

# Centres of Excellence in Research and Innovation A management perspective

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# Content

- Management can have different scopes
- The program management perspective at VINNOVA-Sweden.
- Some highlights
  - Impact logic and implementation
  - Mission research and innovation leadership
  - Strategic career in strong R&I Milieus

# Management perspective

- The policy level (government/board of VINNOVA/Universities/Industries)
- The program level (VINN Excellence Center et al)
- The center level
- The project level

# The view from VINNOVA and the managers level

# Investments in Strong R&I Milieus

- Other Vinnova-program
- RC
- SSF
- EU 7RP
- Structure-fund
- etc



- Pre center investments
- Berzelii centra
- Vinn Excellence centra
- Industry Excellence centra
- Institute Excellence centra
- Sectors-motivated centra
- Vinn Growth



- Other Vinnova-program
- RC
- SSF
- EU 7RP
- Structure-fund
- m.fl.

Research School (VINNPRO)

Strategic collaboration between milieus and individual female qualification (VINNMER)

Global links for strong research and innovation milieus

Exchange/support of experiences for leader & board members

Tiger – gender program to improve the gender issues in strong milieus

Evaluation, impact analysis and innovation research

International exchange of experiences and benchmarking of program management and development  
e.g. CREST, COMPERA ERA NET & resent STRATA-Multi Actors Multi Purpose Programmes

# From a management point of view its important to understand that.....

- there are many different types and reasons of Centers on the Global Arena
  - From very virtual /networking to physical entities
  - Each region/country have different reasons/history to put up centreprogrammes/centres – build up infrastructure/techtransfer/entrepreneurial capacity/new institutes/attract international companies/recruitment of “higher education”, support new/SMEs/old industry
  - Changing culture/behavior in interaction
  - Industry driven / research driven – industry follow academy or vv, regional/national forces/ Push/PULL
  - Bigger –focused – faster - more open global competition –EU-World
  - The goals select the “success” indicators – selection of indicators gives the goals (of a programe)

