

RESEARCH TO REALITY

DIGITAL SOLUTIONS TO
EUROPEAN CHALLENGES

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Thales Research & Technology



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The Future of Digital Europe : From Research to Reality ?

A perspective from a Thales' researcher

RESEARCH
TO **REALITY**

Thales: a major player in R&D with a responsibility engagement

Listed 10 times in the
 **TOP 100 GLOBAL INNOVATORS**

More than **40%** of Thales employees working in R&D

Intellectual property portfolio including **20,500 patents**



Corporate Responsibility: A strategic Choice, Key to Business Performance

Embedded in **every business process and day to day work**

- Code of Ethics and dedicated organisation.
- Robust policies and internal control.
- Focus on employee training, awareness and ownership.
- Group-wide environmental, social and governance programmes.
- Promoting responsible dialogue with all stakeholders.
- Driving industry-wide initiatives (corruption prevention, best practices).



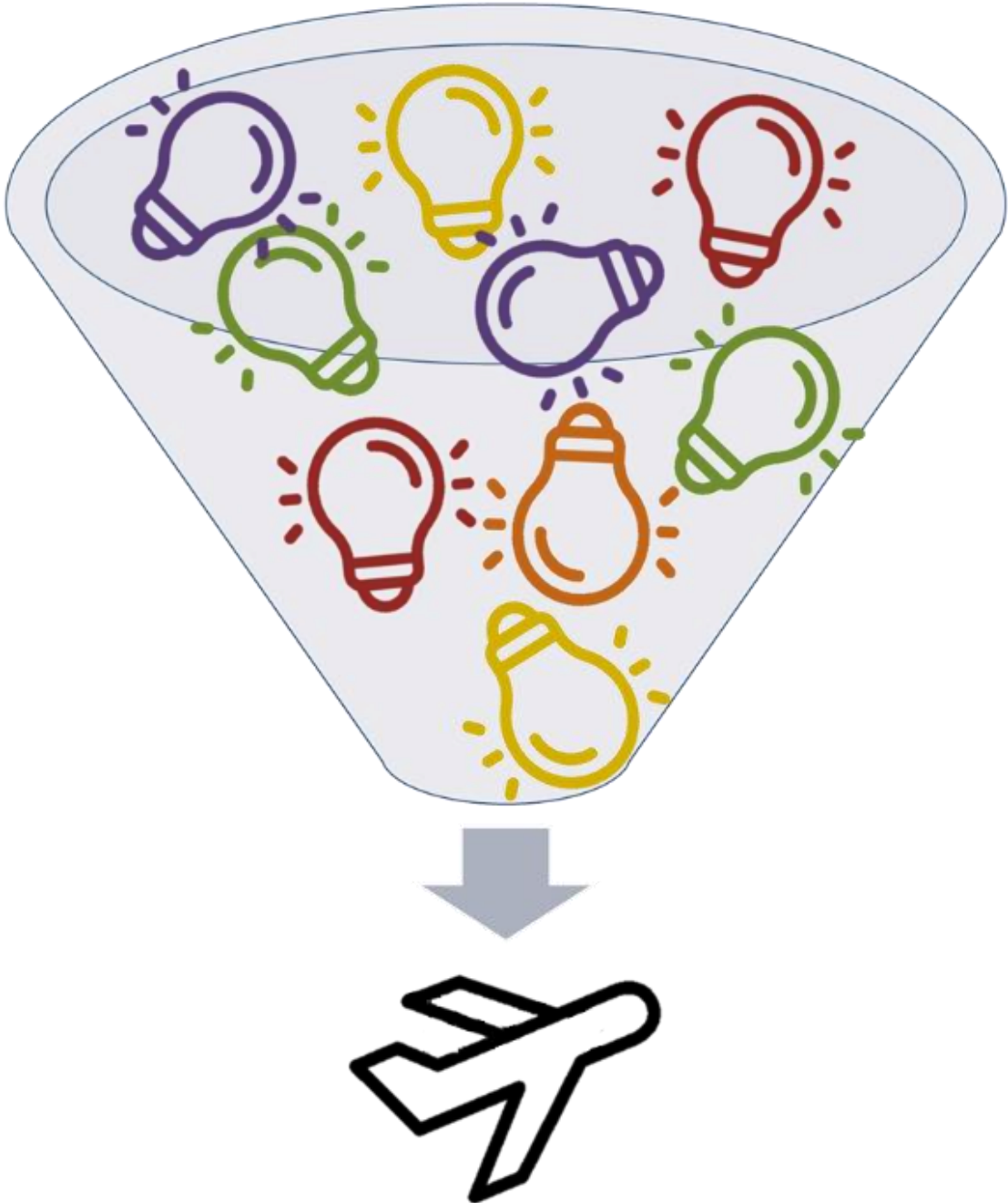
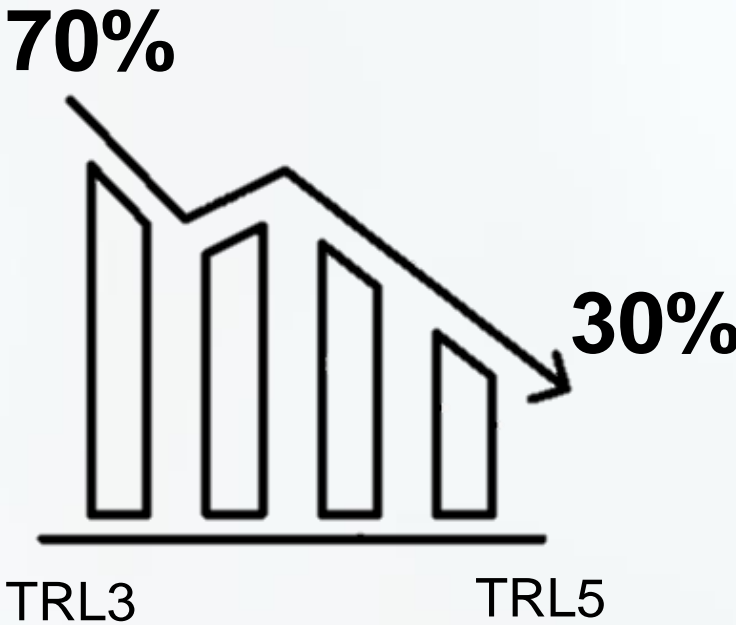
Global Compact
 WE SUPPORT
 Member of Global Compact since 2003. Thales has achieved Global Compact Advanced level.

CDP
 DISCLOSE OR DIE
 Carbon Disclosure Project. Thales ranked CDP « Leadership A/A- »

Dow Jones Sustainability Indexes
 Thales has been ranked in the top 3, in the Defense/Aerospace sector by the Dow Jones Sustainability Indices (DJSI) Europe and World, for the last 3 years.



