



# Samverkansarena 1. Cirkulär produktframtagning i ett uppkopplat samhälle

2023-04-20

Kerstin Johansen med flera, JTH

Emma Hallman, Fagerhult

Joel Johansson, Thule

Forsknings- och utbildningsmiljön:

in:sure – integrated product and production development for sustainability and resilience

# AGENDA

## 13.00 Välkomna

- Kort beskrivning av vår integrerade forsknings- och utbildningsmiljö SE1 "in:sure" (Kerstin)
- Tillbakablick från förra årets SPARK-dag

## 13.15 Erfarenheter av samverkan - axplock

- Joel Johansson, Thule
- Emma Hallman, Fagerhult
- Annika Moscati, JTH
- Gary Linnéusson, JTH
- Kicki Säfsten, JTH

## 14.00 Industriella behov för den gröna omställningen

## 14.30 Vad händer framåt? (Kerstin)

- Forskningsprofil, synergi, utbildning

## 15.00 Avslutning

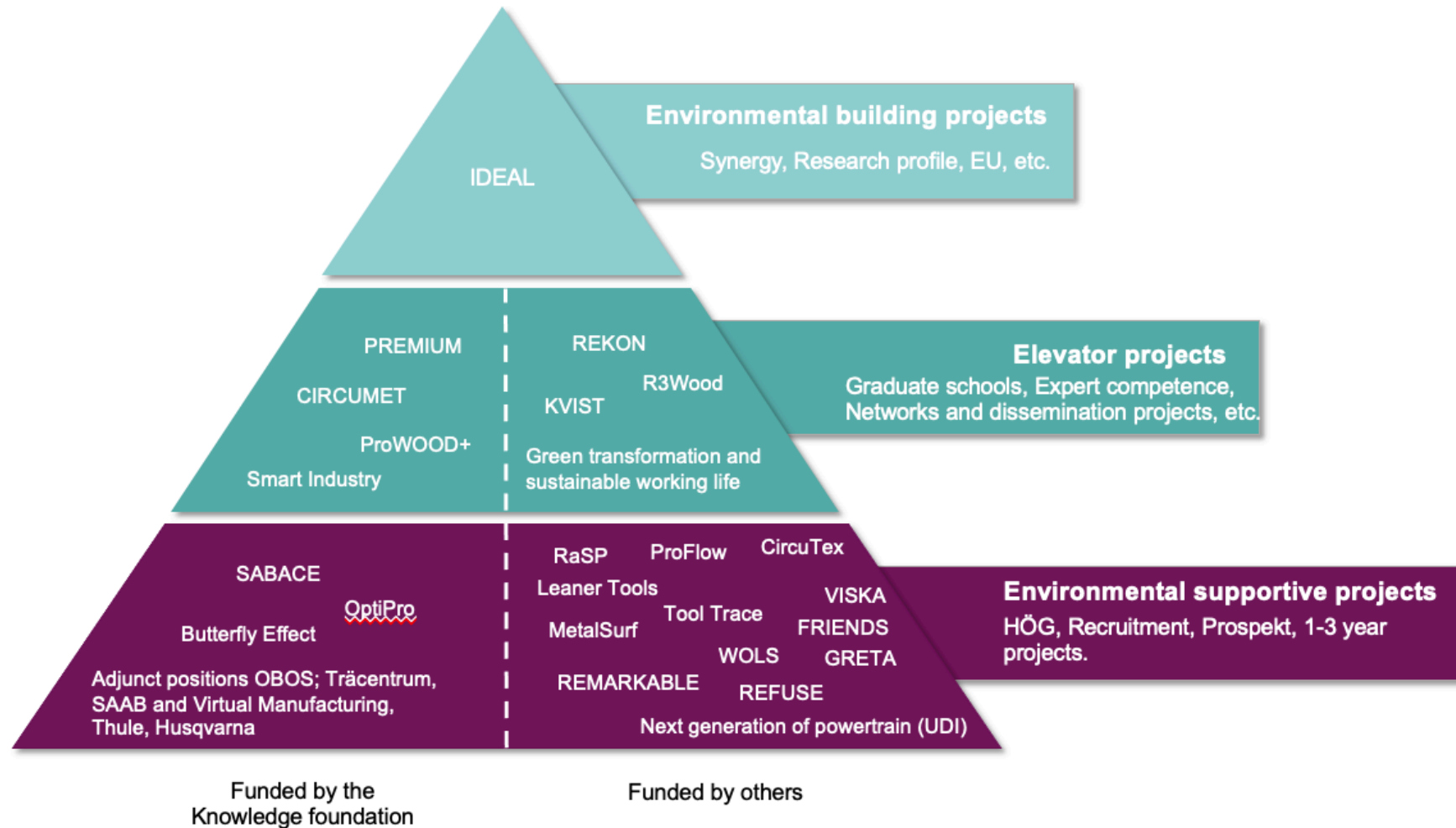


# SE1 ....

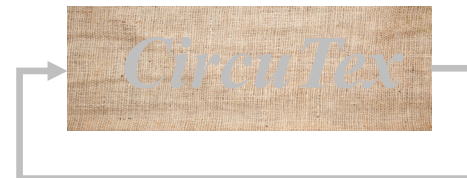
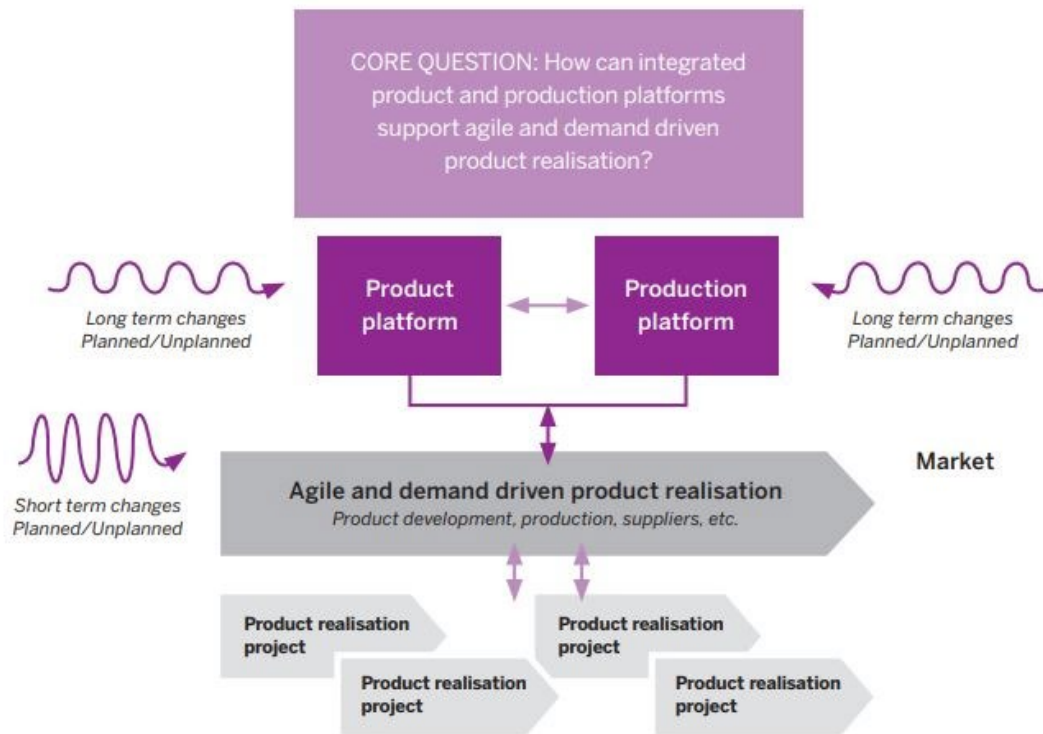
- **... aims at supporting the transition** towards a **sustainable and fully integrated** product and production development process supporting **resilience and circularity** in future products and manufacturing systems.
- **... has the vision** to develop an **integrated research and educational environment** focusing on **integrated product and production development** supporting **life-long-learning** where different stakeholders (i.e. researchers, teachers, SMEs as well as large companies, and research institutes) can **interact and develop knowledge and skills in co-production** for **improved industrial competitiveness** in a society that demands **resilient and sustainable solutions** for the performance, people, planet and products of the future.