# Nordic Centres of Excellence in research (NCoE)

Microcomparative syntax

Systems biology in controlled dietary interventions

Cognitive control

The Nordic welfare state

Disease genetics

Biosphere-aerosol-cloud-climate interactions

Empirical labor economics

Reassessing the Nordic welfare model

The dynamics of ecological systems

Water imbalance related disorders

Bioactive food components

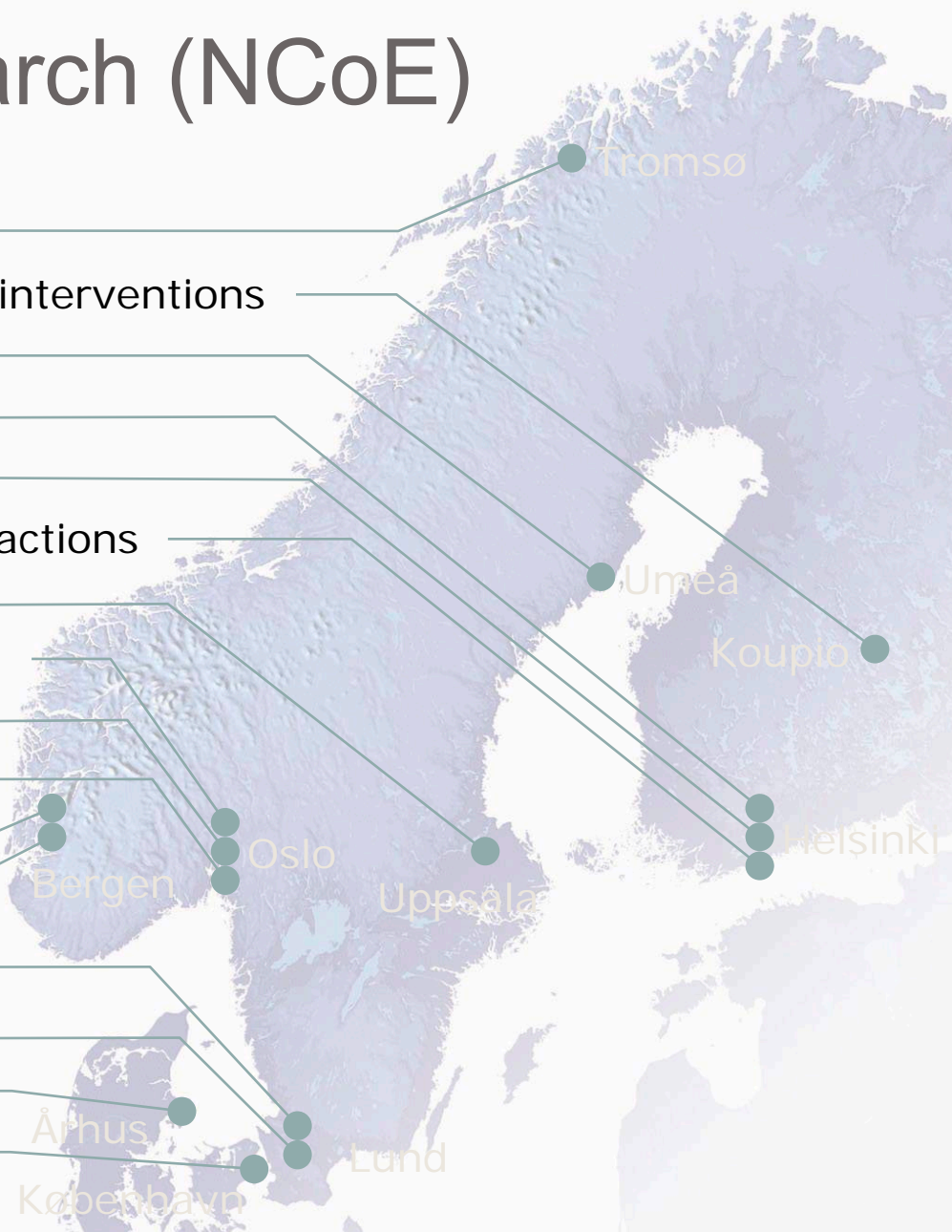
Medieval expansion of Europe

Ecosystem carbon exchange

Neurodegeneration

Luminescence research

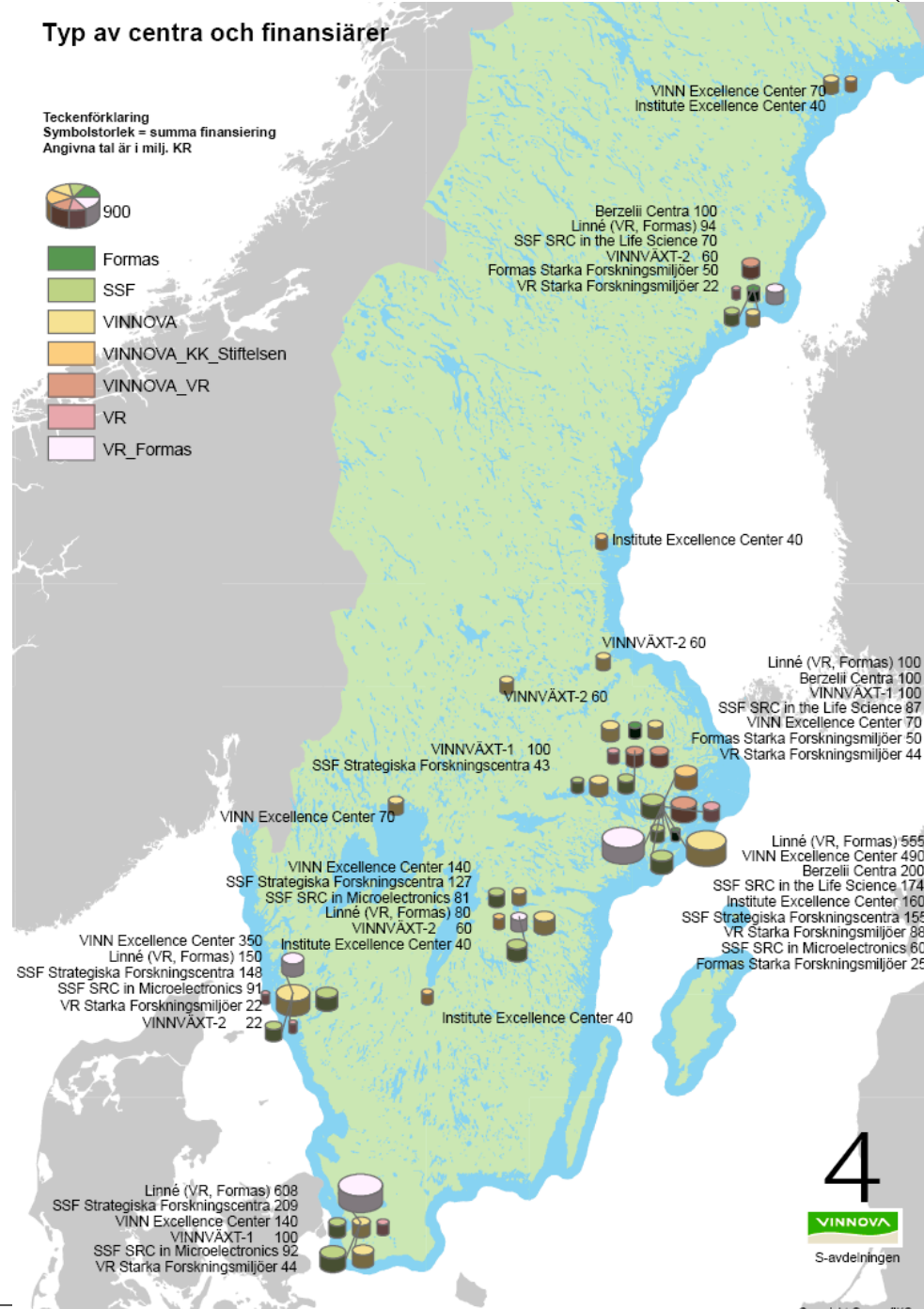
Health – Wholegrain food



# Centers of Excellence in Research & Innovation

- 5 main funding agencies
- 20 receivers (org)
- Total appr €650 million, 5-10 y
- whereof 65 % for 10 year
- Additional investment from industry et al appr € 300 5-10 y

