Next Generation Innovative Logistics
NGIL
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VINNX Competence Center
At Lund University

Teknisk Logistik
Produktionsekonomi
Förpackningslogistik
Historia

- April 2005 meddelades att Lund hade fått ett av fyra VINNX center.
- 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

- Engineering Logistics
- Production Management
- Packaging Logistics
- Öresund Logistics

Visibility
Risk sharing
Adaptive logistics
New research topics
Programme committee

• Bereder projekt som styrelsen skall besluta om
• Medlemmar utses av företagen
  (forskningsinriktade representanter)
• Även akademin är med i denna komite
• Kan tillsätta en grupp för att vidarutveckla 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?
- 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

- Workshops 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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