



Next Generation Innovative Logistics



# NGIL

## Next Generation Innovative Logistics VINNX Competence Center At Lund University

**Teknisk Logistik  
Produktionsekonomi  
Förpackningslogistik**



# Historia

- Sten Wandel och Patrik Ryden lämnade in en intresseanmälan från Öresundsregionen som svar på ett call från VINNOVA, 2003.
- Klartecken för att lämna in en ansökan om ett VINNX center inom innovative logistik, skickades in nov 2004. Arbetsgrupp med folk från Teknisk Logistik, Produktionsekonomi och Förpackningslogistik. 3 workshops hölls med företag som lämnat in Letter of Intent.
- April 2005 meddelades att Lund hade fått ett av fyra VINNX center.
- Kick-off september 2005.
- Första styrelsemöte december 2005. Ledningsgrupp och föreståndare engageras.
- Anställning av doktorander börjar mars 2006.
- Första forskningsprojekten beviljadas april 2006.



# Objective VINNX center

- A VINN Excellence Centre is a long-term research partnership between universities, private enterprises, public sector actors and VINNOVA.
- A university is the host for each centre. When researchers from different disciplines, departments and research institutes collaborate with networks of companies and public sector participants, the result is a vigorous environment for research and innovation.
- Participation by companies means that the research is focused on problem areas that are both relevant to industry and scientifically challenging, and whose results will benefit business.
- This will create new knowledge and technologies, leading to new products, processes and services.



# Key points

- Promoting sustainable growth by generating new knowledge and new technologies that will lead to new products, processes and services.
- Multi-disciplinary research in partnership between business, the public sector, universities and other research organisations. The aim is to work towards finding optimal solutions to major problems facing the participants.
- Research programmes designed and carried out jointly by the participants.
- Geographic focus by having a university or college as the organisational centre, thus forging closer links to researcher education and undergraduate studies.
- Long-term partnership, with extensive stagebystage evaluations, in order to achieve effectiveness and international excellence.
- Joint long-term financing by business / the public sector / universities and vinnova in order to recruit, foster and retain world-class skills.
- Activities run by a managing director and a board, where the contributing parties can align the direction of research with the needs of business and the public sector.
- Activities set up in innovation environments and effective innovation systems that result in powerful Centres of Excellence in Research and Innovation.



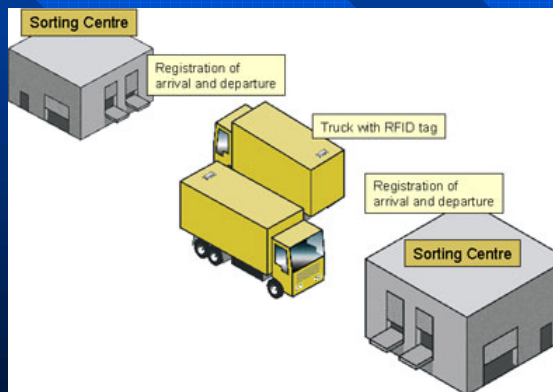
# NGIL Objectives

- Develop and implement innovative logistics knowledge, processes and products
- Further leverage the strong research groups' specialties by multidisciplinary projects
- Create a demand-driven research atmosphere where research is initiated by industry and public sector
- Create an intense collaboration between industry, public sector and academia
- Leverage the innovation environment established in Lund (e.g. Ideon) and the Öresund area



# Some arguments for NGIL activities

- Eliminate missed shipments
- Eliminate shipment discrepancies
- Improve profit margins by inputting more accurate and timely data into optimization tools
- Enable the reduction of inventory carrying costs
- Support customers' efforts to reduce inventory investments
- Significantly reduce product returns
- Improve customer satisfaction
- Improved delivery reliability
- Improved efficiencies in your customers receiving operations



# Challenges

- Industrial cluster integration
- Immediate market response
- Capacity management
- Material Management – substitute information for inventory
- Collaboration and Visibility
- Supply Chain Risk management
- Process orientation
- Rapid new product introduction



# Partners

- Bioett
- CeLIT
- DFDS Transport
- Frigoscandia Distribution
- Port of Helsingborg
- ICA AB
- Lindab
- MA-system in cooperation with Pipe Chain
- Region Skåne
- REXAM
- SCA Packaging
- Svenska Tullverket
- Volvo Car in cooperation with Volvo Logistics
- .....



