



# Kognitive und prädikative Analysen in der Wirtschaftsprüfung

Ringvorlesung Universität Zürich –

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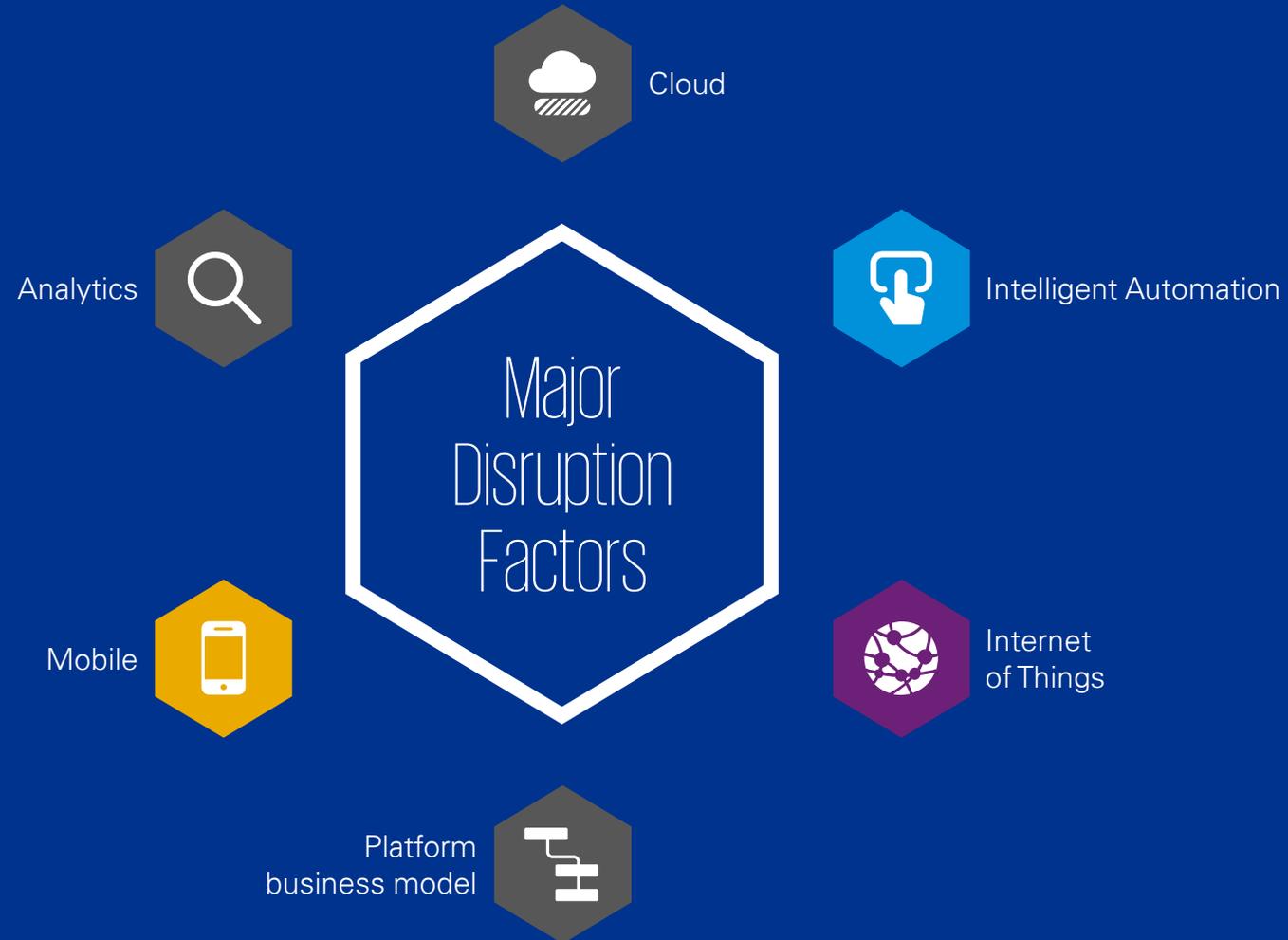
**9. Oktober 2018**



