

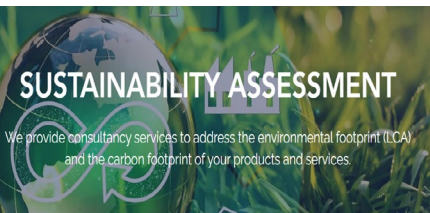


86<sup>th</sup> LCA Discussion Forum:  
Safe and Sustainable by Design  
25 April 2024, ETH

Cyrille Durand

SSbD: a paradigm shift for chemicals and  
materials development

- Swiss SME founded in August 2020
- Our goal is to bridge the gap between innovative ideas and regulatory compliant products
- We implement the principles of Safe and Sustainable by Design



**SUSTAINABILITY ASSESSMENT**

We provide consultancy services to address the environmental footprint (LCA) and the carbon footprint of your products and services.



**SAFE AND SUSTAINABLE BY DESIGN**

We provide unique expertise in the nano-sector addressing challenges regarding regulation and sustainability issues along the life cycle of nano-enabled products.



**SAFETY AND REGULATIONS**

We offer industry support on REACH, Medical Device, and Cosmetic Regulations.



**NANOTECHNOLOGY**

Nanotechnologies represent a transversal technology and as such may cover different regulations depending on the intended use/process of a nano-enabled product. Developers, therefore, should keep themselves active in different regulatory fora which translates, sometimes in a burden due to lack of expertise and resources. TEMAS Solutions supports companies navigate through this plethora of regulations resulting in cost-efficient product launch into the market.



**RISK ASSESSMENT AND BIOLOGICAL EVALUATION REPORTS**

We perform risk assessment for medical devices, cosmetics and chemicals taking on board the latest developments and tools.



**TRAINING**

We offer training workshops to companies and individuals interested in sustainability, risk assessment and safe and sustainable by design.

# TEMAS

## *Solutions*

*Safe & Sustainable Innovations*



**Devendra Joshi**  
Business developer and IT



**James Baker PhD**  
Innovation manager and  
international project developer



**Blanca Suarez-Merino DPhil**  
Toxicologist & Risk Assessor



**Véronique Adam PhD**  
Environmental Risk Assessor



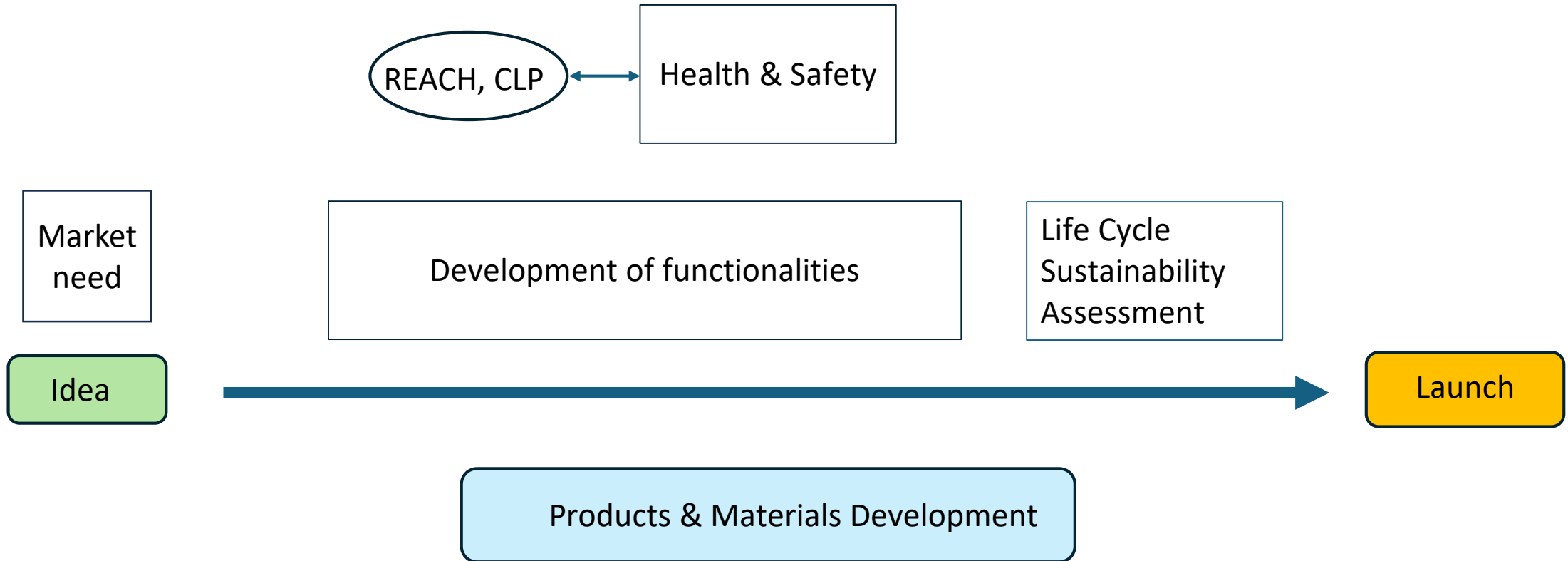
**Cyrille Durand**  
Sustainability Consultant