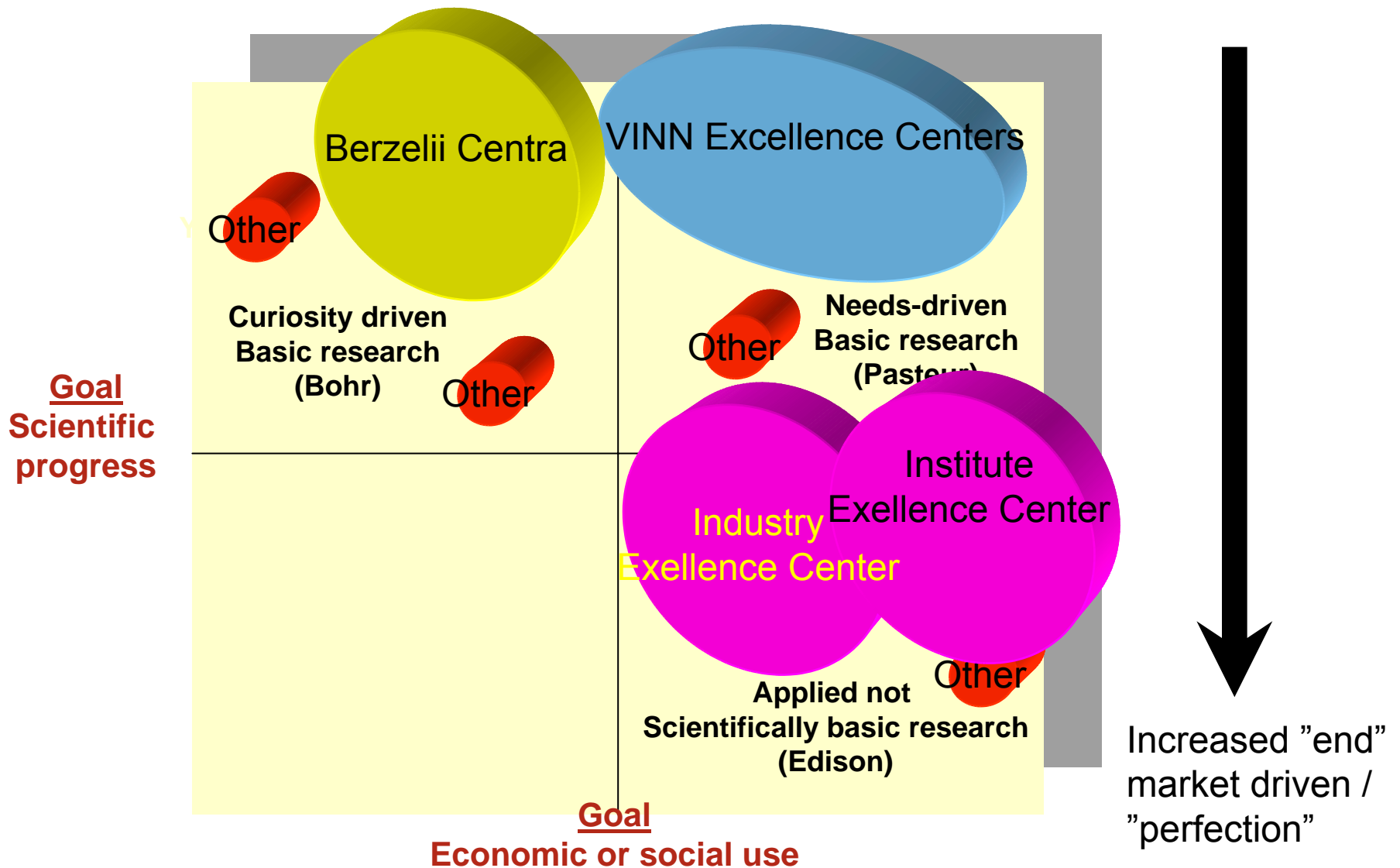
Source: VINNOVA/CIND



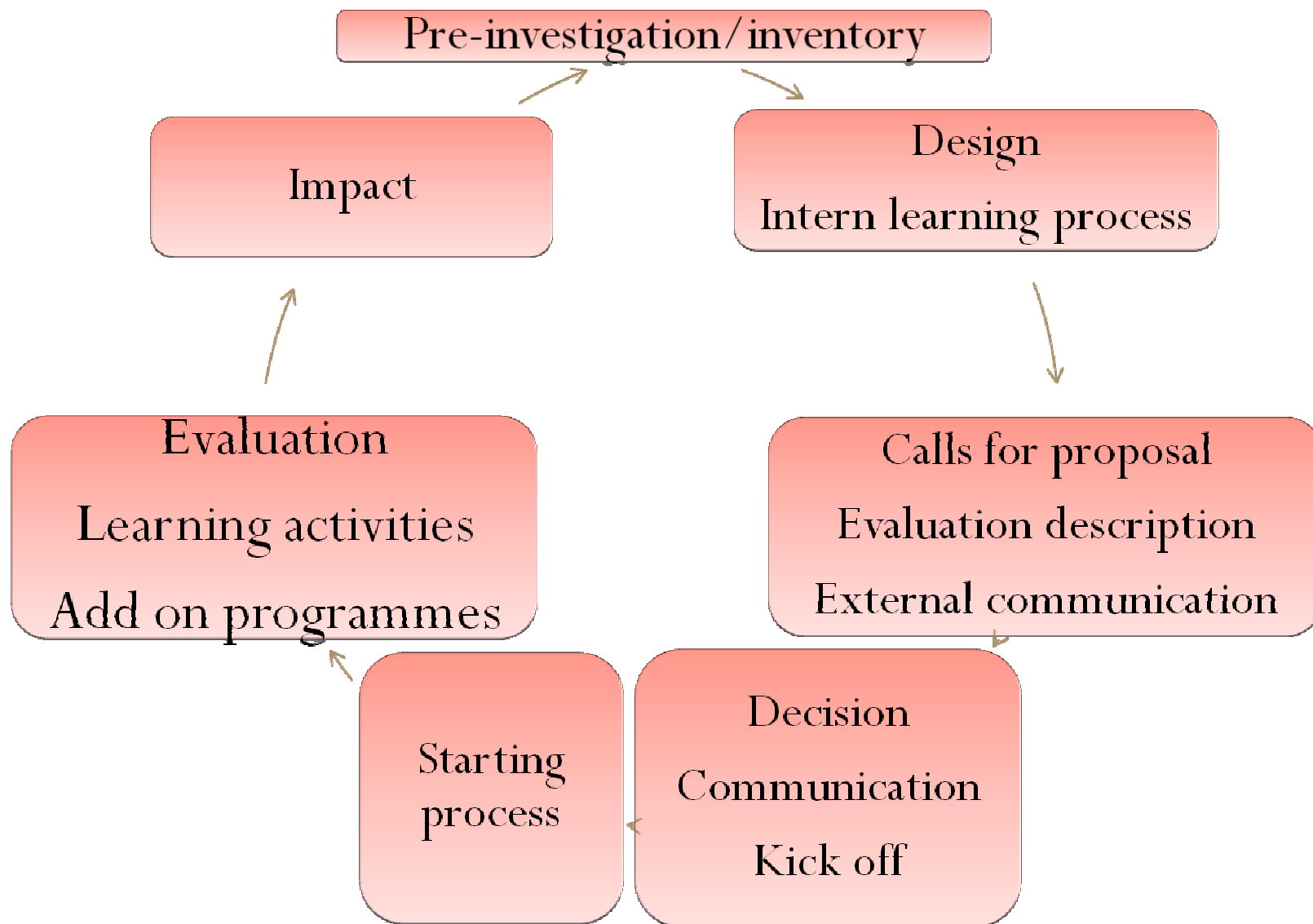
# Attract different types of partners

- Berzelii Centra  $\approx$  10 % SME
- VINN Excellence Center  $\approx$  20 % SME
- Institute Excellence Center  $\approx$  30 % SME
- Winn Growth  $\approx$  50 % SME