# Key takeaways

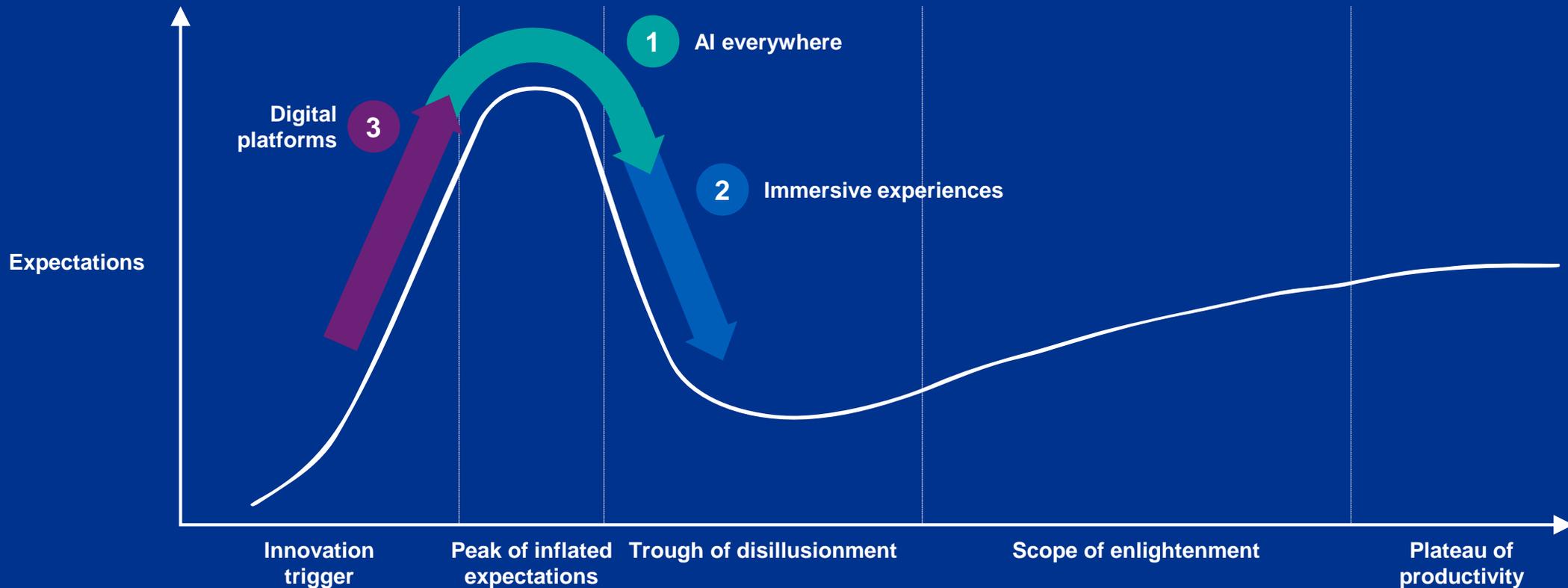
- 1) Disruption = new normal**
- 2) The digital/ technological landscape has changed significantly**
- 3) Automation (Robotics, Cognitive , AI) is the key driver to increase efficiency; this also applies to auditing**
- 4) Challenges and opportunities: How it influences auditing**

