NTNU

Innovation and Creativity

"CSR in global production systems – Conceptual and applied issues "

Seminar at NTNU 22nd November 2007

Seminarreport

Department of Industrial Economics and Technology Management
Norwegian University of Science and Technology, NTNU

NTNU Trondheim
Norges teknisk-naturvitenskapelige
Universitet
Institutt for industriell økonomi
og teknologiledelse

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Summary:
This report sums the content of a seminar held at NTNU 22nd November 2007 with the title "CSR in global production systems - Conceptual and applied issues". The seminar was organised in connection with the visit of professor Dr. Edson Pinheiro de Lima from University of Warwick - UK/ Pontifical Catholic University of Parana Curitiba – Brazil, and associated professors Dr. Carlos Mataix from Universidad Politécnica de Madrid – Spain, at NTNU. Together with a range of NTNU-researchers, the two visiting professors presented their ongoing CSR-research at the seminar. The aim of the seminar was to create an arena for discussion of issues related to CSR and global production systems, and to lay the ground for future project-cooperation.

Key words:
CSR, globalization, global production systems, value chains, CSR in design, CSR in logistics and strategy.

Preface

This report is a summing up of an open seminar with the title "CSR in global production systems - Conceptual and applied issues" held at NTNU, Trondheim, 22nd October, 2007. The CSR-group at Department of Industrial Economics and Technology Management (IØT) in cooperation with NTNU's Globalization programme – Global Production has been the organizers of the seminar.

The background of the seminar was a visit at NTNU of Professor Dr. Edson Pinheiro de Lima from University of Warwick - UK/ Pontifical Catholic University of Parana Curitiba – Brazil, and associated professors Dr. Carlos Mataix from Universidad Politécnica de Madrid – Spain. The two visiting professors, together with a range of NTNU-researchers, presented their ongoing research on CSR at the seminar.

The aim of the seminar was to discuss CSR-related issues in light of the ongoing globalization of production-systems, and to establish a ground for future project-cooperation, both internally at NTNU and with the visiting professors' institutions.

The 22 persons attending the seminar had a variety of backgrounds, ranging from NTNU-professors, PhD-scholars and master-students to representatives from the private sector and governmental institution.

Trondheim, November 30, 2007

List of content:

1 Background and aim of the seminar

The trend over the last 20 to 30 years is for production of goods and services to become globalised. Among other things, this involves production moving from countries with higher costs to countries with lower costs; labour-intensive production relocating to countries with abundant and cheap labour; production with impacts on nature and the environment moving from countries with strict environmental, health and safety legislation to countries with less strict laws; and production with high energy demands locating in countries that offer cheap energy. Distributed production requires increased use of transportation and the associated costs and pollution side effects associated with transport. The UN Global Compact and UN Millennium Development Goals address the social and environmental challenges posed by globalisation, especially by the poorer and less developed nations.

Global Production is a key topic in the Globalisation programme at NTNU. Through the Globalisation programme, NTNU aims to develop knowledge that will contribute to the understanding of how individual nations and those involved in the production of goods and services can define roles and positions that are sustainable, fair and competitive in the course of their interactions with each other. The value- and supply-chain is used as the basic framework for this research, with an approach that looks at production from the initial idea to the finished product, and spans the entire lifecycle, including use, disposal and recycling.

The Department of Industrial Economics and Technology Management's (IØT) vision within NTNU, is to develop research and teaching expertise at an international level in its fields, promoting the formation of values in an economically, socially, and environmentally responsible manner, within the industrial and technology based areas of society. Environmental Management, Supply Chain Management and Corporate Social Responsibility are central elements in this vision. IØT has identified two thematically focused research activities related to fulfil this vision:
1. Supply chain management.
2. Environmental management and social responsibility in global value chains.

With this as a background, an open CSR-seminar was organised as part of the visit of Professor Dr. Edson Pinheiro de Lima from University of Warwick - UK/ Pontifical Catholic University of Parana Curitiba – Brazil, and associated professors Dr. Carlos Mataix from Universidad Politécnica de Madrid – Spain at NTNU. These two, together with a range of NTNU-researchers, presented their ongoing research on CSR at the seminar.