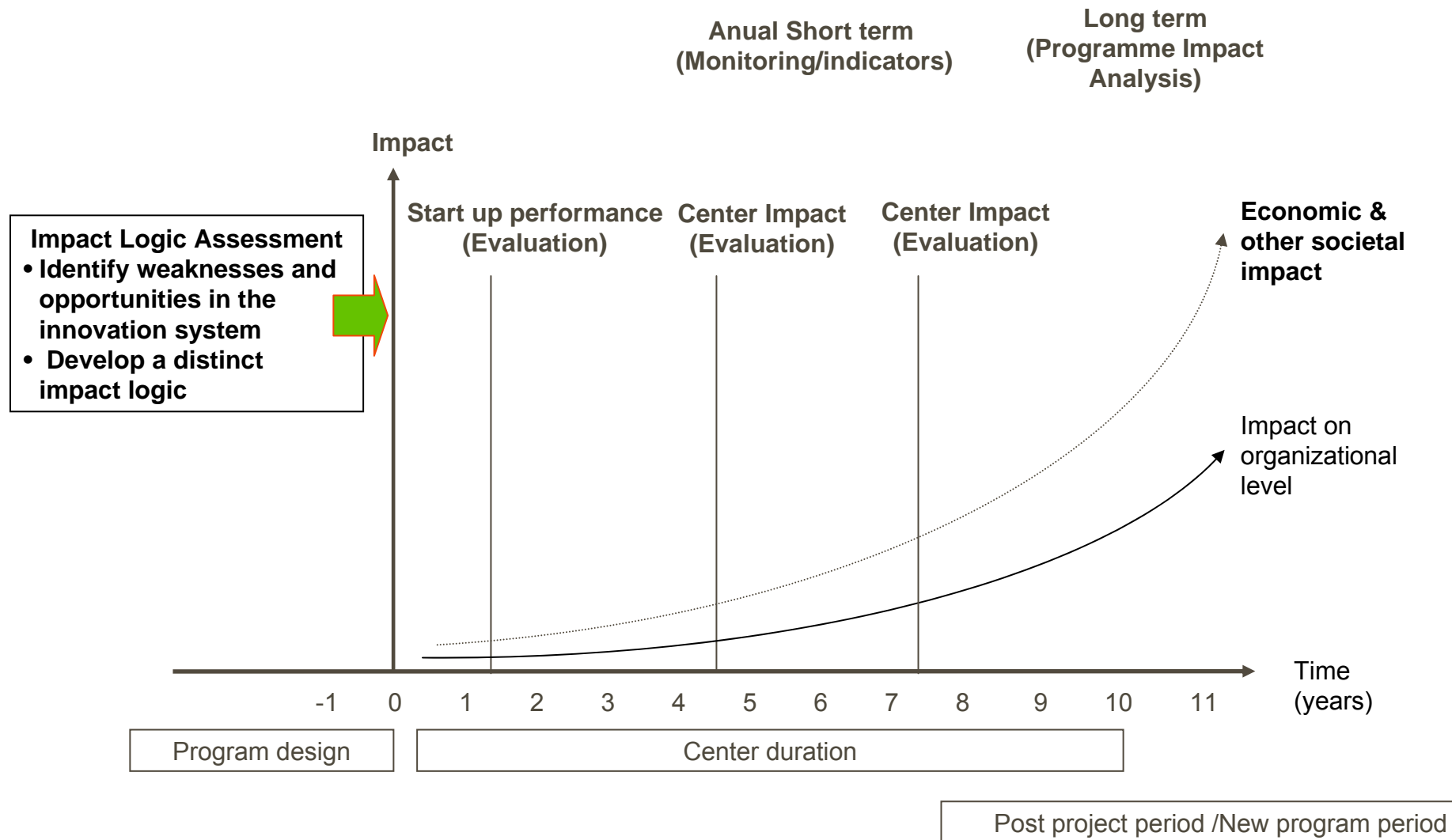
Positioning of CRCs is crucial to understand the type of impact and time perspective we should expect



# Management value chain



-The goals select the “success” indicators – selection of indicators gives the goals