# Digital Disruption is the new normal



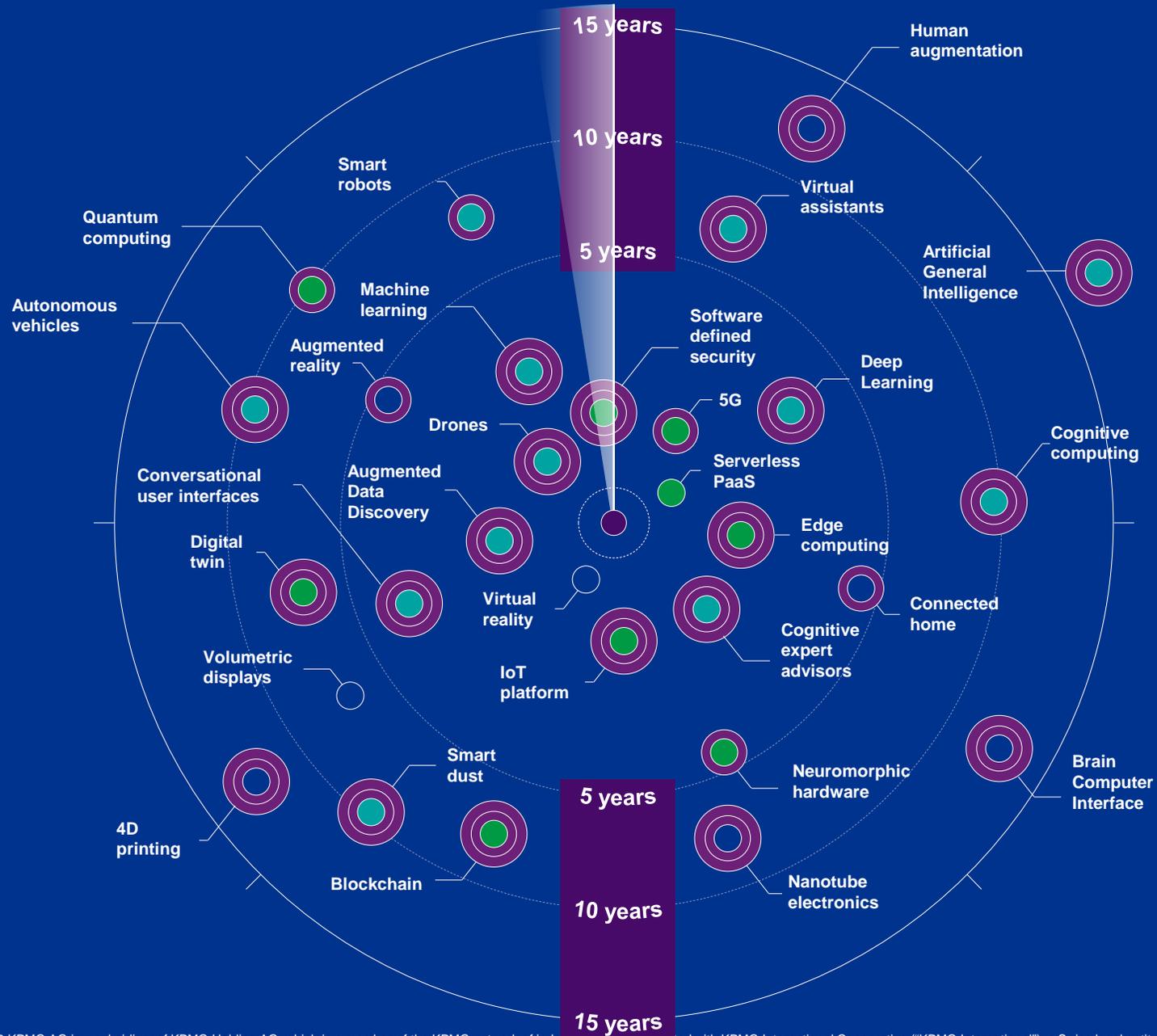
# Emerging technology trends

Three key emerging technology trends: immersive experiences drive AI, enabled by digital platforms