# "IN:SURE" – PROJECT PORTFOLIO 2023



# SOME ONGOING PROJECTS



*Analysis of identified needs:*  
Contribute to the twin transition (digital, green) through increased knowledge on integrated product and production development



# RESEARCH WITHIN IN:SURE

Research areas

Competence and knowledge domains	Product design and development	Production development	Technological and organisational integration
<i>Automation and enabling technologies</i>			
<i>Platform planning and development</i>			
<i>Information management and digitalization</i>			
<i>Knowledge management</i>			

## EXPECTED EFFECTS:

Customization  
 Resilience  
 Sustainable production  
 Technology integration  
 Product complexity  
 Product performance  
 Design for circular manufacturing

Regional challenge:  
 Net-zero 2035



# SOME OF OUR PARTNERS IN RESEARCH ...



3BUTTON GROUP



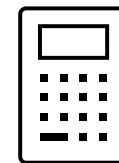
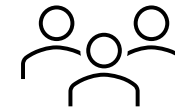
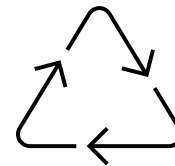
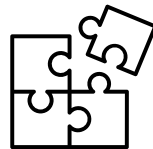
# REFLECTIONS FROM SPARK CONFERENCE 2022 – SE1

- Theme 2022: Sustainable Industrial Development – Climate Transition
  - The four keynote speakers 2022 gave their perspective - and their presentations can be viewed here: <https://ju.se/center/spark/en/events/previous-events/the-spark-conference-2022.html>
- At our session focusing on "The CO2-neutral factory of the future" we were inspired by Jonas Willaredt, Husqvarna and Anna Falk, Falks Metall and their experiences in this transition.
- We discussed a lot of different perspectives and summarized these in a collective activity.
  - We had 3 questions prepared, and due to the engagement, we only managed 2 of those last year