The aim of the seminar was;
1) to create an arena for discussion and knowledge interchange of CSR-related issues in light of the globalization of production-systems, and
2) to establish a ground for future project-cooperation.

2 Summary of the seminar

The seminar was organized into two parts, the first focusing on conceptual CSR-issues and the second part focusing on applied issues. The second part was further divided into a section on "CSR in design" and "CSR in logistics and strategy" (see program details in Appendix 1).

Annik Magerholm Fet, professor at IØT and head of NTNU's Globalization programme – Global Production, opened the seminar by presenting NTNU's Globalization programme and the range of CSR-related research at NTNU. Thereafter Carlos Mataix, associated professor at Universidad Politécnica de Madrid – Spain, presented a review of the evolution of CSR in Spain and the status of the phenomenon today. Øivind Hagen, PhD-scholar at NTNU/ SINTEF, then presented his project on how branding of CSR could work as a driver for CSR-related organizational change. The session before lunch was rounded of by Stig Larssæther, PhD-scholar at NTNU, with a STS-perspective (science-technology studies) on CSR.

The applied part, with a focus on "CSR in design", was opened with a presentation by Cecilia Haskins, PhD-scholar at NTNU, on the role of CSR for designing socio-technical systems, based on a case study of the local community of Verdal. This was followed up by Martina Keitsch, senior advisor at the Oslo School of Architecture, who gave an overview of how sustainability issues could be implemented in design processes. The design-section was finished by Casper Boks, professor at NTNU's Department of Product Design, who presented a historical perspective on "eco-design".

Professor Edson Pinheiro de Lima at Pontifical Catholic University of Parana Curitiba, Brazil, opened the second section on applied CSR-issues with a presentation on the development of an operation strategy-framework based on social responsibility requirements. This was followed by Erlend Alfsnes, post doc at NTNU and senior researcher at SINTEF, who focused on different aspects of a global control centre for global value chains. Ottar Michelsen, post doc at NTNU, then presented his view on purchasing as a driver for CSR in supply chains. This section was ended with a presentation by Christofer Skaar, PhD scholar at NTNU, on a model of benchmarking of value chains on CSR. Finally, the seminar was rounded of with a presentation by Annik Fet on CSR performance-indicators in the extended supply chains, a summing up of the seminar and some thoughts on the way ahead.

3   Abstracts of the presentations

Carlos Mataix: The status of CSR in Spain
The presentation will deal with a review of the evolution of CSR among Spanish companies in the last decade. The growing adoption of CSR standards (GRI, SA8000, AA1000) by Spanish enterprises, the difficulties for verifying the quality of the information given in their corresponding CSR memories, the contradictions between social action (reactive view) and strategic CSR, the role that different stakeholders are playing (government, consumers, NGOs) will be issues tackled in the presentation. Two cases will be presented:
- CSR in one of the main companies of the energy sector in Spain (paying special attention to the challenges they are facing to incorporate CSR in a strategic way)
- The CSR Observatory, an independent organization composed of NGOs and Universities, that once a year publishes a report about the quality of the information that 35 main Spanish enterprises include in their annual CSR reports and memories. The main results of the last reports will be discussed.

Stig Larssaether: Moral matters - the symmetry principle and moral agency in/between organisations
Within science-technology studies (STS) it has been a central axiom to treat human and non-human/material actors in a symmetrical way when looking for moral agency in practice fields/actor networks.   Another assumption has been to treat organisation(s) as an outcome, rather than an initial condition that may serve as an analytical or empirical boundary. While enquiries along these lines may open up promising possibilities, there are also problematic aspects that needs closer attention. In this presentation I will give a short introduction to these issues on the basis of my unfolding PhD work.

Øivind Hagen: Do socially responsible brands lead to socially responsible companies?
CSR is a concept and a language for business to take part in the discourse on sustainable development, its own role in society, and to legitimate its historically strong position in society. Through CSR, non-commercial values (environmental and social issues) are being inscribed into the commercial product through branding. The aim of my project is to shed light on how all the external CSR-communication strike back at a company and influence its internal CSR-work. Through Karl Weick's enactment-theory and the concept of auto-communication, I find that proactive CSR-communication may have both self-fulfilling and seductive effects on organisations.