**Elise Morel (PhD)**  
Scientific Consultant

# Conventional R&D process

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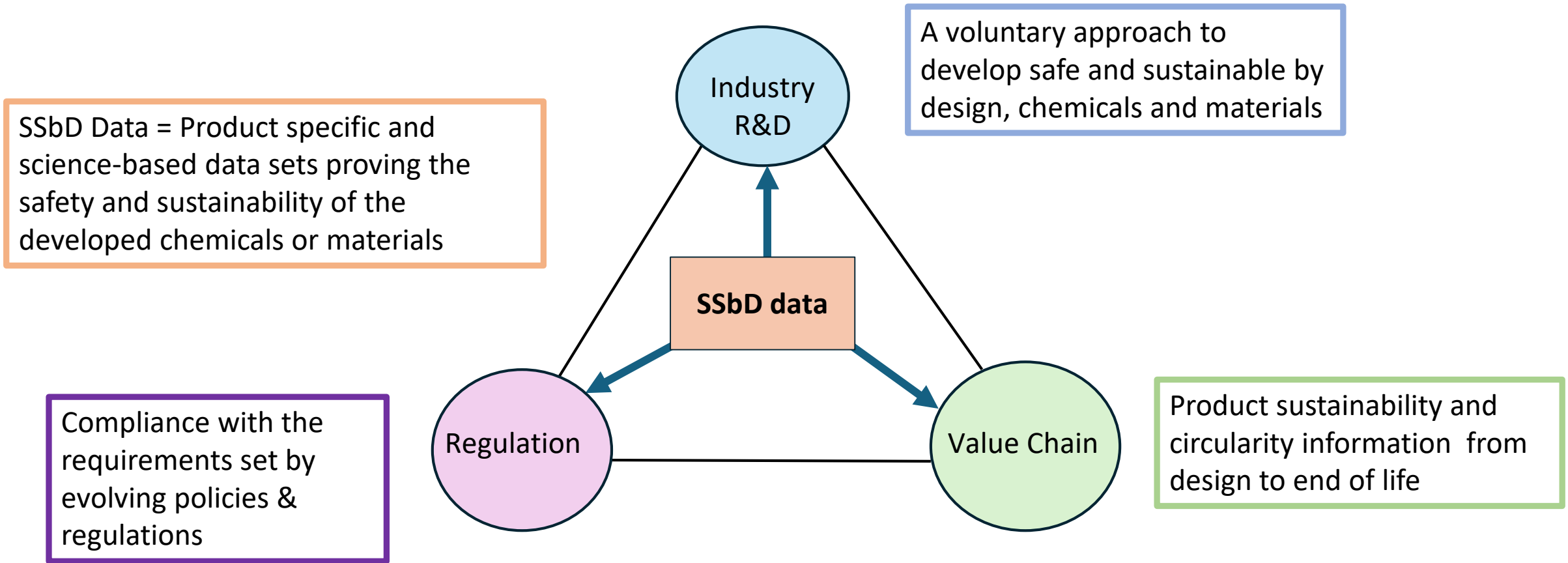
# SSbD enabled R&D process