# Styrelse

- SCA Packaging, **Per Arfvidsson**
- ICA, **Anders Lundmark**
- Bioett, **Bengt Sahlberg**
- DFDS Transport, **Gabriel Andersson**
- CeLIT/Helsingborg, **Sten Åke Tjärnlund**, ordf
- Volvo Car Cooperation, **Urban Bjöörn**
- Production Management, **Johan Marklund**
- Engineering Logistics, **Andreas Norrman**
- Föreståndaren är adjungerad



# Resurser

- 210 miljoner över 10 år
  - 1/3 från medlemsorganisationerna
  - 1/3 från Lunds Universitet
  - 1/3 från VINNOVA



# Focusområden

- Visibilitet i försörjningskedjan
- Riskdelning i försörjningskedjan
- Flexibel logistik
- .....nya områden i framtiden bestäms av NGILs partnerorganisationer



## Research topics

	Visibility	Risk sharing	Adaptive logistics	New research topics
Engineering Logistics				
Production Management				
Packaging Logistics				
Öresund Logistics				



# Knowledge dissemination

News-letter

Seminars

Study visits

Academic conferences

Work-shops

Journal articles, Dissertation

Cross company project

Master thesis

Vinnova/NGIL financed PhD project

VIRA

Company financed PhD project

Academy driven studies

Company driven project

Industry PhD-student

Industry Development

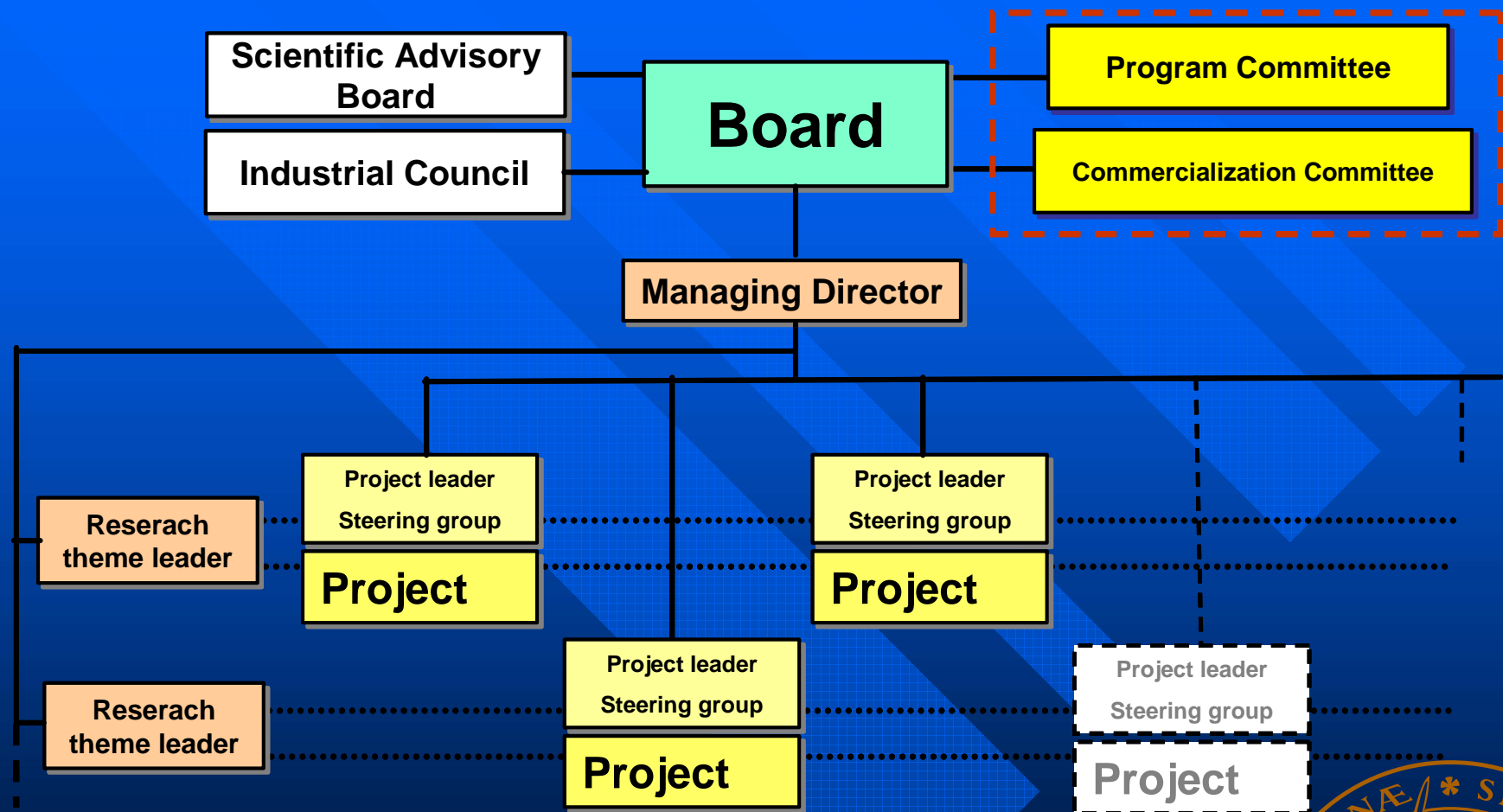
Knowledge generation

Academic Research

Consultancy

Education





# Programme committee

- Bereder projekt som styrelsen skall besluta om
- Medlemmar utses av företagen  
(forskningsinriktade representanter)
- Även akademien är med i denna komite
- Kan tillsätta en grupp för att vidareutveckla ett  
inlämnat projekt förslag