Cecilia Haskins: A framework for designing socio-technical systems
The act of design is a human activity. Churchman describes design as a form of communication among people that enables their ability to collaborate and transfer their concepts of a selected solution into action. Invariably today's 'action' will include interaction with technology.

This presentation will describe the case of Aker Kværner Verdal as they transitioned in the late 1990's from a large, single entity into a smaller entity supported by local suppliers of technical goods and services. These new firms were initially internal

capabilities spun off into external entities as part of a change in corporate strategy. Aker Kvœrner Verdal has a strong commitment to the community and to CSR principles. A framework for change and collaboration has been applied and its implications for future CSR activity will be discussed.

Martina Maria Keitsch: Sustainability strategies in Product design
The number of new and ecologically innovative ideas for living, working, and behaving in daily life is growing continuously. However, many methods in design for sustainability are still directed towards rules of thumb for redesign or material changes of products, while changes of attitudes and in organization are important as well. The presentation gives an overview over sustainability strategies used in product design and proposes a model on how different values: information (here in form of environmental indicators), materials and ethics can be integrated systemically to develop a sustainable product solution. The model was developed by Wigum (2004) and consists of different layers: Orientation, System flow, Design solution, and Activity experience, which are related to sustainable principles, guidelines and criteria. It will be illustrated with help of a case example from automobile industry and its advantages and hindrances for designers and companies (e.g. its impact on the company's CSR performance) will be briefly discussed.

Casper Boks: "Recent Academic Developments in Green Value Chain Management"
This presentation aims to provide some historical perspective on 'ecodesign and related' research developments, and discusses a number of personal views on the current status of green value chain management research from a sustainable product development perspective. In conclusion, future appropriate research avenues are briefly discussed, like methodology customisation, performance measurement and human factors in sustainable product development.

Edson Pinheiro de Lima: Developing an operations strategy framework based on social responsibility requirements
The enterprises' relationships complexity and their interactions with its operational environment constitute triggers for organisational change processes. Companies are reassessing their socioeconomic environment in order to redesign their operations according to the new paradigm contents, dynamics and complexity. The firm concept is being redefined in order to match new value propositions, which are being managed in a multivariable perspective. These multi aspects that define value cover economic, environmental and social issues and they are the new design requirements for the operations systems. These new concepts result in new models for describing and explaining the production process, the operations strategy contents and its formulation process revision, the operational and strategic performance redefinition. The proposal presented in this research seminar frame the discussion of the operations strategic management redesign, considering the social responsibility value perspective. Changes in operations strategy are studied and a conceptual framework is proposed. A five step methodology and a research plan are presented, based on: operations strategy conceptual construction; a refinement process supported by experts' interviews and a Delphi experiment; case studies for refinement and bounded validation; and a survey for general validation. The results of the research project follows a five years timeline and are oriented for generating normative frameworks for operations strategic management system design, based on social responsibilities requirements.

Erlend Alfsnes: "Global manufacturing and supply chain control"
The operation of global manufacturing network is challenging due to the complexity in product and information flow, diversity in sites, localization and processes and the information processing needed for control. Thus information technology has to be developed to cope with this complexity and to develop decision support for controlling the network. In this paper the concept of the Global Control Centre for manufacturing activity is developed based on research on a Norwegian supplier of fish hooks. The main elements of the GCC is found to be the global control model, performance measurement system, ICT solutions and the organization and the physical environment. In order to realize the GCC the main challenges are ICT investments and standardization, and the management of change and organizational resistance. The findings presented in this paper are not yet collectively implemented and tested and must therefore only be viewed as conceptual proposals.

Ottar Michelsen: Strategic purchasing as a driver for CSR in supply chains
Companies are increasingly focusing on environmental and social issues related to their activities. However, as a result of globalisation and increased specialisation, more and more of the environmental and social impact is generated at other locations than where the company itself is situated. To ensure environmental and social sound production processes, the focus on these issues must then be spread within the supply chain. One way of doing this is by focusing on environmental and social issues in the companies purchasing strategies. The authorities also play an important role here, partly as a result of their position as a large consumer, but also as a result of their ability to influence what is purchased through new regulations.