Source: Gartner Emerging Technology hype cycle 2017

# Estimated time to impact



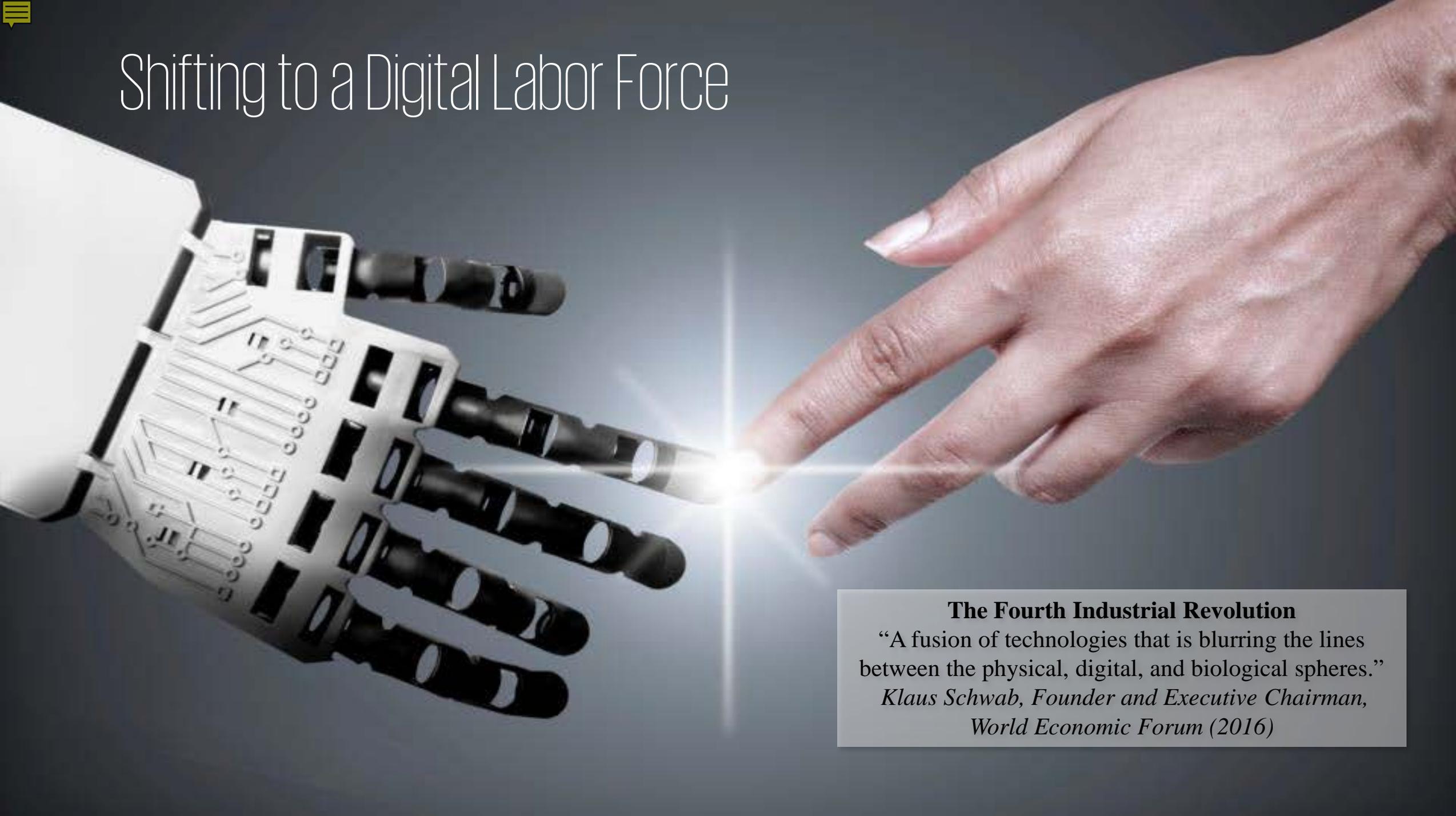
- Immersive experience
- Artificial intelligence
- Digital platforms
- Immersive experience, AI & Digital platforms