# Mission Impact Logic

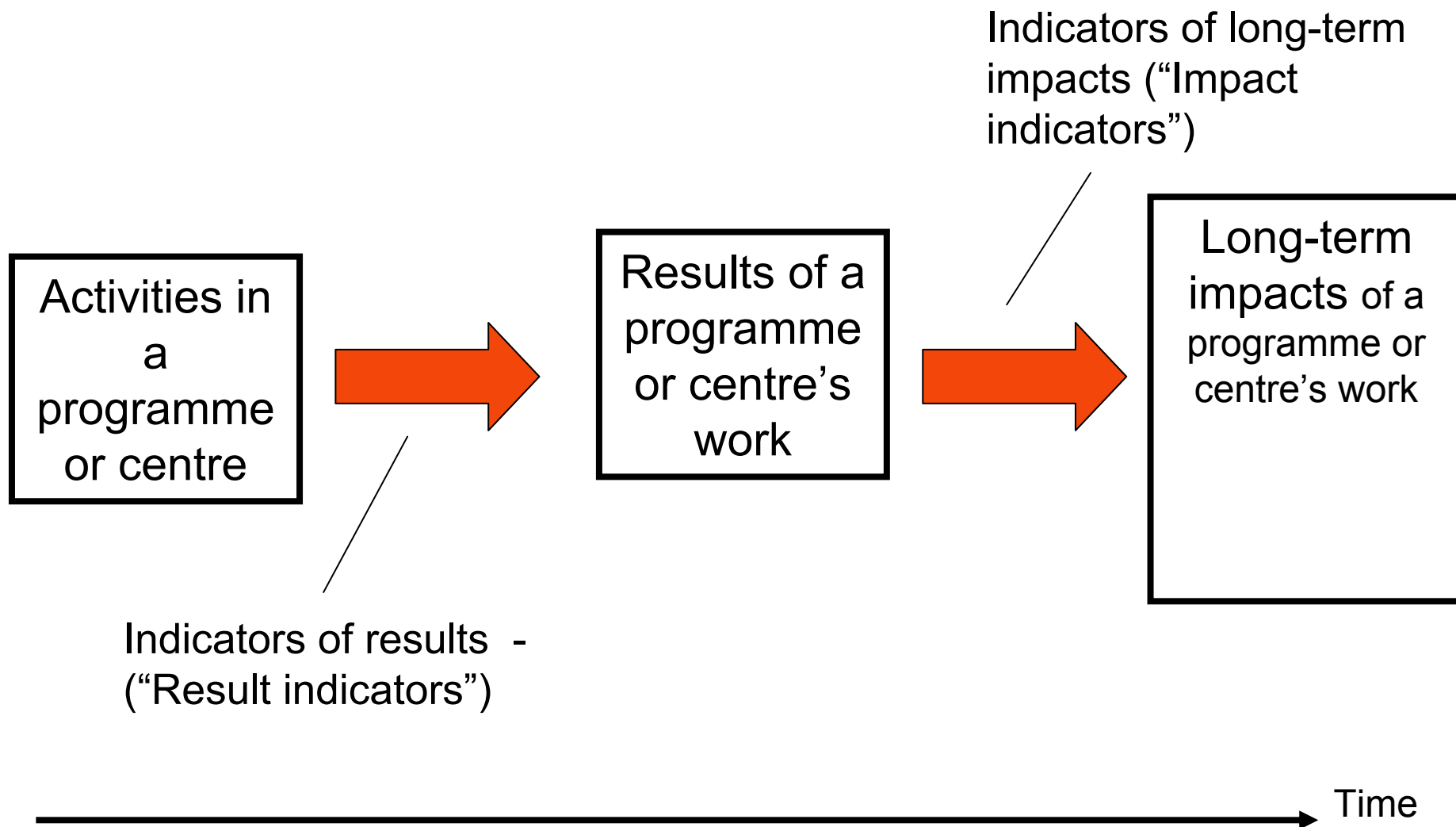
# The process of impact logic

- Why
- How & What
- When

# The questions can be

- How much will the taxpayer get value for the investment (if any)?
- How much will the industries/public partners/academies get value for money?
- How will all the centres jointly demonstrate that the goals laid out in their 10-year operational plan have been achieved?

# Simplified impact logic



# Needs profile

	Type of need	Target group
Internal	Support for development/learning / information	Centre leadership, partners and board Prog. leadership/management Evaluators
External	Communication/ Marketing	New partners Universities leadership Internationalisation VINNOVA Politicians/Decision makers Policy entrepreneurs*

\* = other research financiers, industry representatives, university researchers, EU officials OECD lobbyists etc.

# RESULT AND IMPACT INDICATORS

## Result indicators

## Impact indicators

- Number of published articles relevant to the centre\*\*  
Of which in:
  - Periodicals /conference contributions with referees
  - Conference contributions
  - Other articles/popular scientific journals/trade periodicals
- Number of co-publications with industry relevant to the centre
- Initiatives for international collaboration begun by the centre within that centre's field of operation
  - Of which with CoEs or internationally
- Total number of APPROVED applications for international projects within the centre's field of operation:
  - Of which projects in the EU's framework programme
  - Of which as coordinator of projects in the EU's framework programme
  - Of which other collaborations within Europe
  - Of which with the rest of the world

- Number of R&D assignments within the centre's field of activity, of which from:
  - Swedish companies/actors (not partners)
  - Foreign companies/actors (not partners)
- New collaborations with other mediums
  - Of which international
- Number of new partners within the centre's field of activity (including volume)
  - Of which foreign companies/public partners

- A number of industrial doctoral students\* (men/women) within the centre
- Number who have defended their theses within the centre
  - Of which licentiates (men/women)
  - Of which PhDs (men/women)
- Number of guest lectures by the centre's partners in doctoral/basic training
- Incidence of shared posts/time shared between the centre's partners (universities-industry), adjunct professors etc.
- Number of degree theses

- Number of press cuttings about the centre
- Number of hits on leading Internet-based search engines (Google, MSN, Yahoo)
- Number of visits to the centre's website
- Volume of additional funding for the centre's activity
- Number of events / workshops/training efforts/ seminars
  - Of which only for centre's partners
  - Of which open to the public
- Centre's funding as a proportion of total budget at the educational establishment
- Equality throughout the centre and change over time - age structure
- Gender aspects at the centre

- Research leaders from industry/public sector/academia
- Number of research leaders who have completed leadership training at the centre
- Volume of financial resources/people invested in companion research/inventorying needs
- Number of people active from academia/industry, public sector – number of people and number of full-time equivalents
- Number of research groups
  - Universities
  - Institutes
  - Universities other than host university

- Applications for trademark protection/patents/copyright associated with the centre's activity
- Number of spin-off companies
- Number of spin-off companies with activities originating in the centre's field of activity (spin-offs)
- Number of strategic decisions (including initiation of new projects) by partners in the centre resulting from knowledge obtained at the centre
- Number of projects initiated in companies/public partners not financed by the centre and which are a result of the centre's activities