Funnel effect



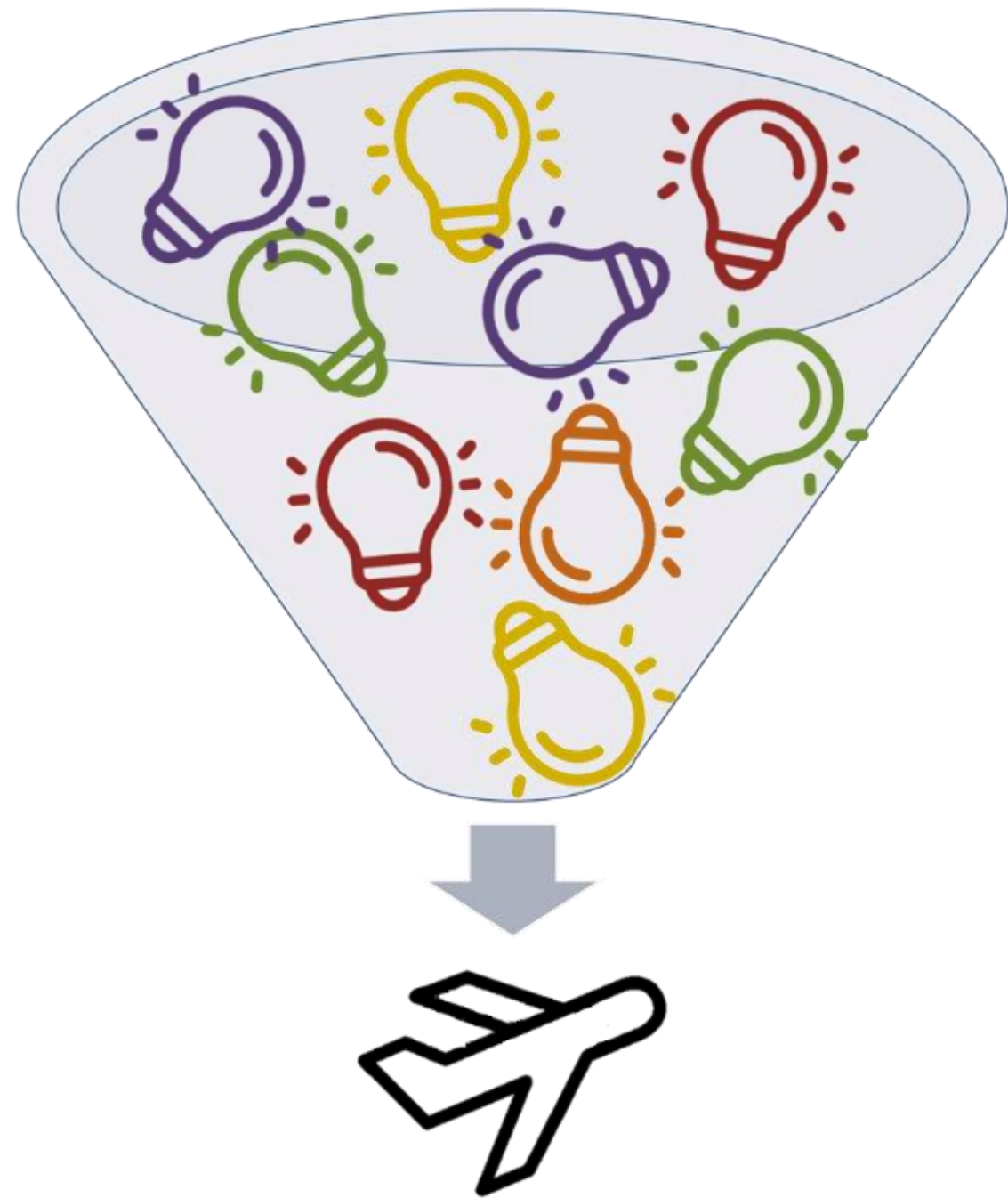
European programs as enablers



- Financial support : **support for riskier projects**
- **Pooling knowledge and resources** between partners
- **Industrial players involved** in roadmaps and plannings
- Identify and experience the players
- Within a **secure contractual framework**



- **Administrative** overhead
- **Lead time** of the global processus extended
- Many different calls, with different constraints and financial support levels : **complexity**
- Consortium **size and heterogeneity** can be an obstacle