- Impact**
- Transformational
  - High
  - Moderate

# The Changing Landscape of Digital

 <p>Intelligent Automation Robotics/ Cognitive/AI</p>	 <p>Security &amp; Privacy</p>	 <p>Mobile products &amp; services</p>
 <p>Business Intelligence &amp; Analytical tools</p>	 <p>Digital Business Services</p>	 <p>Advanced competencies in data science. Audit Tech.</p>
 <p>Digital Banking &amp; Insurance</p>	 <p>Platform as a Service</p>	 <p>Cloud Strategy &amp; Computing</p>

# Shifting to a Digital Labor Force



## **The Fourth Industrial Revolution**

“A fusion of technologies that is blurring the lines between the physical, digital, and biological spheres.”

*Klaus Schwab, Founder and Executive Chairman,  
World Economic Forum (2016)*

# The Universe of Intelligent Automation

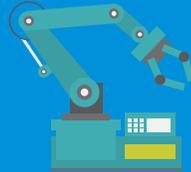
Voice and Image Recognition



Artificial Intelligence



Machine Learning



Predictive Analytics



Data Mining



Natural Language Processing



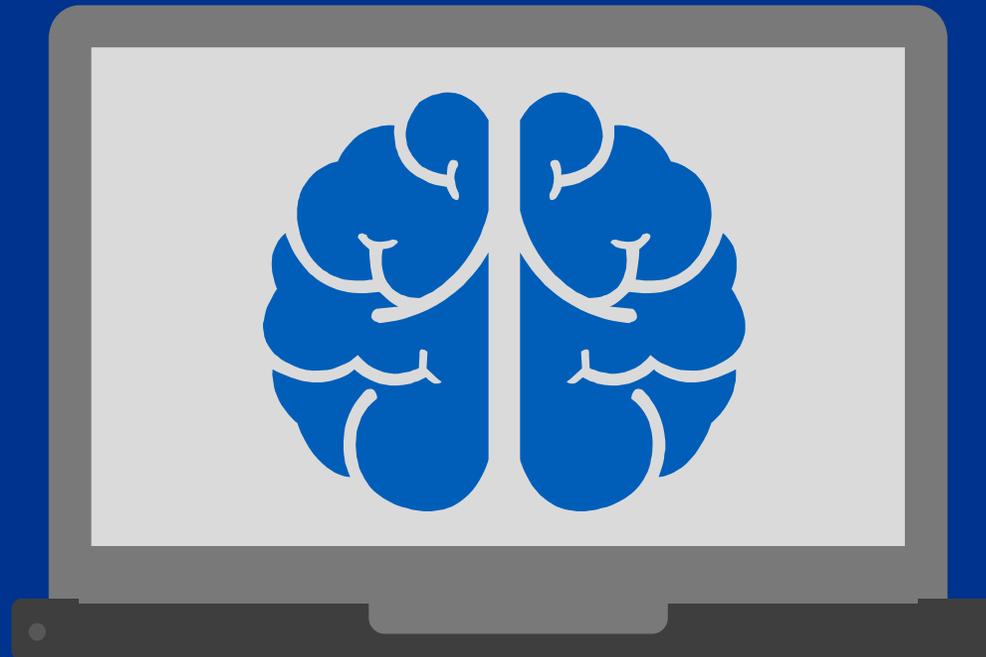
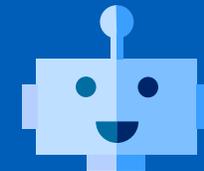
Pattern Recognition