# Industriråd

- Referensgrupp för enbart industrirepresentanter
- I detta forum kan företagen diskutera samarbeten och egna ideér till projekt
- Öppet för alla partnerorganisationer



# Scientific advisory board

- Stanford
- MIT
- Säkerställer det vetenskapliga arbetet ur ett internationellt perspektiv



# Commercialization Committee

- Utvärdera framkomna idéer – går de att kommersialisera
  - Lunds Universitets Holding bolag LUAB
  - Företagsrepresentanter



# Examples of research projects

- *Supply Chain Risks and Risk Sharing Instruments*
- *RFID for visibility in the supply chain*
- *Supply chain collaboration/VMI: How and when?*
- *SecureFlow: Handling Antagonistic Risk in Logistic Flows*
- *Software Supply Chain Management*
- *Purchasing Practices of Environmentally Preferable Transport Services*
- *Improving Procurement Performance with E-business Mechanisms*
- *Supply Chain Integration through Performance Measurement*
- *Logistical Principles in Construction Supply Chains*
- *How can increased information about where items are in a supply chain improve its inventory control? Where should we keep inventory and how much?*
- *How can advance information of future demand be used to substitute inventory in distribution systems?*
- *How to manage inventories of perishable items?*
- *Technology and methods needed for efficient traceability*
- *Transparency in the food supply chain*
- *Smart packaging in the logistics chain*
- *Adaptive logistics – using complexity theory to facilitate increased effectiveness in logistics*
- *Integrated packaging, logistics and product development*
- *Exploring the Potential of Using Radio Frequency Identification Technology in Retail Supply Chains*
- *Horizontal environmental assessment for supply chain and logistics management*



# *Decided Research projects*

- Barriers and driving forces for increasing Supply Chain Visibility: impact of business models and incentives
- SC 2025 Identify and analyze factors that are critical to the success of the supply chain 2025 from a northern Europe perspective.
- Simulation models for increasing Demand Chain Visibility
- Alignment and development of inventory management methods applied in industry in a context characterized by increasing visibility and agility



# *Membership levels*

- *A-level*
  - *A minimum of 1.000' in cash/year*
    - Be part of the Board of Directors
    - Can specify a research project that also involves other partners
    - Can have a PhD student working with only this project
    - Can be the “owner” of a research project
    - Can start up new research areas
    - All workshops and seminars are free, no limit
- *B-level*
  - *A minimum of 500' in cash/year*
    - Will form a reference group with other gold companies around a specified research project.
    - Can take part in reference groups
    - Can open new research areas
    - All workshops and seminars are free for up till 5 people from the partner
- *C-level*
  - *In kind contribution minimum 100 hours/year + minimum 20' in cash/year*
    - Will take part in research with providing case studies at companies
    - Can take part in reference groups
    - Can hand in proposal for the research agenda
    - All workshops and seminars are free for up to 2 persons from the partner
- *D-level*
  - *Minimum 20' in cash/year*
    - Only newsletter and access to the open part of [www.NGIL.se](http://www.NGIL.se)
    - Can attend open workshops and seminars for half price.



# Competence centers and affiliation program we are connected to

- European Supply chain forum
- Stanford global supply chain forum
- MIT
- Michigan State University
- MIT-Zaragoza Logistics Centre
- Öresund Science Region
- Hong Kong Logistics Forum

**NGIL belongs to the inner circle of the logistics front line**



# Potential NGIL activities

- Newsletters
- Study visits
- Broad seminars
- Focused workshops/round tables
- Academic conferences open for industry
- Explorative Master thesis
- Company driven project
- Cross-company project
- Academy driven studies
- Visiting Industry Research Associate
- Industry Ph.D-student
- Company financed PhD or faculty project
- Vinnova/NGIL financed PhD or faculty project



# Disseminate of research results

- Work shops for industry, academia and students
- Seminars
- International conferences
- Ideon, LUVIT and the Öresund research platform are interfaces to fast growing companies and start-ups
- Models, methods and products for use in industry or for start-ups of new companies will be developed
- Innovative environment and critical mass for industry driven research will be generated
- Education of specialised engineers, licentiates and doctors in both industry and for post doc positions
- Cases studies at industry partners involving both industry scientific personnel and academic researchers will take place
- Industry representatives will be working at the centre for longer or shorter time periods



# Questions

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