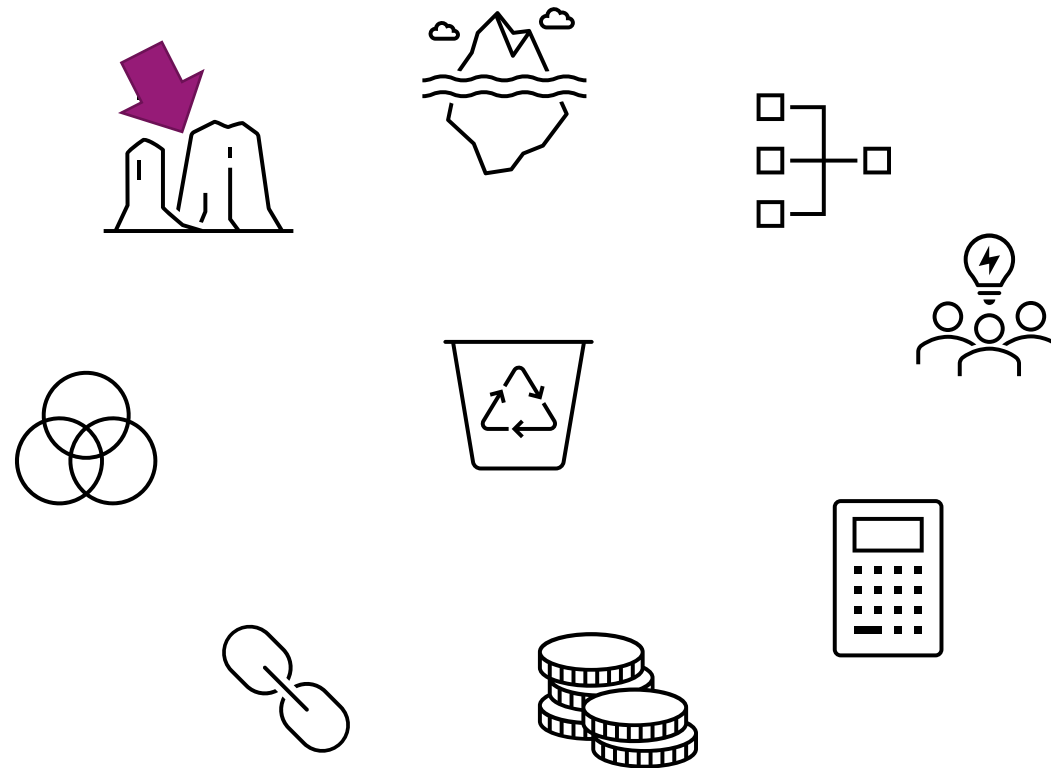




# 2022/Q1: Which challenges do you see connected to "circular economy" for the future products and production systems?



# 2022/Q2: Which industrial risks / trends do you see in the transition towards a CO2 neutral factory / "circular economy"?



# IN:SURE NEWS 2023

- The synergi-project IDEAL has delivered 2 academic thesis'
  - Daniel Hussmo, presented his Licentiate thesis 21<sup>st</sup> of March 2023 entitled "*Exploring boundary objects between product development and production*"
    - <https://hj.diva-portal.org/smash/get/diva2:1737434/FULLTEXT01.pdf>
  - Simon Boldt, presented his Licentiate thesis 14<sup>th</sup> of April 2023 entitled "*Supporting long-term production development – Towards production platforms*"
    - <https://hj.diva-portal.org/smash/get/diva2:1744310/FULLTEXT01.pdf>
- Other in:sure thesis'
  - Shamnath Thajudeen, presented his Doctoral thesis 17<sup>th</sup> of March 2023 entitled "*A product platform approach to support the design phase of industrialised house building: A framework conceptualisation when using mixed production strategies*"
    - <https://hj.diva-portal.org/smash/get/diva2:1736851/FULLTEXT01.pdf>
  - Movin Sequeira, presented his Doctoral thesis 24<sup>th</sup> of March 2023 entitled "*Decision support for multi-criteria evaluation of manufacturing reshoring decisions*"
    - <https://hj.diva-portal.org/smash/get/diva2:1739848/FULLTEXT01.pdf>
- In:sure has started a blog on Vertikals for popular science dissemination related to research results
  - <https://vertikals.se/portal/vertikals/blogs/insure.html>



# ERFARENHETER AV SAMVERKAN - ETT AXPLOCK

# THE INSPIRATION SPEAKERS 2023

**On the theme:** "How collaboration between academia and industry benefits societal development."



Joel Johansson  
Thule



Emma Hallman  
Fagerhult



Annika Moscati  
JTH



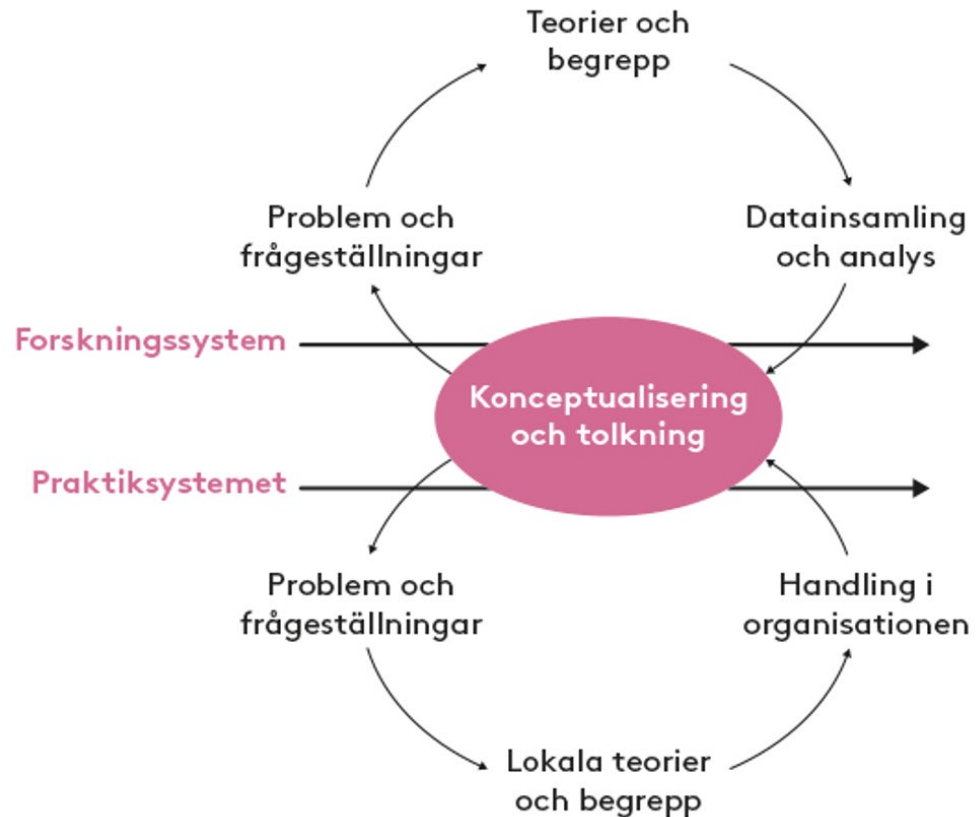
Gary Linneusson  
JTH



Kicki Säfsten  
JTH



# MODELL FÖR SAMVERKAN



FIGUR 4.17 Den interaktiva forskningmodellen (Ellström, 2007).