Digital Labor



Robotics



# The benefits of a digital labor force



## Wave 1: Labor arbitrage



15 – 30 percent  
Cost take out



Model is scalable to the extent that  
you can scale labor



Custom/complex, legacy:  
“Your Mess for Less”



Access to low cost labor necessary  
to provide continuous value



Revenue/profit correlated to people



## Wave 2: Labor automation



40 – 75 percent  
Cost take out for relevant functions



Model is scalable, and is  
largely independent of labor growth



Transformative – new way of  
doing business



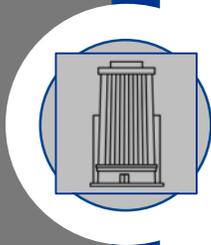
Access to “rocket scientists”  
who can codify manual processes



Revenue/profit not correlated to people

# Intelligent automation targets across enterprise business functions

## Enterprise Functions



### Human Resources

- Employee on-boarding and off-boarding
- Payroll
- Time recording and compliance
- Repeatable tasks in ERP
- Email notifications
- Populating/ aggregating employee information



### Sales and Marketing

- NLP enabled analytics
- Social media mining / monitoring
- Predicting high value sales leads
- Manual CRM updates
- Virtual sales agents



### Customer Support

- Virtual agents (chat bots)
- Call center “agent assist”
- Task execution



### Finance and Accounting

- Record to Report
- Plan to Perform
- Source to Pay
- Quote to Cash
- Acquire to Retire
- Invoice processing/exceptions
- AP/AR actions
- Reporting
- Auditing
- Tax filings



### Legal/Compliance

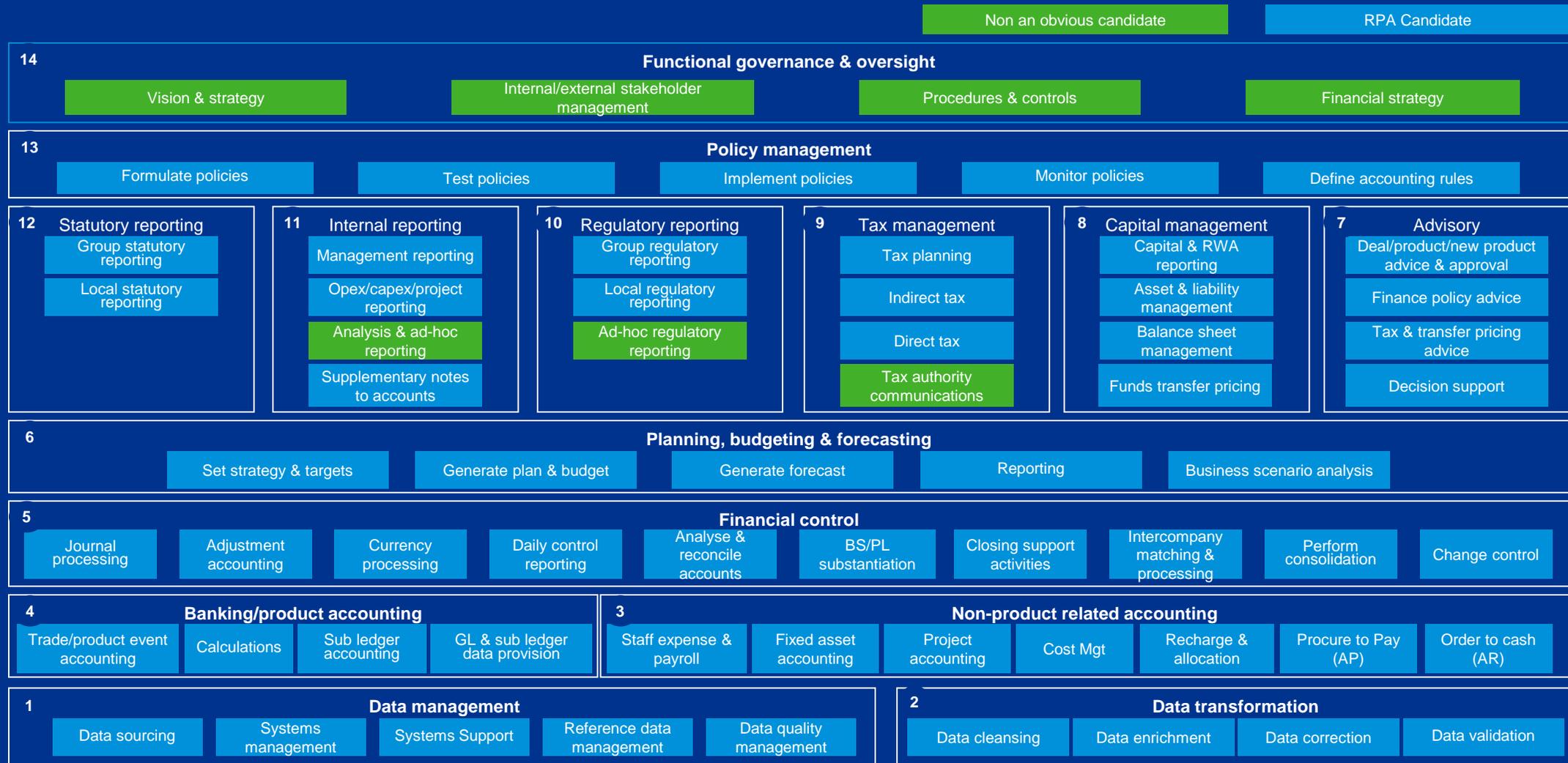
- Research / document review
- Document preparation
- Controls automation