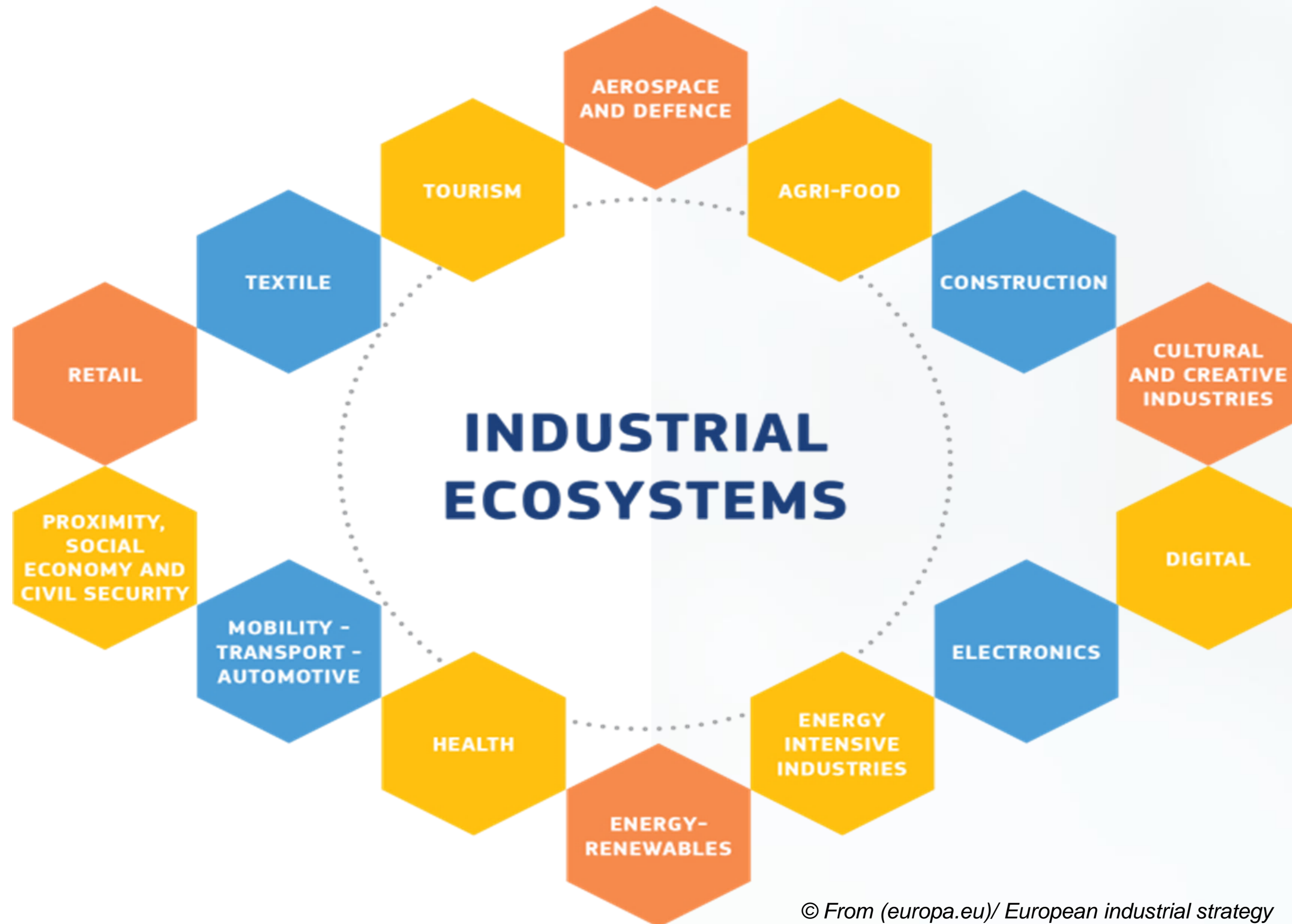


Digital Technologies (AI)

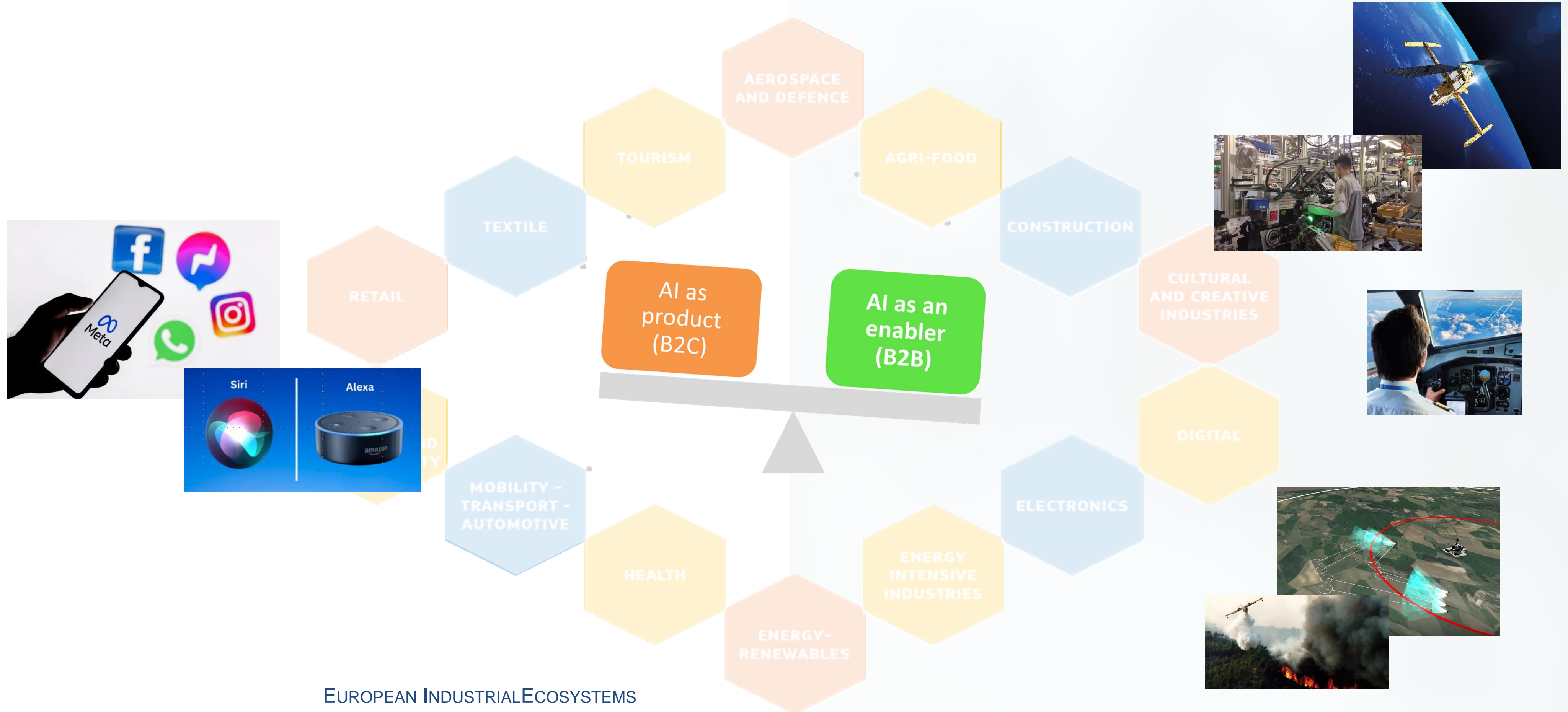


Specific issues and adaptations ?