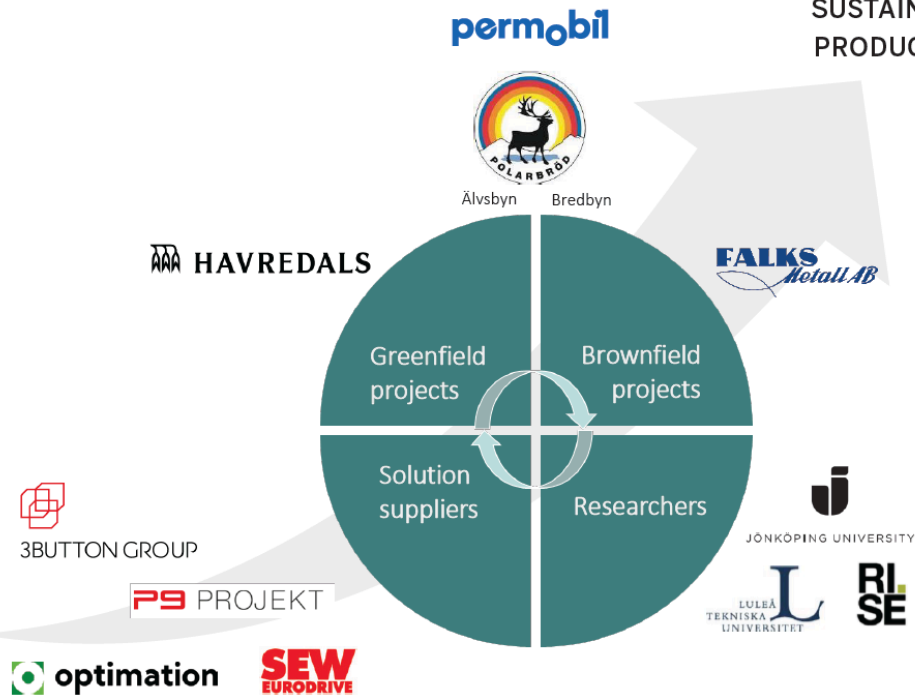


FIGUR 4.16 Forskare och praktikers gemensamma aktiviteter samt olika roller och intressen i en interaktiv forskningsprocess (Svensson et al., 2007).

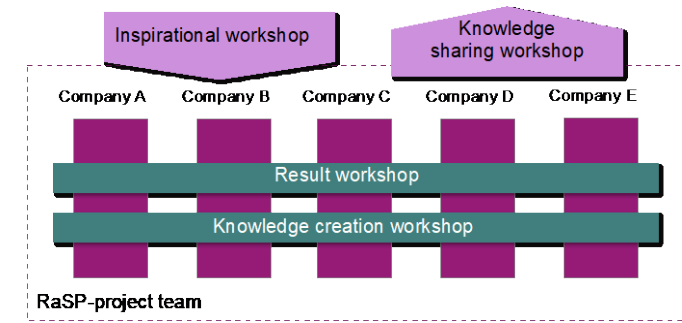


# RESILIENT AND SUSTAINABLE PRODUCTION (RASP) – PROACTIVE GREENFIELD AND BROWNFIELD PRODUCTION DEVELOPMENT

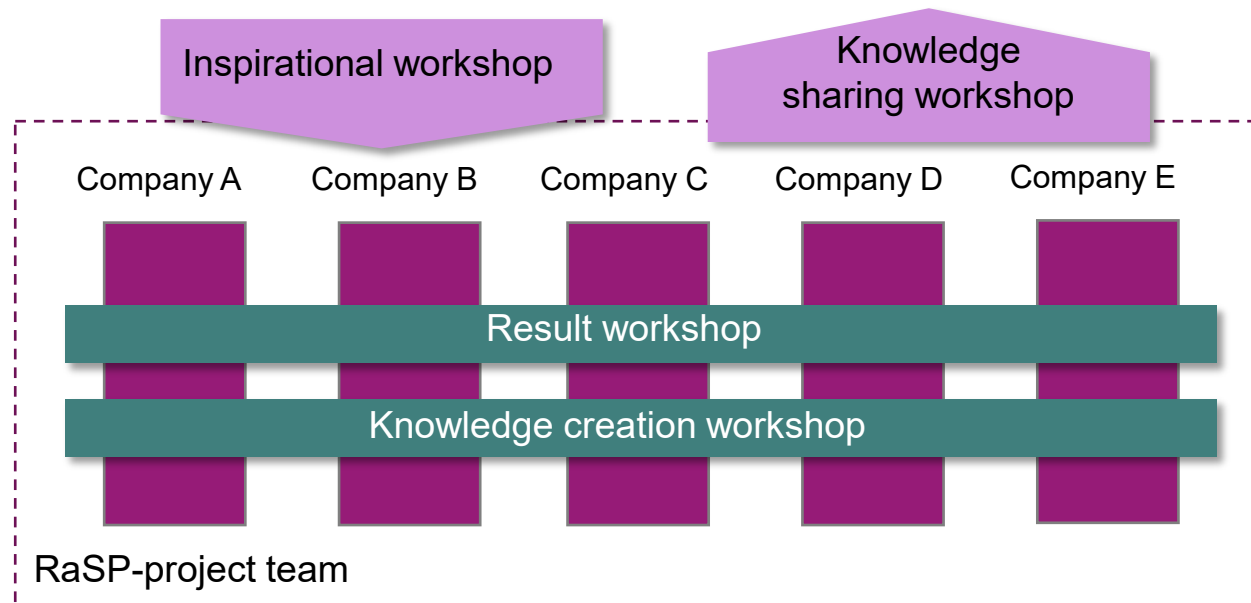
RESILIENT AND  
SUSTAINABLE  
PRODUCTION



Project time: April 2021 – March 2024  
Project budget total: 3 600 ksek  
Funder: Vinnova / SIP – Production2030  
Resources at JTH: Kerstin Johansen (PM), Kristina Säfsten  
Project owner: JTH



# WORKSHOPS WITH DIFFERENT PURPOSE



- *Inspirational workshops* provide food-for-thoughts
- Through *knowledge sharing workshops* results are shared in a broader community.
- During a *result workshop*, results are presented, refined, and validated internally among the project partners.
- Knowledge creation workshops focus on analysis/problem-solving/innovation internally among the project partners.