### Supply Chain

- Order flow through
- Inventory Mgmt.
- Exceptions / fallout

# Potential application of robotics in finance



# The establishing market for „intelligent automation“ is still in its infancy

## Characteristics of the intelligent automation market

- Unstructured and „young“
  - Few references, many promises
  - Extreme dynamics of development
  - Different to legacy systems of the past
- **Risk: High costs and delays**



The right vendor is crucial

SAMPLE



## Impact on stability

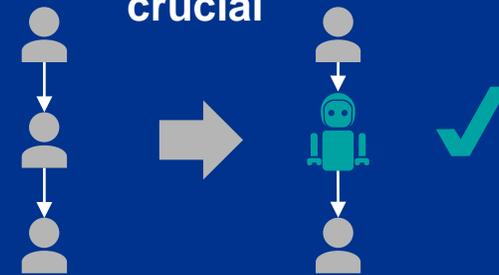
Currently well-attuned team and known contact in case of problems → new processes and contacts

- New process operations and guidelines
- New IT systems and tools

→ **Risk: Decrease in performance and delays**



The right assessment is crucial





# Putting focus on auditing

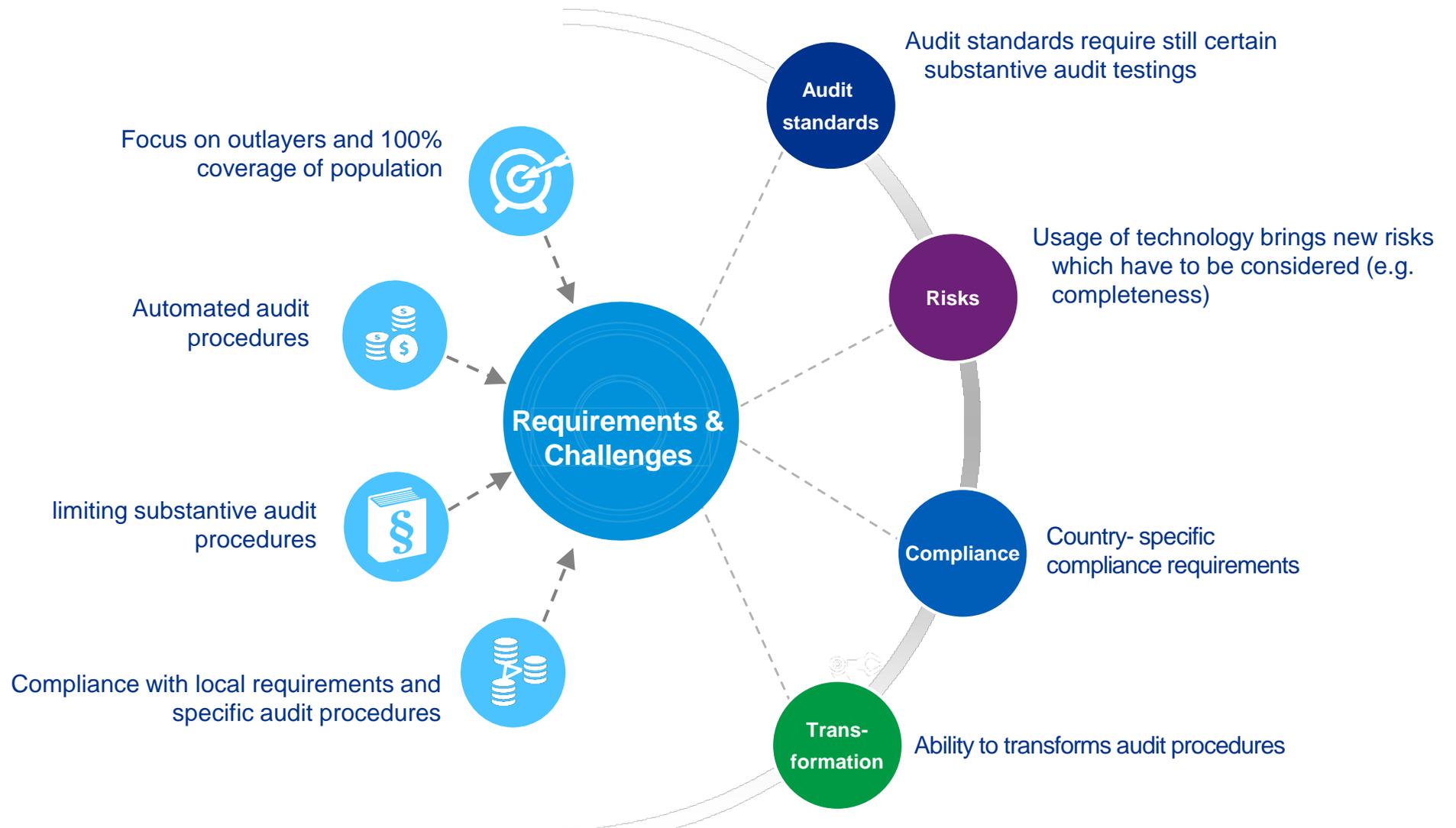


# Building Trust

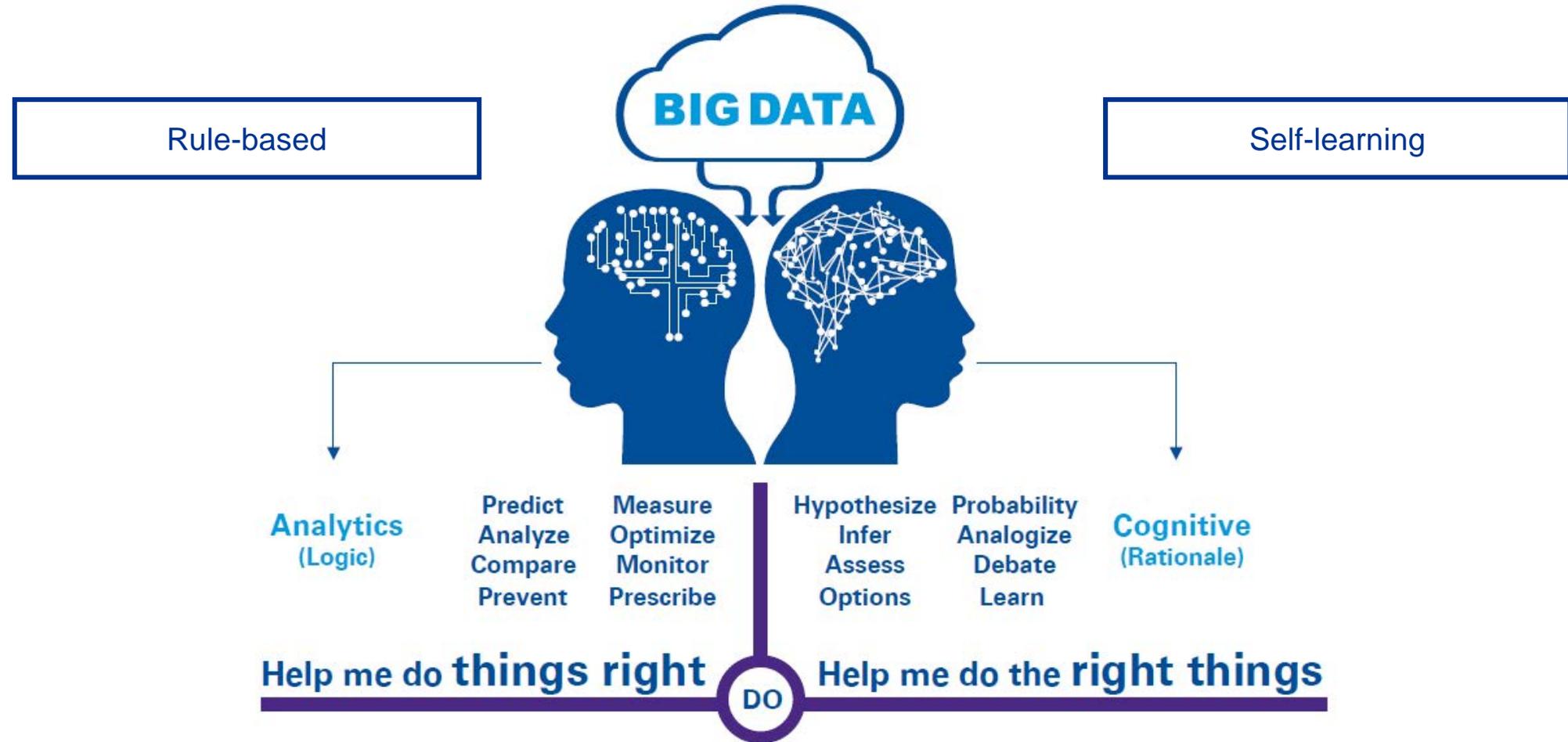