- Citations per published article
- Number of new products and processes based XX% on knowledge from the centre
  - Of which new to the company
  - Of which new to the market
- Number of exams/degree theses etc.
- Estimated value per year of efficiency/process improvement based on knowledge from the centre
- Turnover from new products and processes (based on knowledge from the centre)
  - Of which new to the company
  - Of which new to the market
- Value of market advantage to the new product/process/service due to centre's activity
- Number of approved patents/new patents

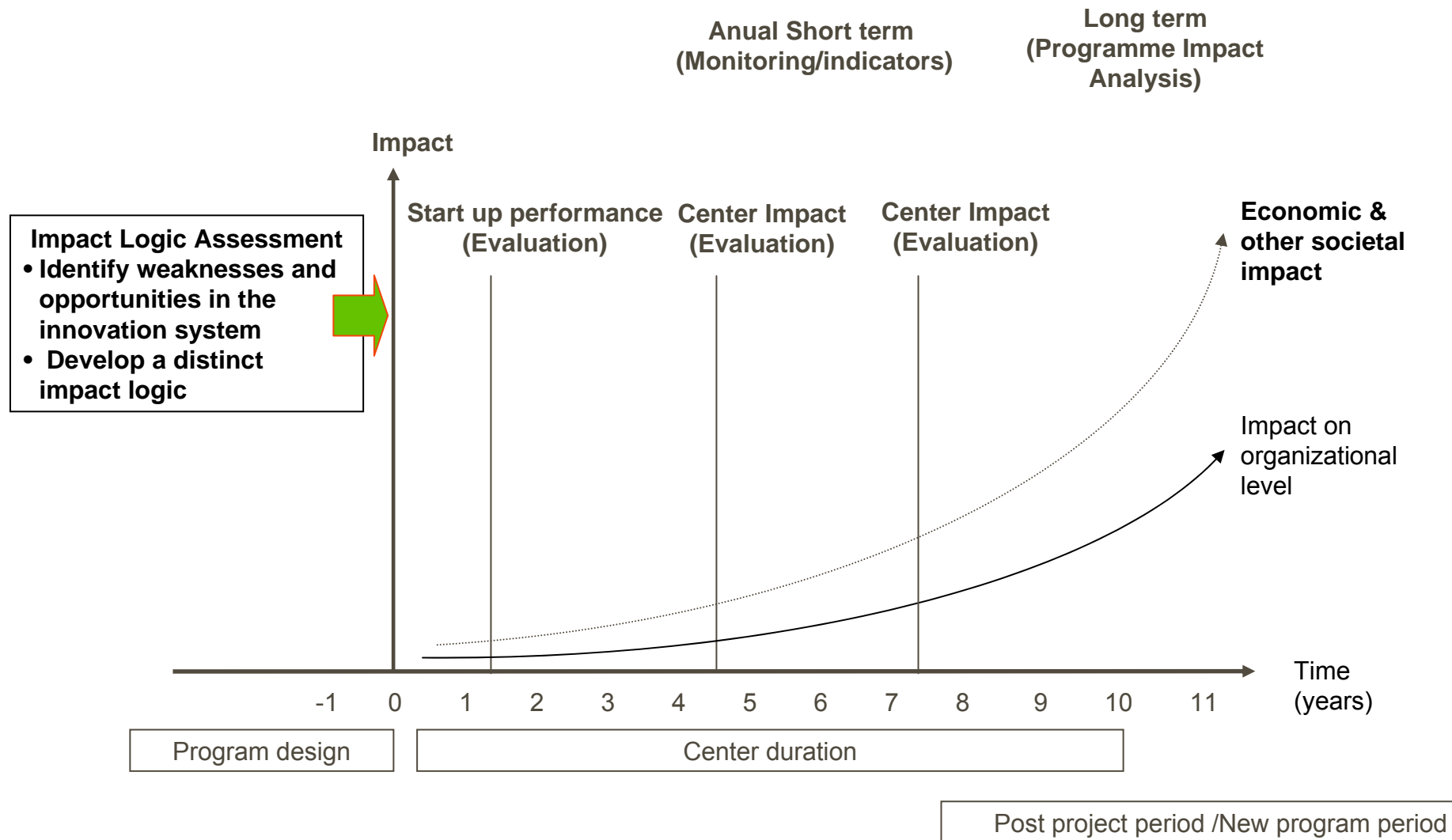
- Number of new bilateral assignments from companies active in the centre and placed outside of the centre's activity
- Income volume of these projects
- Number of new projects initiated by the actors at the centre resulting from new knowledge in the centre and placed outside of the centre
- Number of shared services between partners in the centre (shared working hours, universities-companies)
- Number of people in the centre who have been active/temporally employed at other CoEs or recruited to the centre
  - Of which in Europe
  - Of which in the US
  - Of which in Asia
- Recruitment of personnel from academia/industry to industry/academia, connected with/due to the centre's activity
  - Of which recruitment from overseas
- Number of completed international R&D projects
  - Of which EU projects
  - Of which as coordinator in EU projects
  - Of which outside the EU's framework programme
  - Of which with majority partners outside Europe

- Growth figures in spin-off companies from the centre (growth rate as number of employees, turnover)
- Sales revenues upon disposing of spin-off companies
- License revenues based on knowledge from the centre (patents)

Research dimension

Innovation dimension

-The goals select the “success” indicators – selection of indicators gives the goals



# Mission

## Research and Innovation Leadership

# Goal

- Increase Centre Directors' capacity to lead their operations. Thereby increased centre output.