# MENTI: HUR KAN VI *TILLSAMMANS* GÖRA RIKTIG SKILLNAD?

[www.menti.com](https://www.menti.com)

Kod: 3112 4502



# INDUSTRIELLA BEHOV FÖR DEN GRÖNA OMSTÄLLNINGEN

# CIRKULÄR PRODUKTFRAMTAGNING OCH GRÖN OMSTÄLLNING



<https://unctad.org/topic/trade-and-environment/circular-economy>

PROPOSAL FOR A REGULATION

## Net Zero Industry Act

Proposal for a regulation of the European Parliament and of the Council on establishing a framework of measures for strengthening Europe's net-zero technology products manufacturing ecosystem (Net Zero Industry Act)



Integrated development of products and production

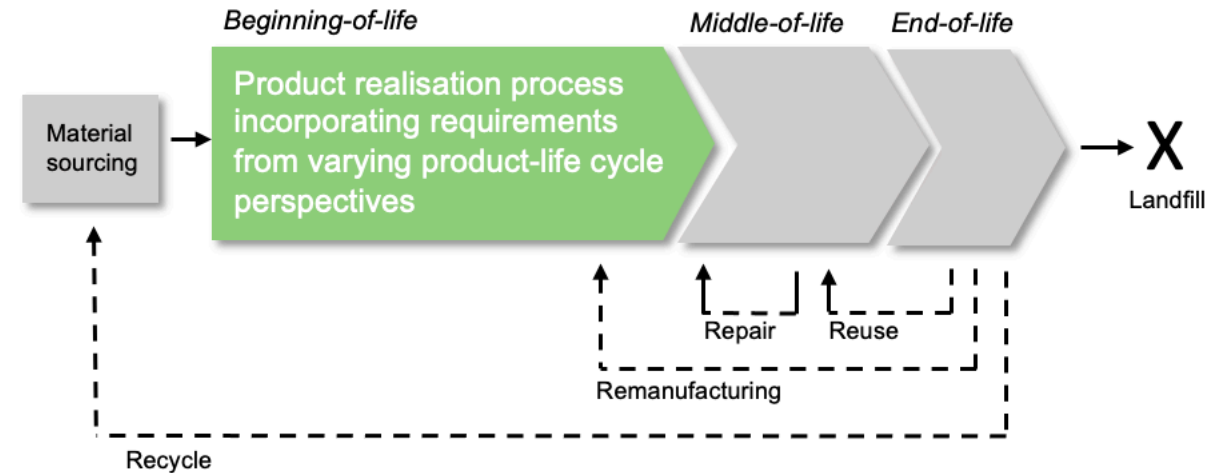
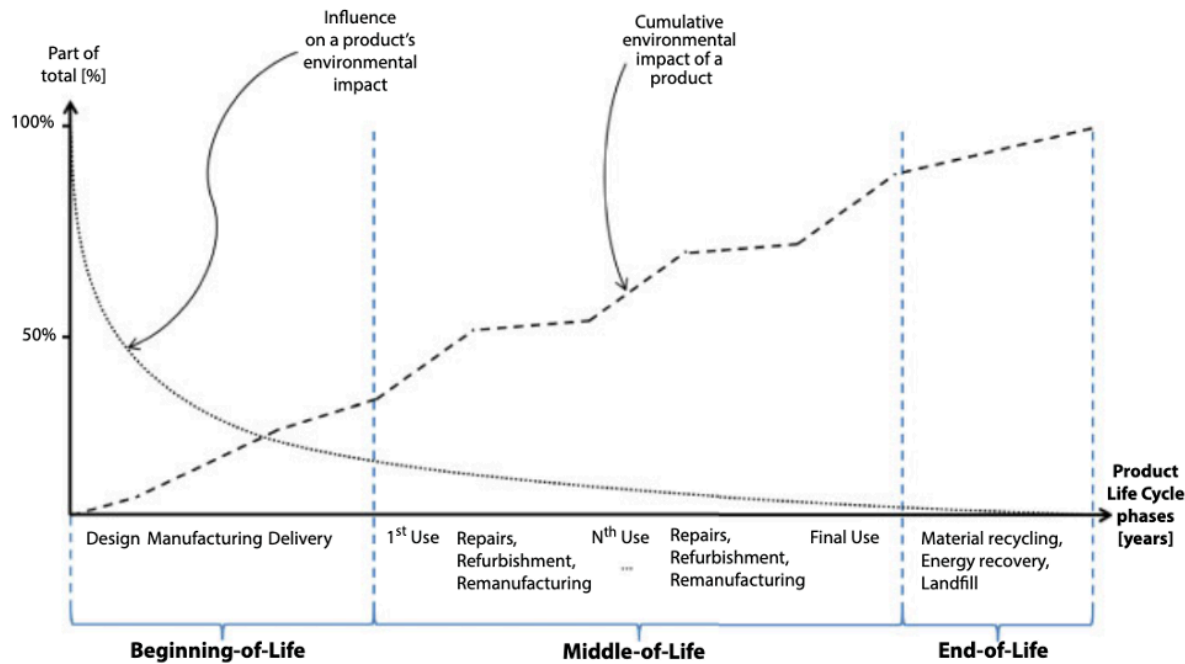


The EU Digital Product Passport shapes the future of value chains: What it is and how to prepare now

Skickades på remiss inom EU  
16 mars 2023

The green transition refers to the shift towards a more sustainable economy, where economic growth is decoupled from environmental degradation. The goal of the green transition is to reduce greenhouse gas emissions, preserve natural resources, and promote economic and social well-being.