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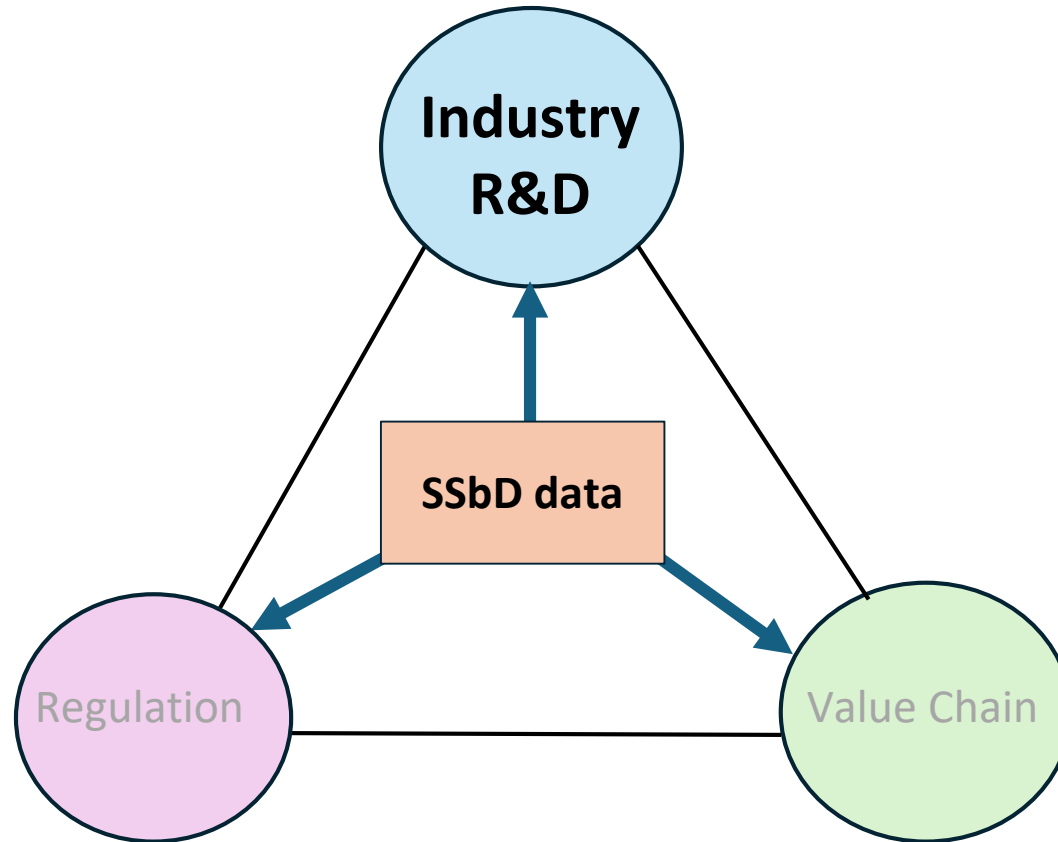
# SSbD: the paradigm shift towards... ...a 3-dimensional ecosystem

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# SSbD: the paradigm shift towards... ...a 3-dimensional ecosystem