The initiative goal is to:

- provide a reflection and advanced learning process on individual leadership
- advance and develop knowledge of the art of leading CRCs through experience-sharing in practice and theory
- Increase the awareness of the dialog inside and outside and our expectations

# Process



# New Directors



Tom Lindström

Lars Hultman

Krister Holmberg

Li-Rong Zheng

Jan Grahn

Ingmar Karlsson

John Ågren

Rickard Söderberg

Ove Nilsson

Fredrik Nikolajeff

Jukka Lausma

Inger Björck

Lennart Karlsson

Kristina Höök

Per Gunningberg

Hans Forssberg

Ann-Marie Hermansson

Charlie Gullström

Amelie Eriksson Karlström



Margareta Friman

Annika Stensson

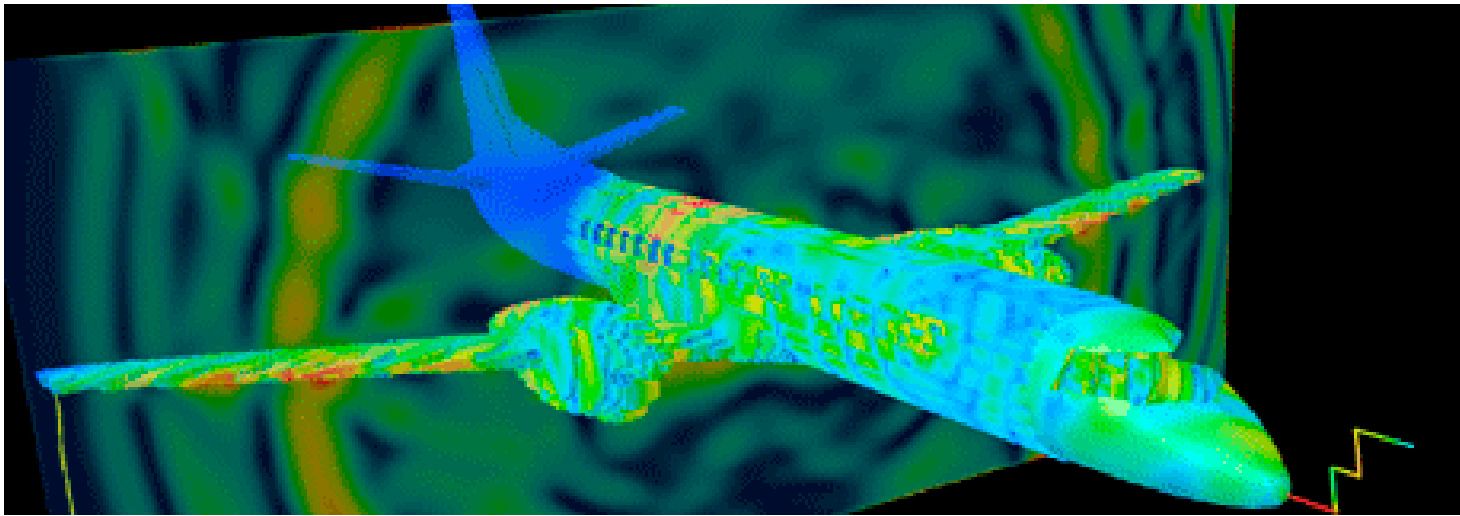
Mats Johnson

Per Erik Ellström



Xiaodong Zou

# Strategic career in strong R&I Milieus



## **VINNMER – strategic collaboration between milieus and individual female qualification**

- Individuals from abroad to Sweden or vice versa!
- ½ salary during 3 years + additional costs for mobility
- 2007 – 2014, TOTAL €60 M;  
€30M/25 /5 from VINNOVA/milieus/EC
- 23/19 individuals are today using this career - opportunity on an international/national level respectively
- [www.VINNOVA.se/VINNMER](http://www.VINNOVA.se/VINNMER)

# Summary

- Exploitations of tools for success, e.g. career, impact logic, gender, learning etc etc
- Commitment/pressure on the host/surroundings are greater today
- Public partner involved in larger extent
- More stakeholder in CRCs in Sweden/EU/World
- Higher “programme” competition VINNOVA/Sweden/EU
- More co-ordination at VINNOVA/Sweden/EU

Thank you!

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