# VILKEN ROLL SPELAR UTVEKLING AV PRODUKTER OCH PRODUKTIONSSYSTEM?



HUR KAN VI BIDRA? MENTI....



# MENTI- FRÅGOR

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- Menti.com
- Code: 3112 4502



# VAD HÄNDER FRAMÅT?

# INTEGRATION OF RESEARCH AND EDUCATION

- Our ambition as well as activities are striving for developing an innovative and integrated education and research arena in JTH Labs
- Started with a **project course** during the autumn 2022
  - The course is placed during fall, before the master thesis project.
- Example of results here around us.

Some important keys:

Preferable integrated projects that has a connection to ongoing research

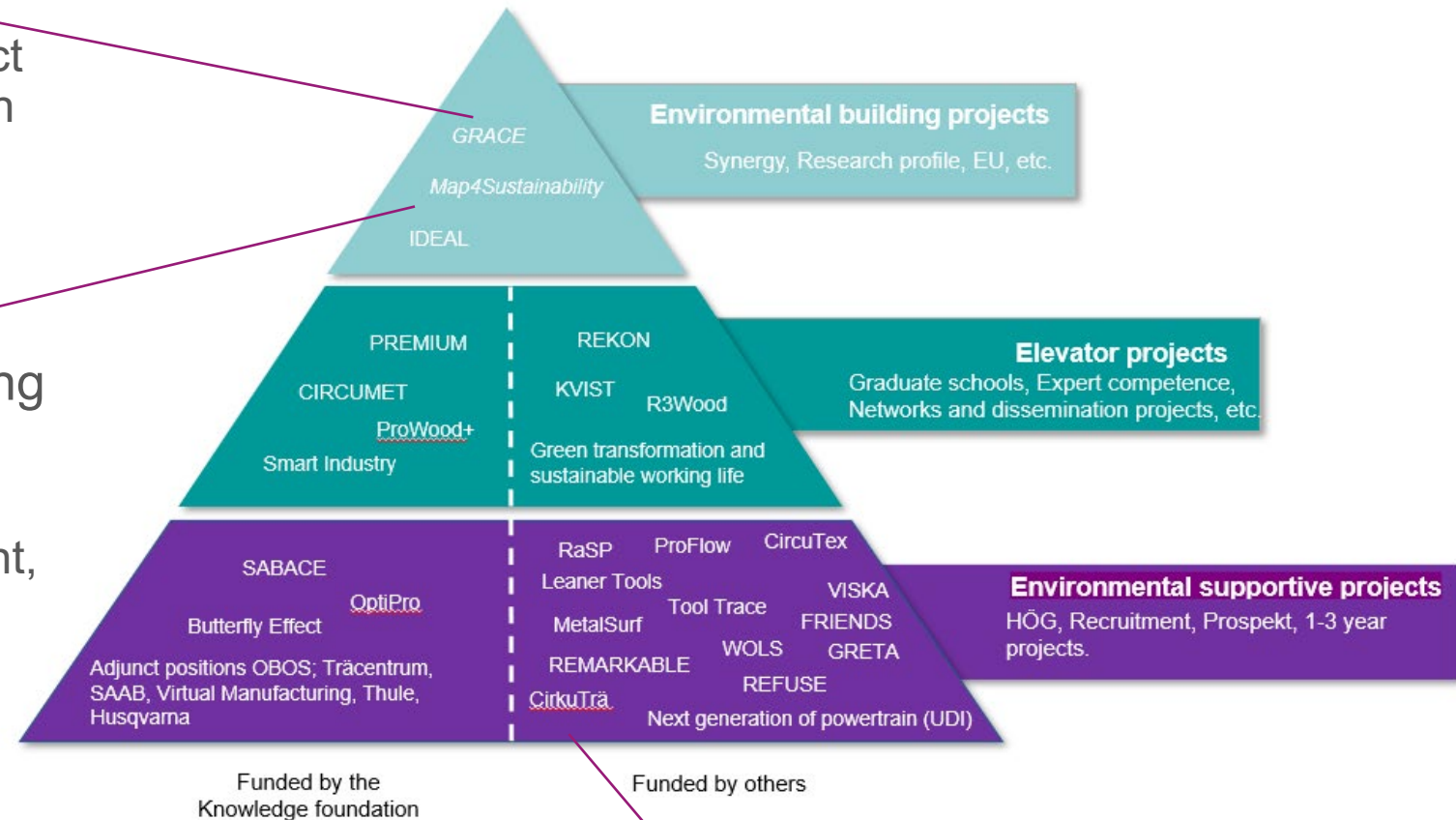
Different projects so the students can get a broader view of industrial challenges

Characteristic of the projects – integrated product and production development



# ONGOING LARGER INITIATIVES (examples)

- GRACE – research profile
  - Fredrik Elgh, Kicki Säfsten at Product development, Production and Design with colleagues
- MAP4Sustainability – Smart Housing Småland project to prepare for a synergy project
  - Peter Johansson at Built environment, with colleagues