Source: *Building Trust in Analytics, Breaking the Cycle of Mistrust in D&A*, Global Data & Analytics, KPMG International, October 2016.

# Requirements and challenges

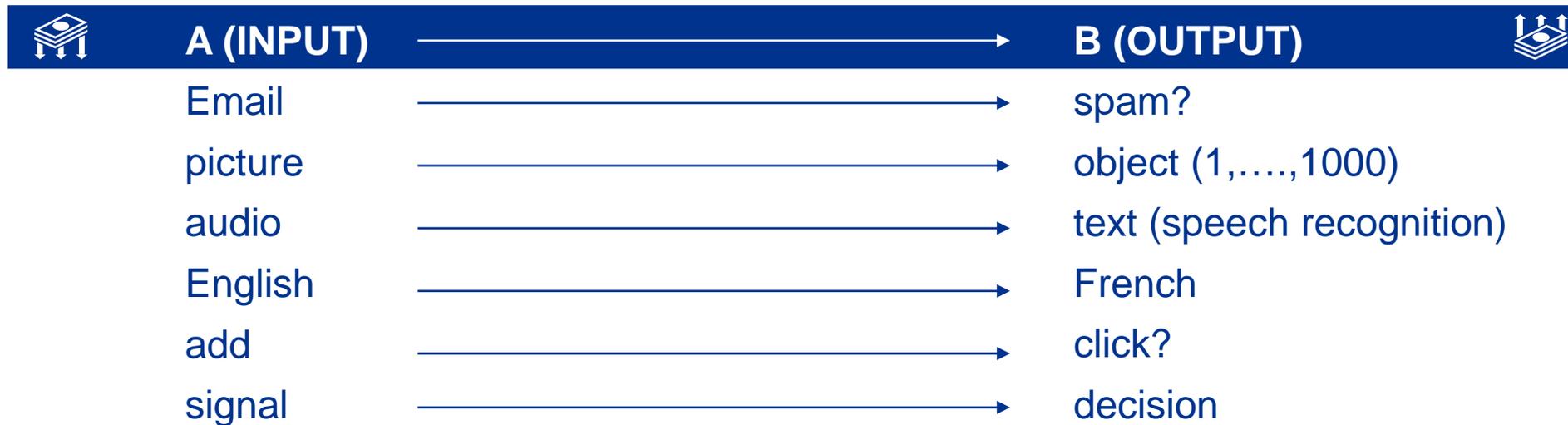


# Requirements and challenges



# Trends and possibilities

## Supervised Learning



# Current fields of application

## 1. Planning / Risk Assessment

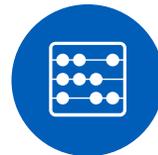


- Support of risk assessments on company level (e.g. linking different sources such as Social Media, internet etc.).
- Identification of high-risk areas on business process level which would need higher attention in the audit.
- .....



## 3. Closing / Reporting

- .....



## 2. Testing

- Analysis and visualisation of account relationships
- Identification and visualisation of outliers in data streams
- Automated audit procedures (e.g. revenue recognition)
- .....

# Current fields of application - Demo



Thank you!



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