Facing the reality : deciding which battle to fight



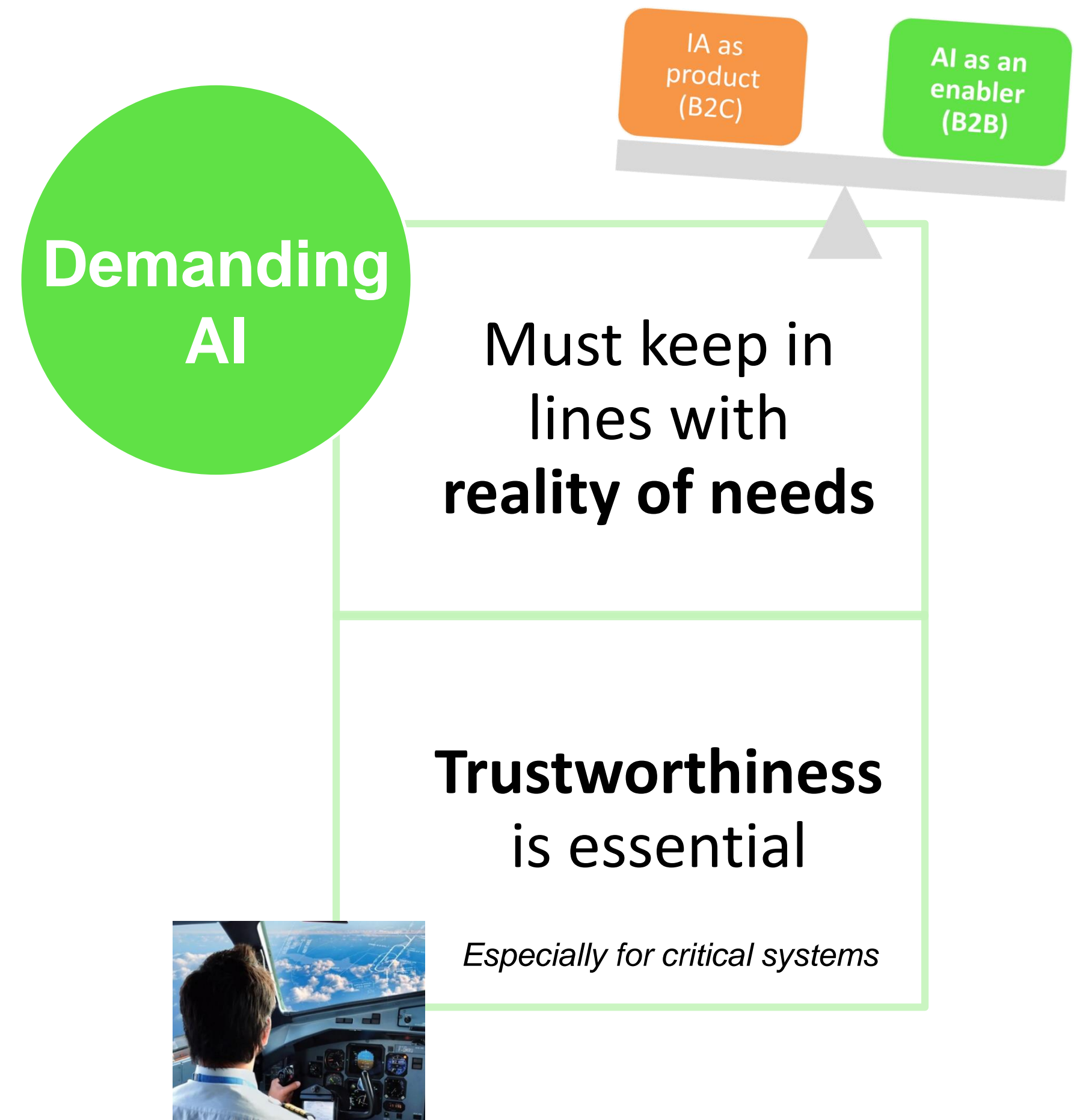
Facing the reality : building on its strength



AI as an enabler (B2B)



Specific features to tackle



Demanding AI

IA as product (B2C)

AI as an enabler (B2B)

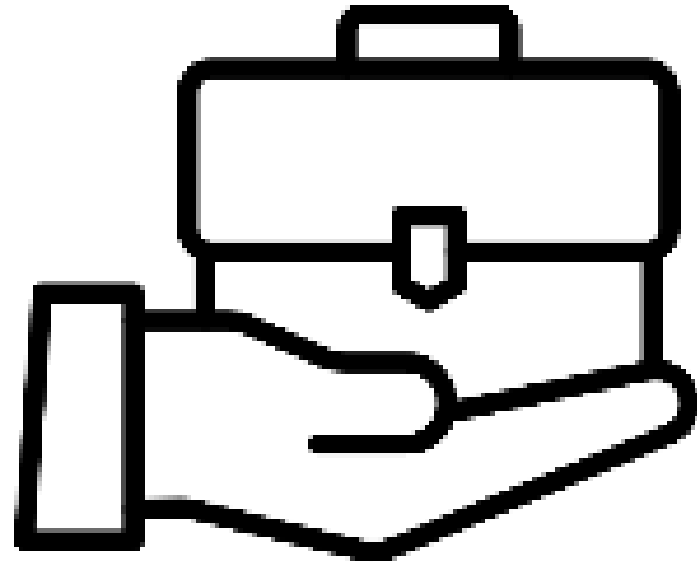
Must keep in lines with reality of needs

Trustworthiness is essential

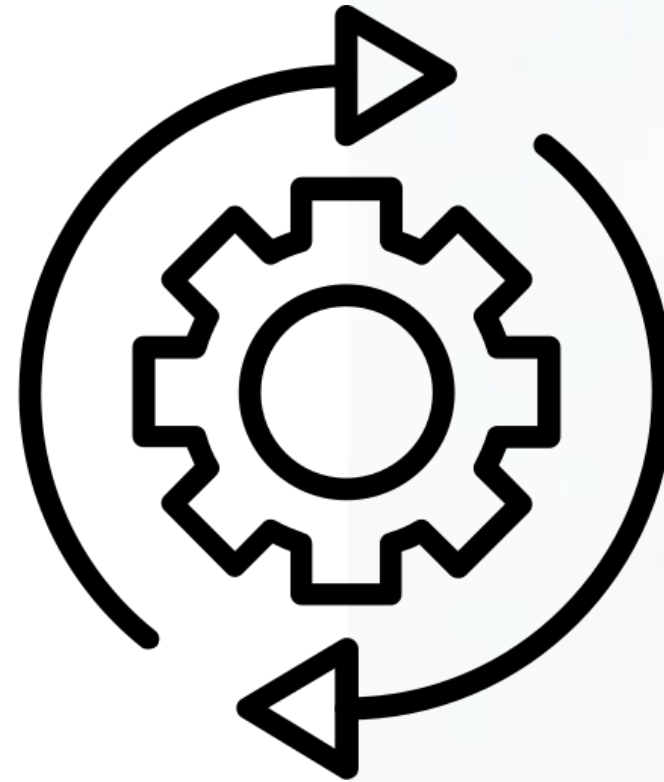
Especially for critical systems



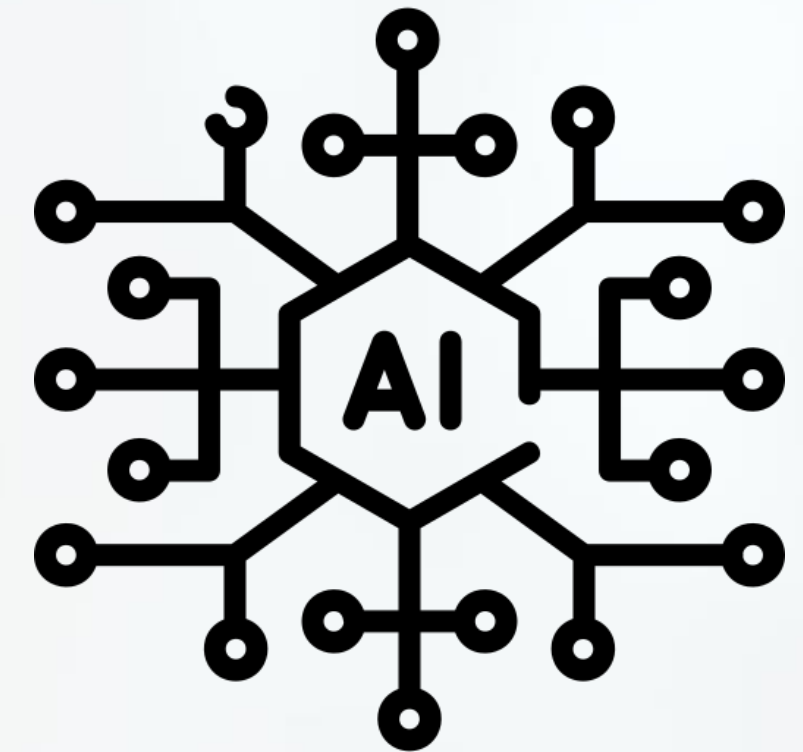
(B2B) AI from research to reality : 3 levers