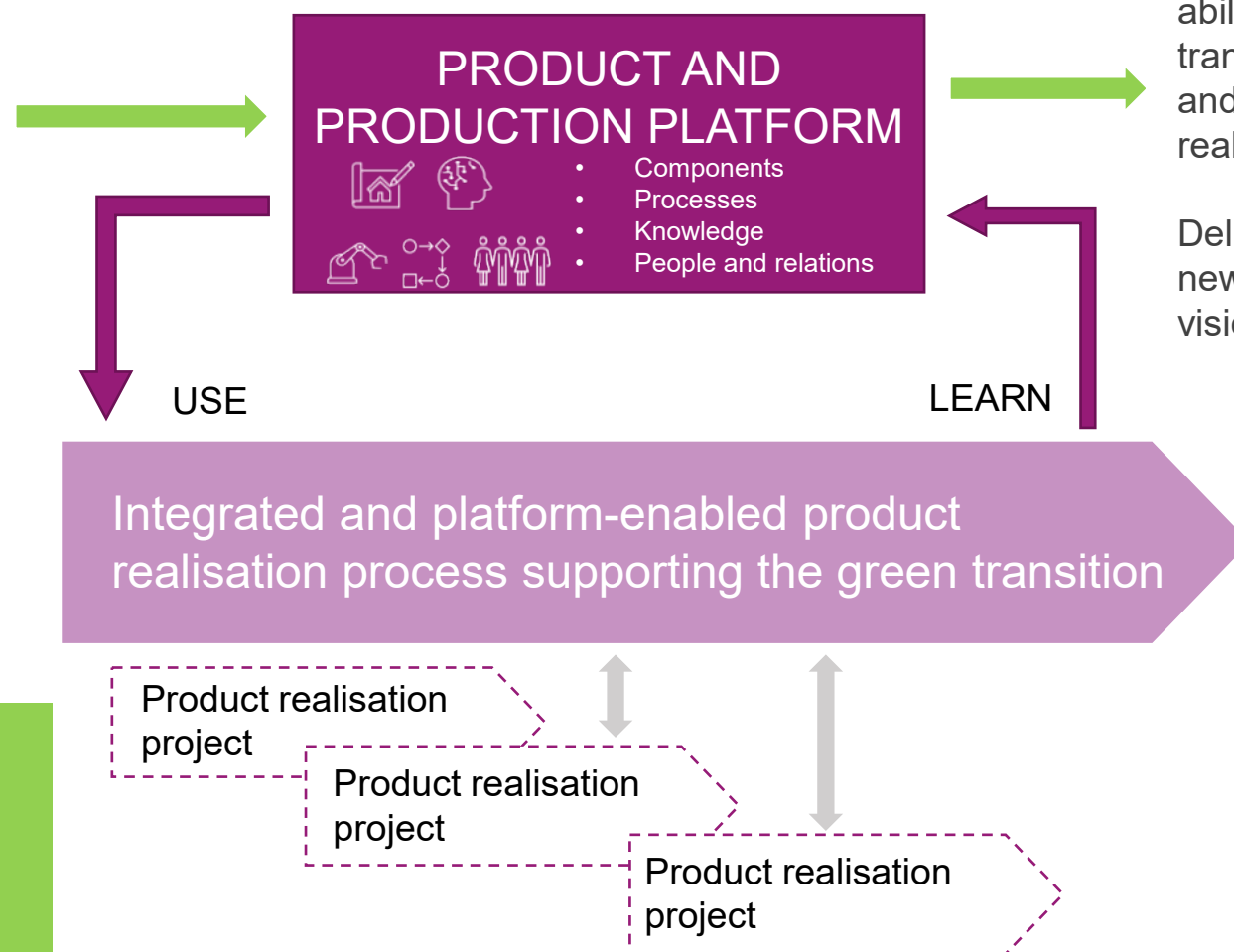
CircuTrä startar sen höst 2023 och finansieras av Kampradstiftelsen





# GRACE: GREEN ACCELERATION THROUGH INTEGRATED AND PLATFORM-ENABLED PRODUCT REALISATION

The research profile aims at creating technical and organisational solutions that can be used in product realisation projects to support the green transition.



New knowledge and long-term ability to support the green transition through integrated and platform-enabled product realisation.

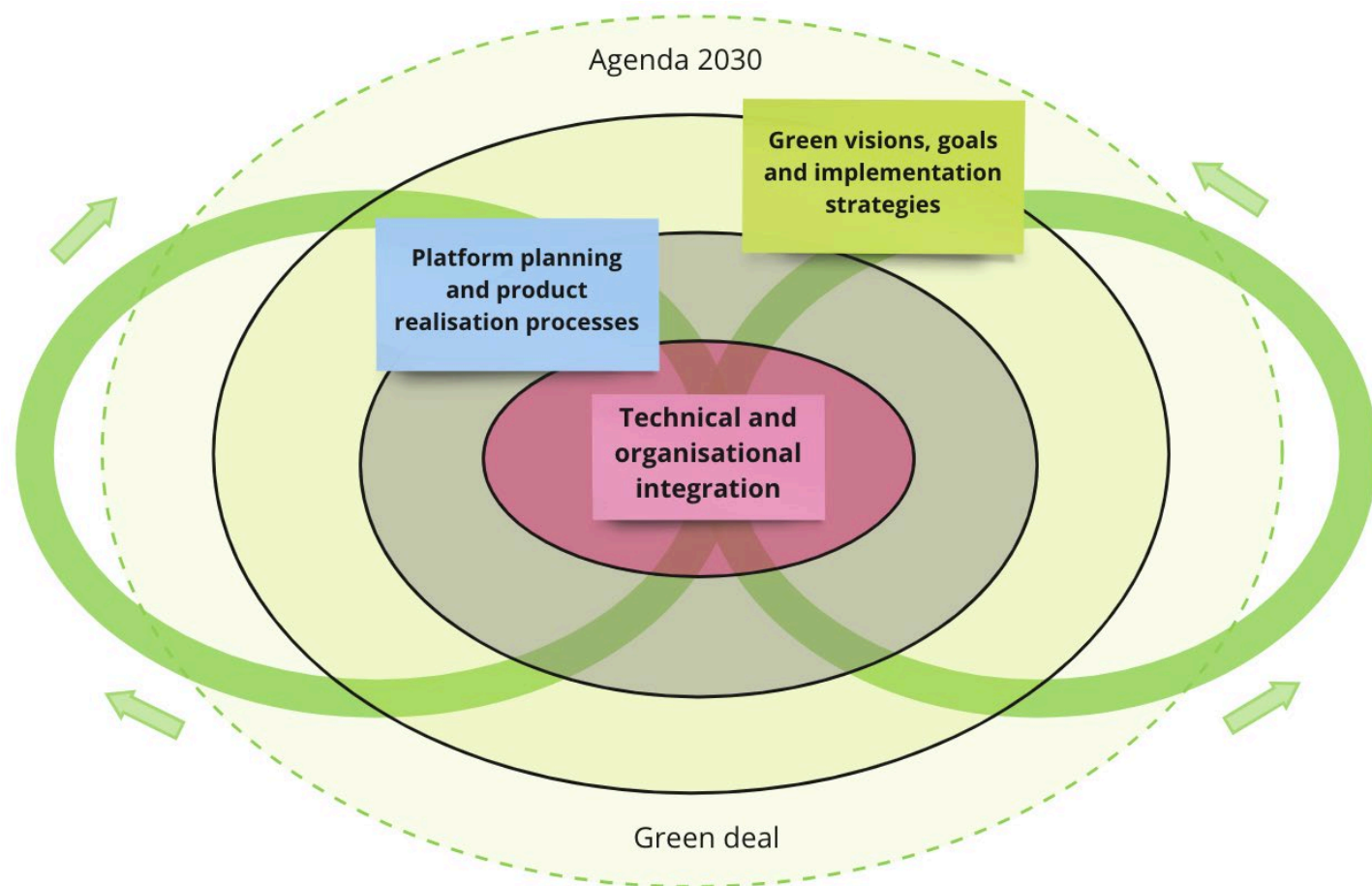
Deliverables: methods, tools, new ways of working, joint vision towards green transition.