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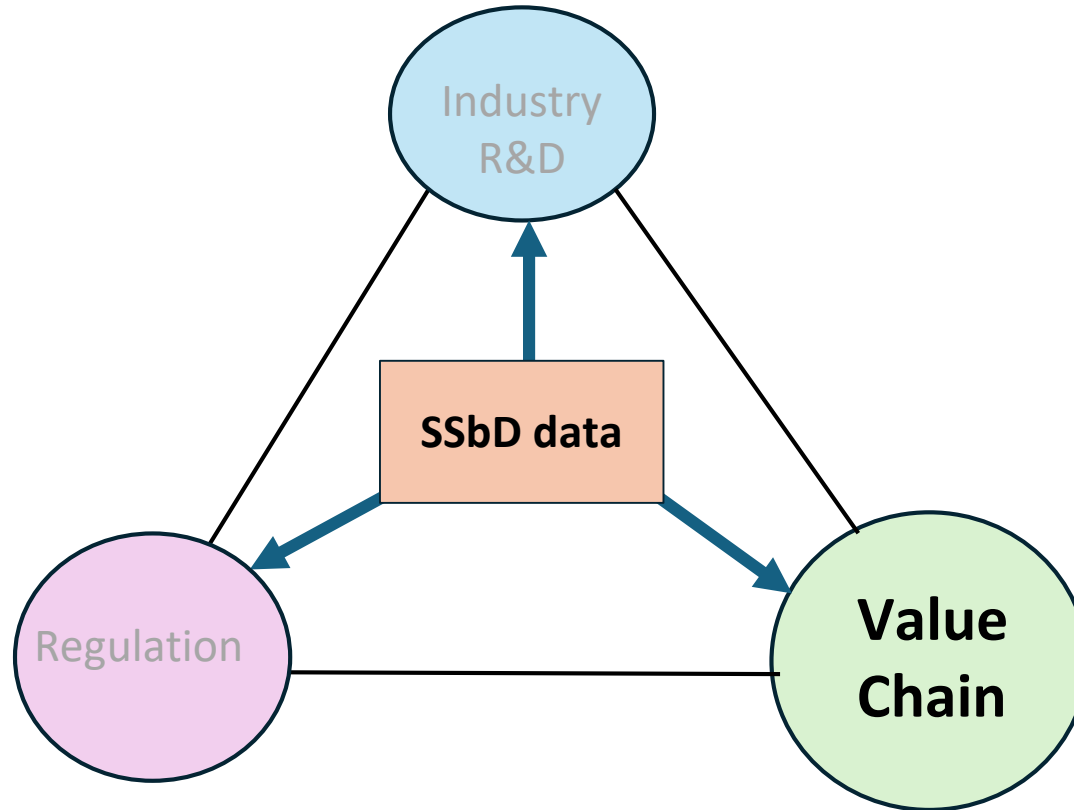


A voluntary approach that generates SSbD data along 5 steps:

1. Hazard Assessment
2. Human Health and Safety Aspects during production
3. Human Health and Environment aspects during the use phase
4. Environmental Sustainability Assessment
5. Social and Economic Sustainability Assessment

# SSbD: the paradigm shift towards... ...a 3-dimensional ecosystem

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SSbD data to inform the value chain stakeholders on the safety and sustainability aspects of the products

- B2B (Digital Product Passport): suppliers, manufacturers, brand owners, logistics, recyclers
- B2C (Eco-Labeling/ Green Claim): Consumers to make responsible purchase with science based and life cycle-based product information.