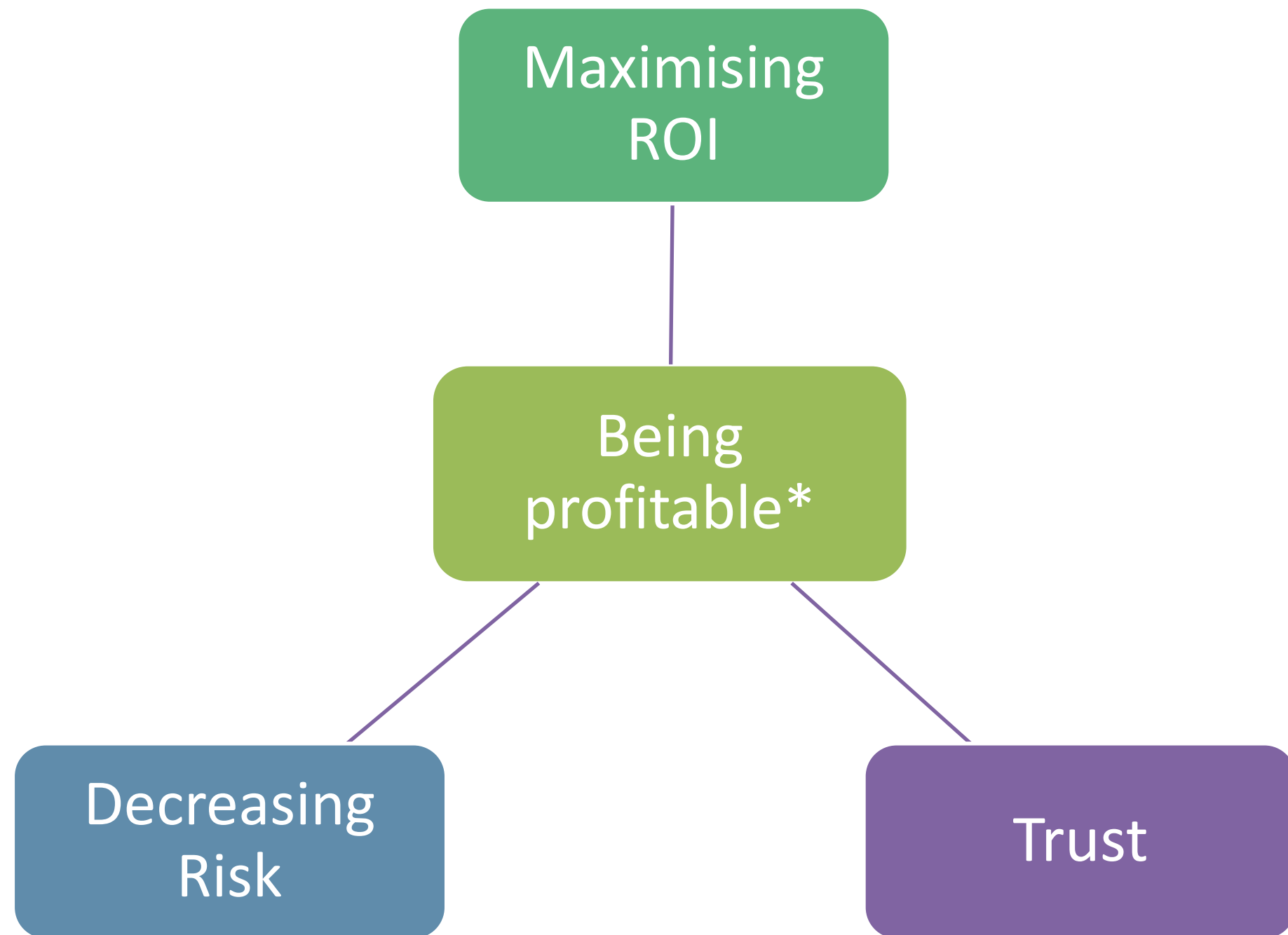
Business



Organisation



Technological



*A very (limited) researcher's viewpoint

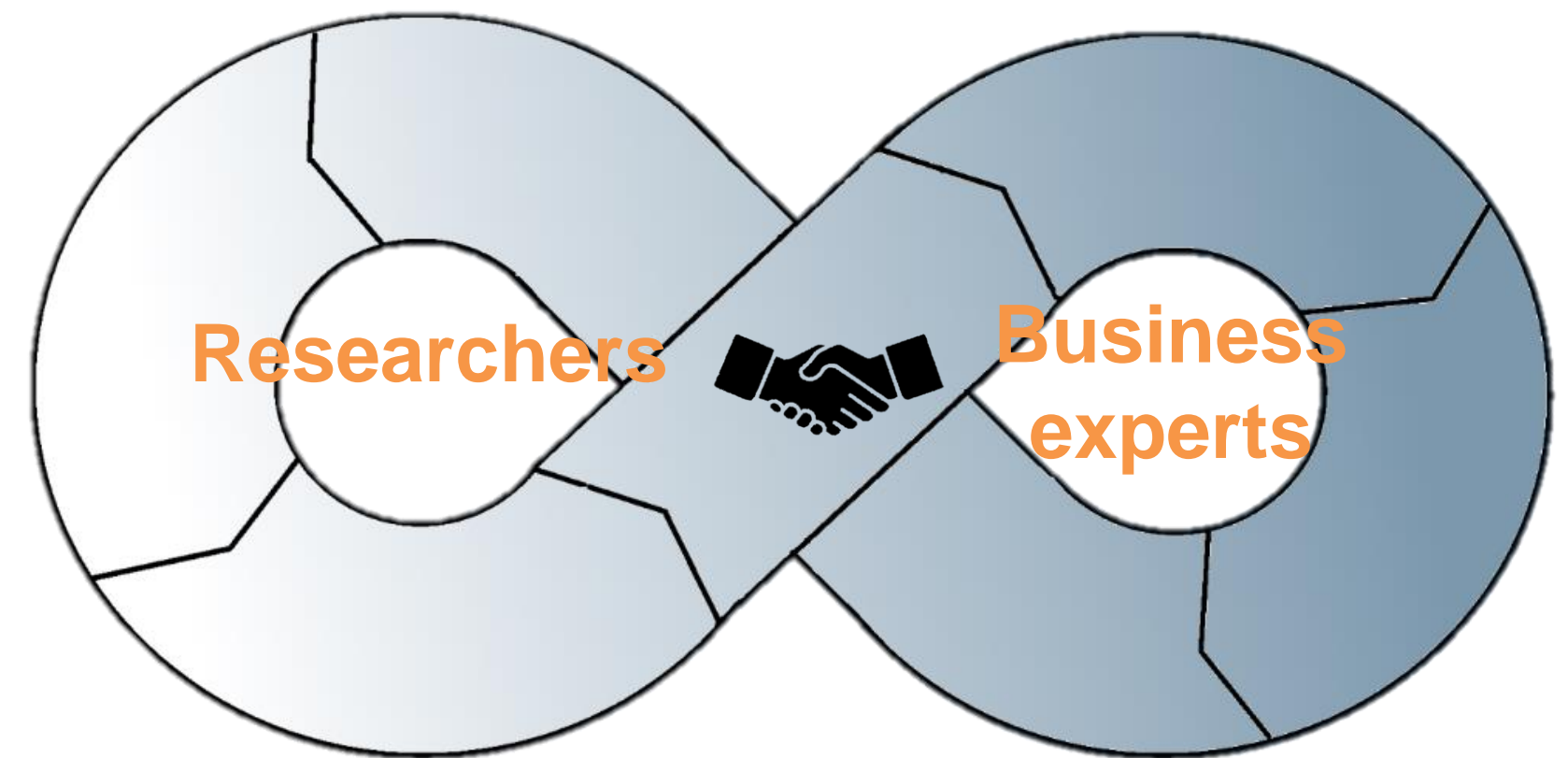
Business lever

- **Stability** : regulation as a pragmatic and balanced framework
- **Efficiency** : impactful consortia with complementary players over the value chain
- **Business perspectives** : identified business model beyond CapEx (eg: *EuroQCI*)



Organisation lever

- **Acculturation research / business** : earlier consideration of **product realities and constraints**
- The question of **data sharing** : Providing a win-win **contractual framework** among partners
- Recognizing the added-value of **industrial research**



Technological lever



Trustworthiness – example of hallucination

Are chicken eggs bigger than cow eggs?

No, chicken eggs are generally smaller than cow eggs. Chicken eggs typically range from about 40-70 grams, while cow eggs can weigh up to about 90 grams. However, there are some breeds of chicken that lay larger eggs and some breeds of cow that lay smaller eggs, which may lead to variation in size.

This is a chicken egg.



This is a cow egg.



