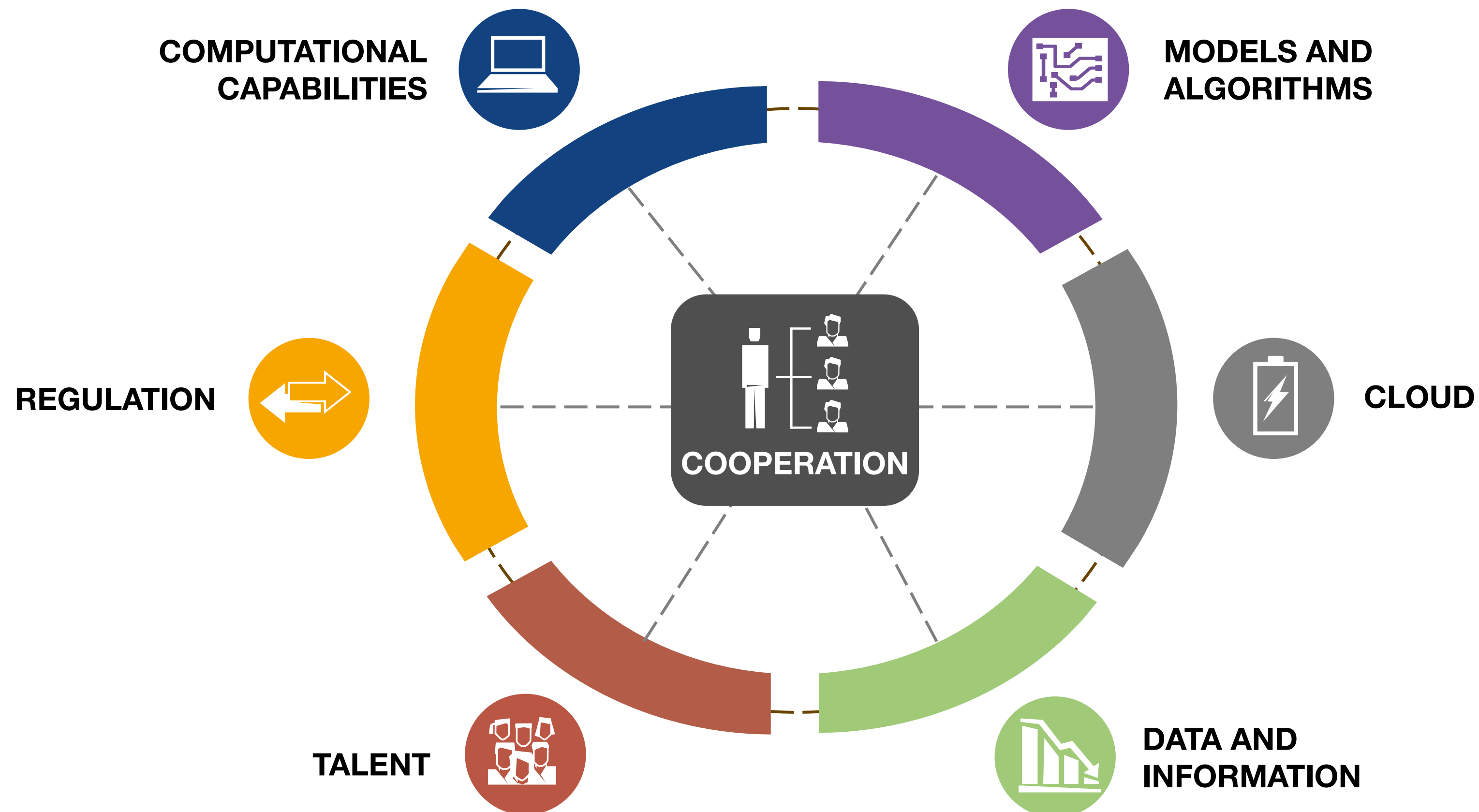
KEY ELEMENTS TO MOVE FORWARD



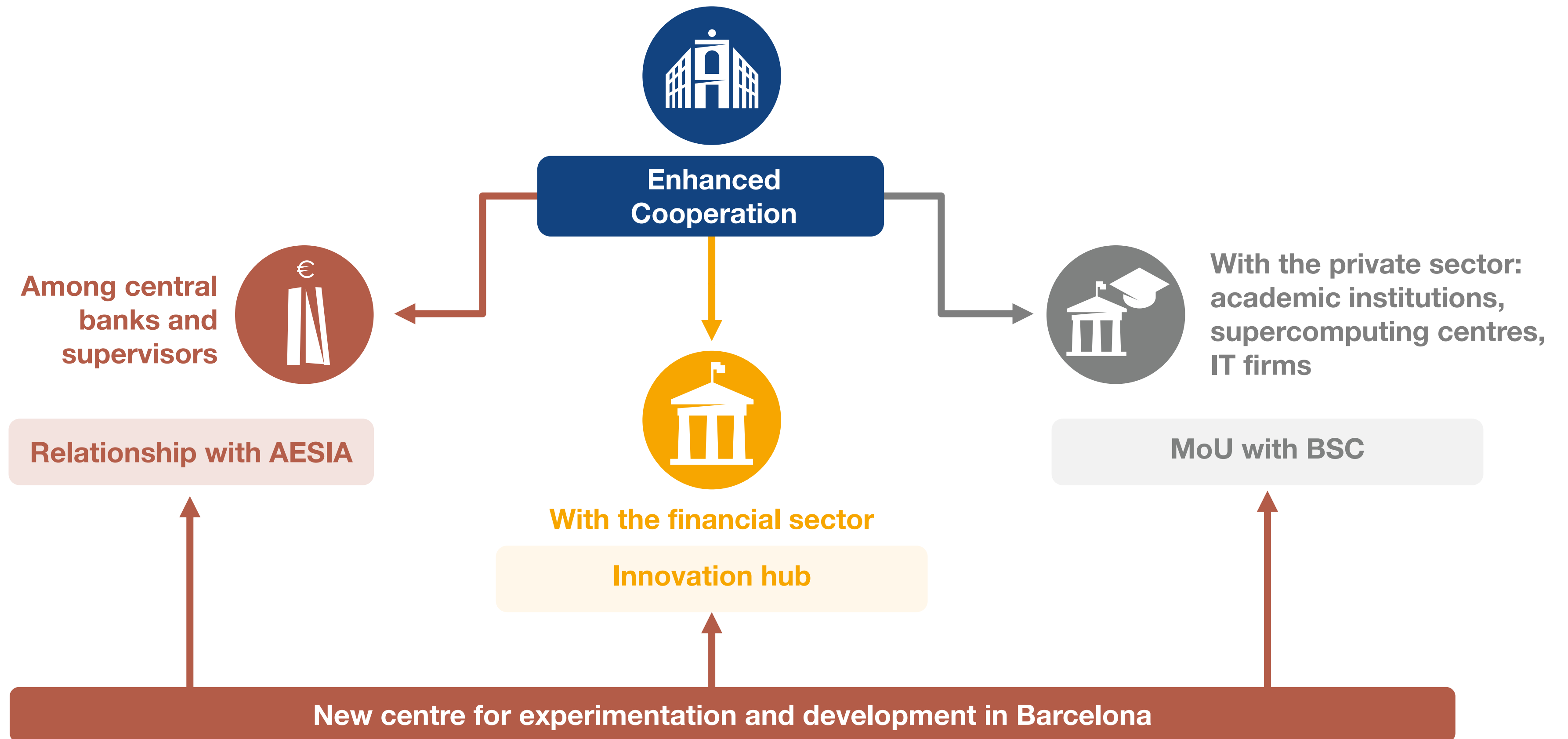
6. REGULATORY FRAGMENTATION HINDERS AI DEPLOYMENT



KEY ELEMENTS TO MOVE FORWARD



7. ENHANCED COOPERATION WILL ALLOW AI DEVELOPMENT TO BE SCALED UP



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