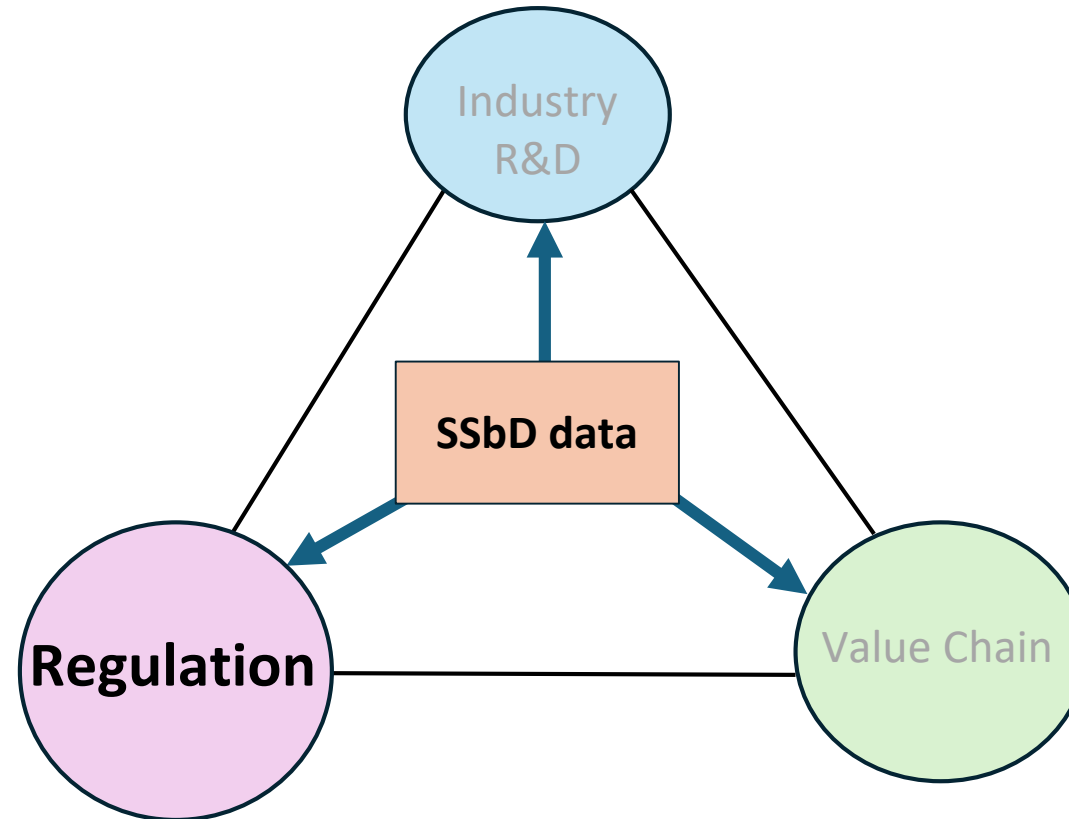


# SSbD: the paradigm shift towards... ...a 3-dimensional ecosystem

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Examples of Key Evolving Policies & Regulations:

- ✓ Eco-design for Sustainable Product Regulation
- ✓ Waste Framework Directive
- ✓ Proposal for Green Claim Directive
- ✓ Corporate Sustainability Reporting Directive



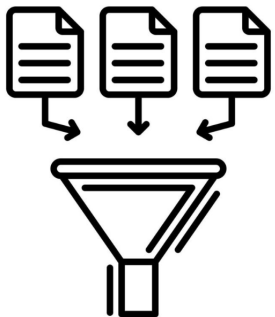
# Some key challenges faced by the SSbD... ...creating new opportunities

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Life cycle thinking along the innovation process requires early sustainability assessment and prospective LCA

-> **Address circularity aspects (recyclability, end of life) early in the R&D process**

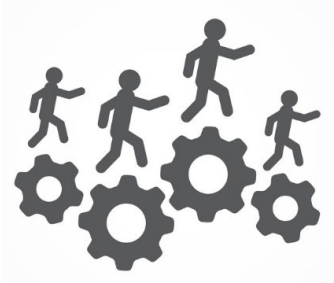


Massive data collection requiring skills for data analysis, data quality, management of uncertainty, computational support

-> **New databases, tools, training**

# Some key challenges faced by the SSbD... ...creating opportunities

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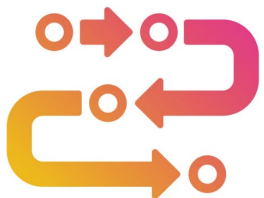
Resource intensive for the industry (e.g., challenge for SMEs)

-> **Business niche for a cost-effective service**



Collaboration of multi-disciplinary team of Safety, Sustainability (Environmental, Social & Economic) and Regulatory experts dealing with interrelated data for safety and environmental assessment

-> **Creativity and silo breaking leading towards efficient use of resources**



Currently an approach, not a detailed methodology, requiring guidance

-> **Opportunity to create standards (on going SSbD standard with CEN/TC352 Nano technologies)**

Develop a **standardized extended LCA approach** along the R&D process to:



Structure, collect and analyse available safety and sustainability data (e.g., qualitative, semi-qualitative, quantitative) along the R&D (e.g., idea, development, launch)



Link **extended LCA indicators with regulation&policy**



- Waste Framework Directive, Eco-design for sustainable product regulation (ESPR). Circular Economy Plan and sector specific (e.g., WEEE, P&PW)
- E.g., Waste reduction, re-usability, recyclability, circularity

# Thank you!

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