@Caroline Burns

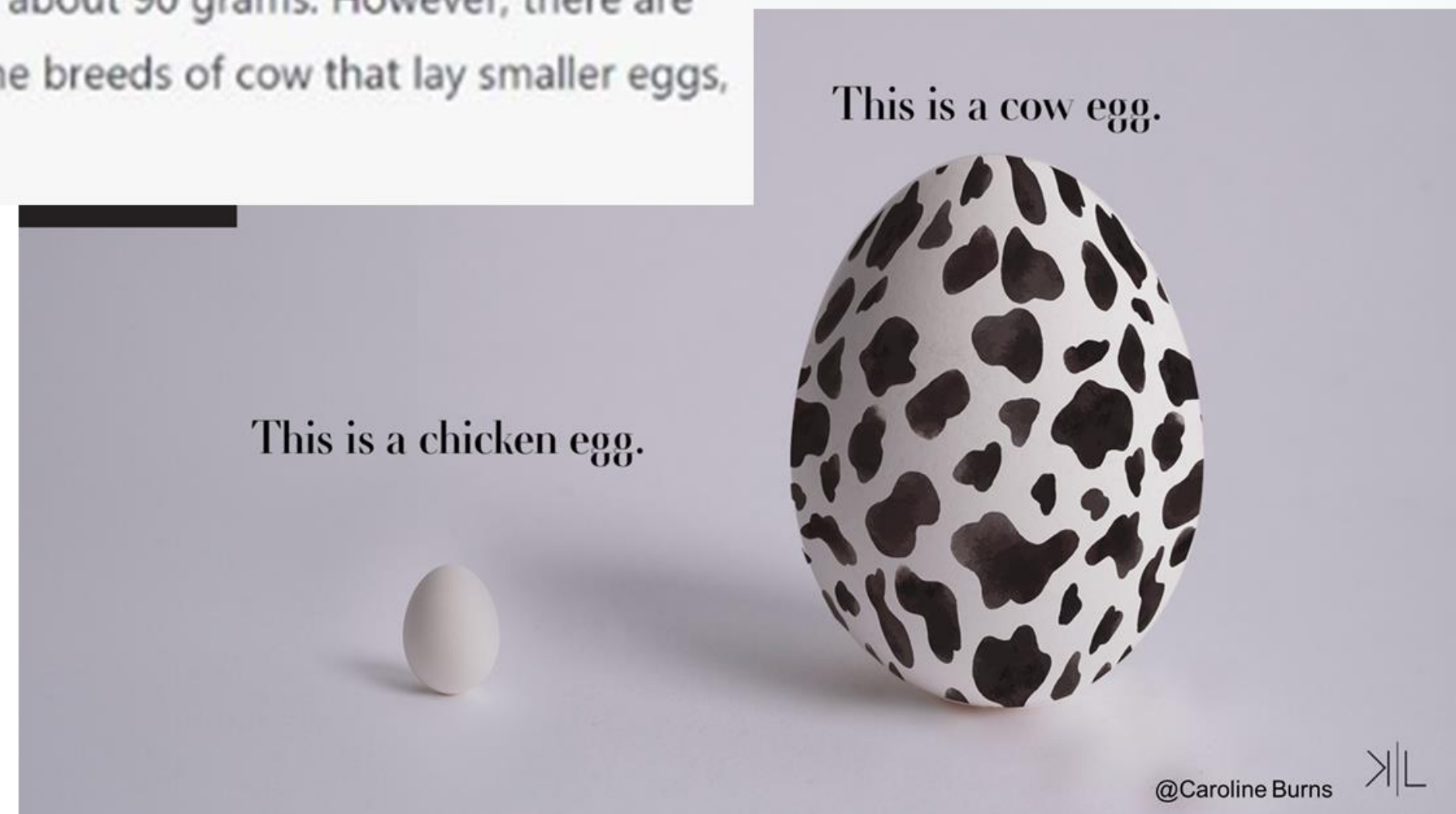


Trustworthiness – example of hallucination

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EXPLAINABILITY



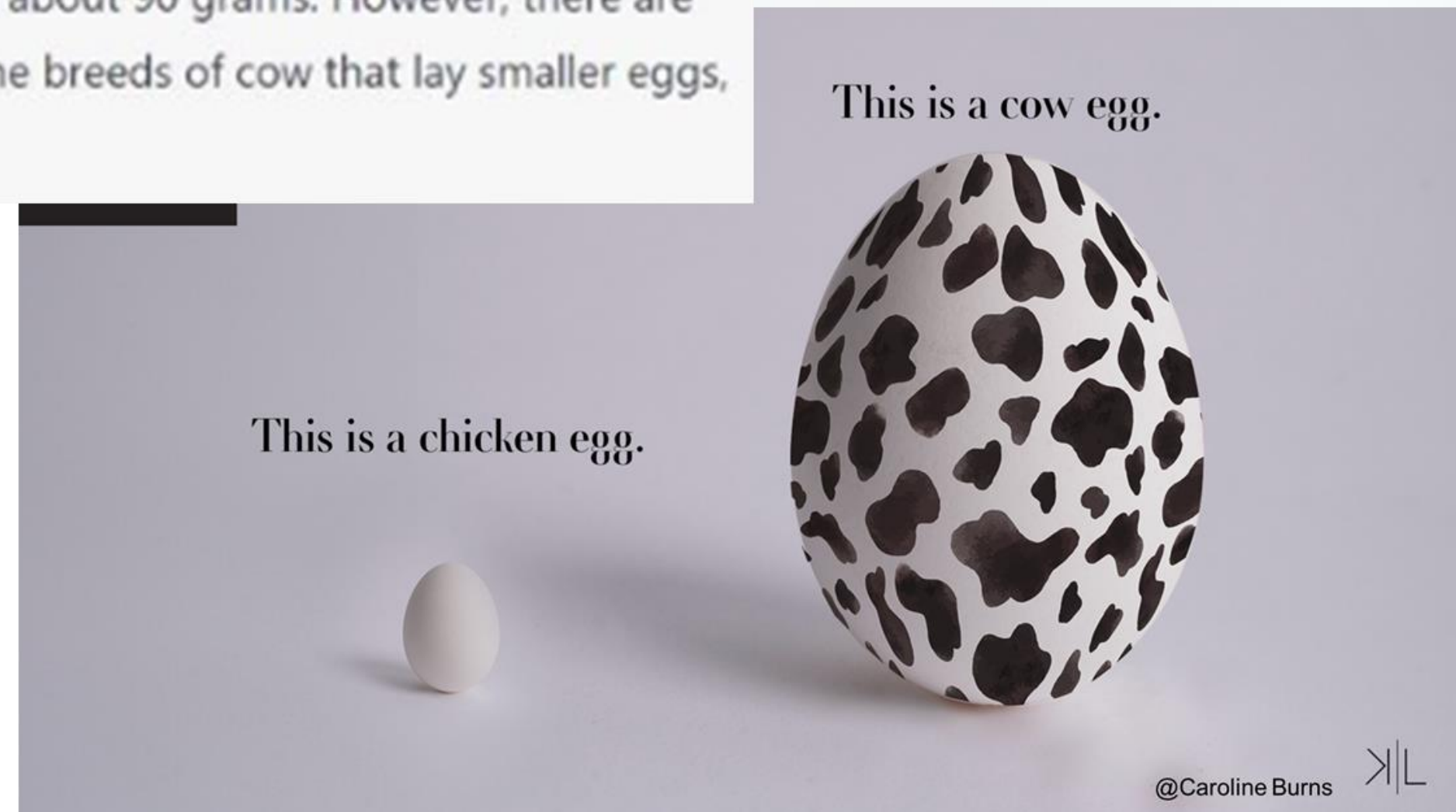
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EXPLAINABILITY

VALIDITY



Trustworthiness

Validity