The manufacturing industry is an essential actor for the fulfilment of the Paris agreement, the Sustainable Development Goals (SDGs), circular economy policies, environmental regulations, etc.

The green transition refers to the shift towards a more sustainable economy, where economic growth is decoupled from environmental degradation. The goal of the green transition is to reduce greenhouse gas emissions, preserve natural resources, and promote economic and social well-being.

Overcoming the challenges associated with the green transition require collaboration, innovation, and a commitment to sustainability from all stakeholders in the industry.

# GRACE: GREEN ACCELERATION THROUGH INTEGRATED AND PLATFORM-ENABLED PRODUCT REALISATION

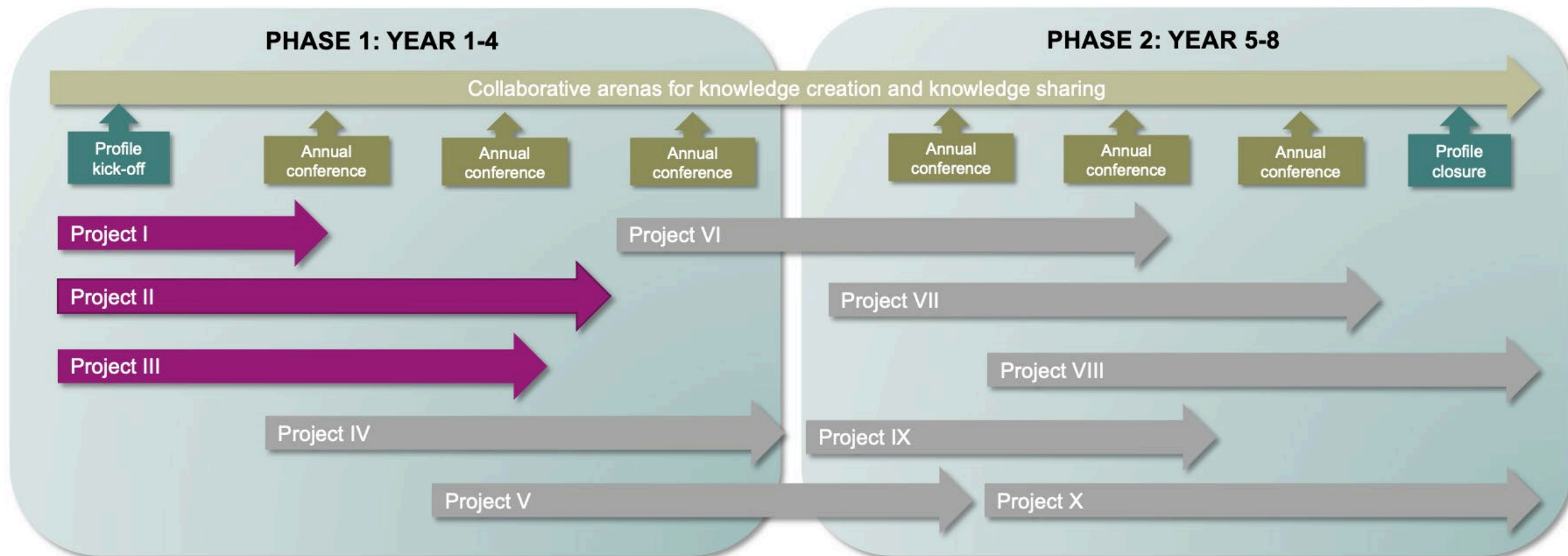


We want to develop long-term ability to support the green transition through integrated and platform-enabled product realisation.

“Integrated” implies that cross-functional and cross-organisational collaboration is supported, technically and organisationally.

“Platform-enabled” implies that strategic assets (Components, Processes, Knowledge, People and relationships) are reused across products and processes to support minimal usage of resources while maximizing customer value.

# GRACE RESEARCH AGENDA



# VILL DU SAMVERKA MED OSS I UTBILDNING ELLER FORSKNING?

Kontakta oss i  
in:sure!



Kerstin Johansen  
in:sure leader

[kerstin.johansen@ju.se](mailto:kerstin.johansen@ju.se)

Har du lämpliga projektuppgifter för studenter?

Vill du vara med i pågående satsningar – profil och synergi?

Har du idéer för nya projekt?



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