To guaranty that an AI-based system will do what it is meant to do, **all** what it is meant to do and **only** what is meant to do

Security

To ensure **robustness and resilience** to adversarial conditions, such as decoying and cyber-attacks

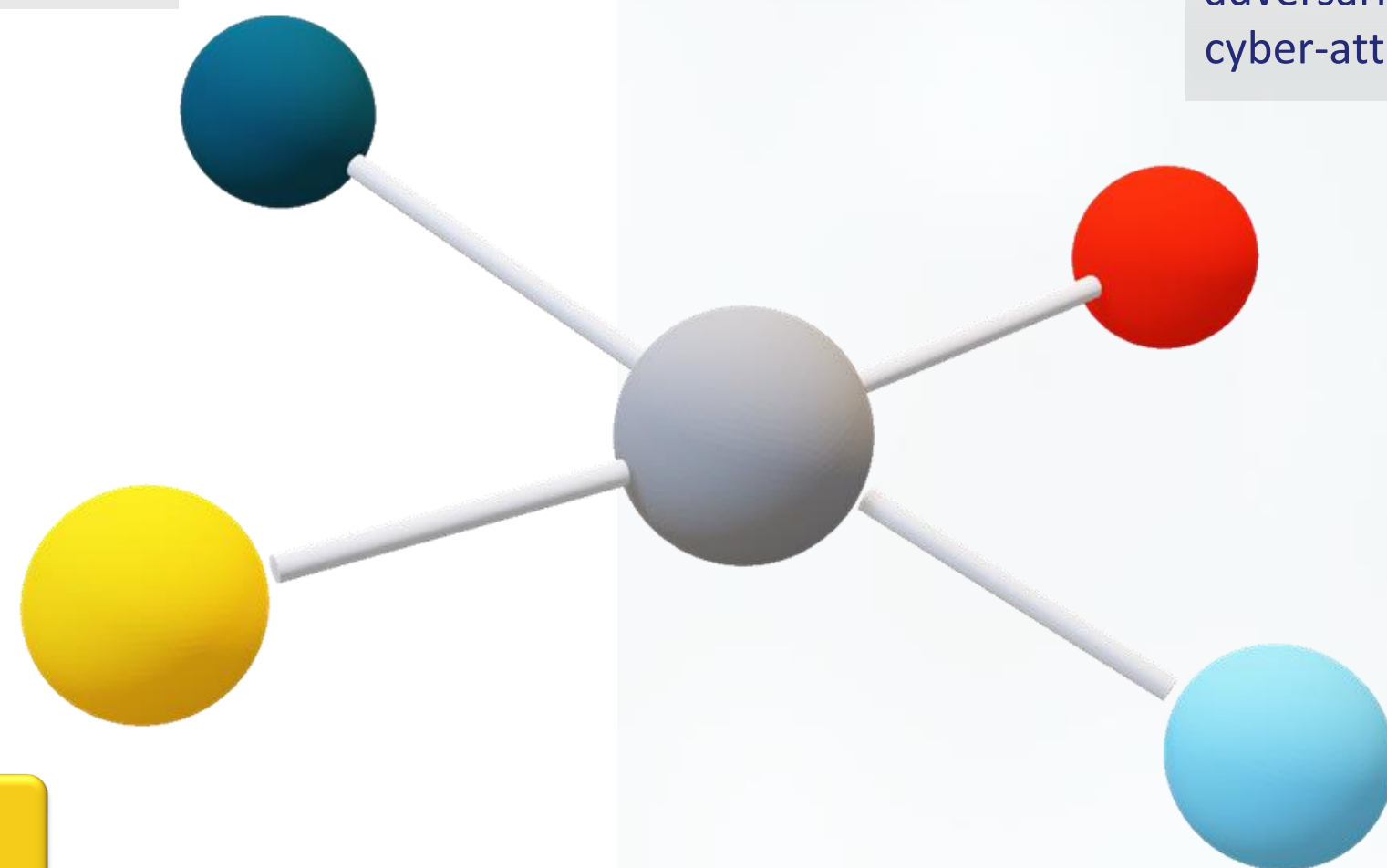
Explainability

To be able to provide **human-level, understandable and context-relevant** justifications and explanations

Responsibility

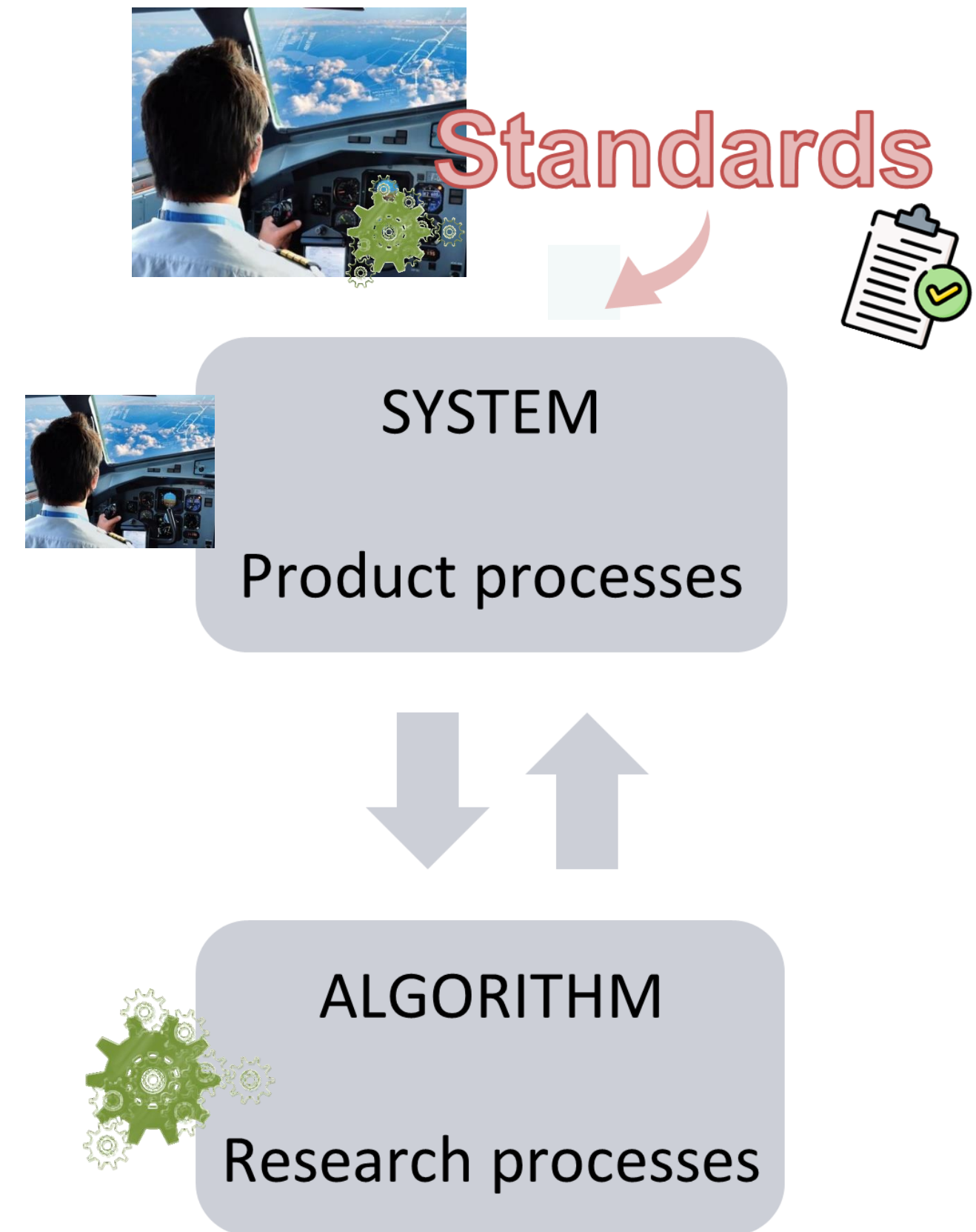
To be compliant with **ethical, legal and regulatory** frameworks

Thales TrUE AI Strategy



Trustworthiness

AI will not be widely used in the economy unless its impact is mastered



Strategic Autonomy

1. Capacity of **Analysis and Foresight**

⇒ to avoid inadequacy in strategic positioning

2. **Strength of R&D**

⇒ self-funded R&D, collaborative projects

3. **Relations with players**

⇒ build **complementarities over the value chain** with fair and balanced relationships among major digital players (interdependency)

4. **Vigilance on value-chains**

⇒ multi-sources approach, And...a little bit of autarky (eg: *semi-conductors shortage*)

5. **Talents**

⇒ in a context of growing competition



“**Ability to control
your own digital
destiny**”

World Economic Forum

Ecological Footprint & People

We have to be aware of **AI impact** on the environment



Investing in the **recruitment and reinforcement of competencies**

1

Ecological Footprint

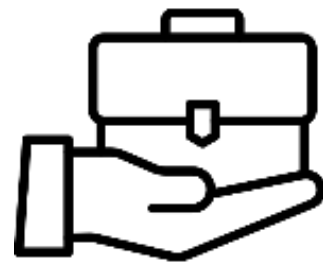
2

Educating people to digital technologies and their usage to master our future in a **democratic society**

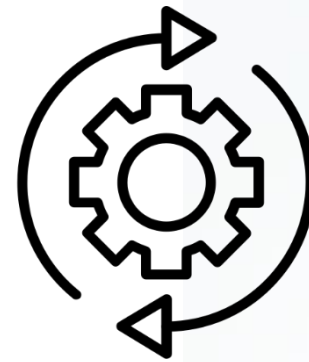
The Future of Digital Europe

From Research to Reality ?

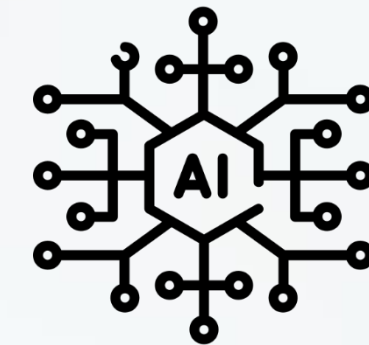
Anchor dreams on our strengths ↔ **AI as an enabler to stay among the world leaders**



Stability



Acculturation



Trustworthiness

Thank you