Annik Magerholm Fet: CSR-performance indicators in the extended supply chains
As part of globalization, companies are facing different CSR-issues. Some of these are of traditional in-house problems and are addressed by internal procedures as part of their management systems. The results of the companies' performances on these matters are often presented in their annual reports. CSR-issues taking place in the extended supply chain (upstream or downstream) are more difficult for companies to control and to communicate. One way is by the requirements set to the supplier and the use of CSR-performance indicators to communicate the information. The presentation will illustrate the use of indicators as a tool to develop supply networks or the extended supply chain. It will further look at possibilities to use CSR-issues to develop a region and how to make this region more competitive and even more attractive for companies in the globalization process.

Cristofer Skaar: "Benchmarking the value chain"
A corporation has a responsibility for the economic, environmental and societal impacts caused by its products and services throughout the value chain. In order to minimise negative impacts it is necessary to have knowledge of upstream (e.g. raw material extraction and production) and downstream (e.g. use and disposal) activities. To further identify focus areas, a benchmark model of the value chain will be useful. How could or should such a benchmark value chain be constructed?

Appendix 1: Programme

CSR in global production systems – conceptual and applied issues	
PROGRAMME	
0900 – 1030 Part I *Conceptual issues*	0900 Annik Magerholm Fet: Welcome 0915 - 0945 Carlos Mataix: "The status of CSR in Spain" 0950 -1010 Stig Larssæther: "Moral matters - the symmetry principle and moral agency in/between organisations" 1010 - 1030 Øivind Hagen: "Do socially responsible brands lead to socially responsible companies?"
1030 – 1230 ENOVA/ Lunch	1045 - 1130 ENOVA information-meeting 1145 – 1230 Lunch Realfagskantina
1245 – 1630 Part II *Applied issues*	*CSR in design* 1245 - 1305 Cecilia Haskins: "A framework for designing socio-technical systems" 1305 - 1325 Martina Keitsch: "Sustainability strategies in Product design" 1325 - 1345: Casper Boks: "Recent Academic Developments in Green Value Chain Management" Break *CSR in logistics and strategy* 1400 - 1430 Edson Pinheiro de Lima: "Developing an operations strategy framework based on social responsibility requirements" 1435 - 1455: Erlend Alfsnes: "Global manufacturing and supply chain control" 1455 - 1515: Ottar Michelsen: "Strategic purchasing as a driver for CSR in supply chains" Break 1525 - 1545: Annik Magerholm Fet: "CSR-performance indicators in the extended supply chains" 1545 – 1605: Cristofer Skaar: "Benchmarking the value chain" 1605 – 1630: Annik/Øivind/Ottar: Wrapping up
1830	Dinner with guided tour at Kristiansten Festning

Appendix 2: List of participators

Name	Affiliation	E-mail
1. Carlos Mataix	Associated Professor at Department of Industrial Engenieering Universidad Politécnica de Madrid, Spain	carlos.mataix@upm.es
2. Stig Larssaether	PhD- scholar NTNU	stilar@hf.ntnu.no
2. Øivind Hagen	PhD- scholar NTNU/ SINTEF	oivind.hagen@sintef.no
4. Cecilia Haskins	PhD- scholar NTNU	
5. Martina Keitsch:	Senior Advisor The Oslo School of Architecture and Design	Martina.Keitsch@adm.aho.no
6. Casper Boks	Professor NTNU	casper.boks@ntnu.no
7. Edson Pinheiro de Lima	Academic Visiting Fellow at Operations Management Group Warwick Business School at University of Warwick/ Professor at Pontifical Catholic University of Parana Curitiba - Brazil	e.pinheiro@pucpr.br
8. Erlend Alfsnes	Post. doc. NTNU/ SINTEF	Erlend.Alfsnes@sintef.no
9. Ottar Michelsen	Post. doc. NTNU	ottar.michelsen@iot.ntnu.no
10. Annik Magerholm Fet	Professor, NTNU	Annik.Fet@iot.ntnu.no
11. Cristofer Skaar	PhD- scholar NTNU	christofer.skaar@iot.ntnu.no
12. Monica Vlad	MSc IndEcol, NTNU	vlad@stud.ntnu.no
13. Troy Hawkins	Post.doc, IndEcol, NTNU	troy.hawkins@ntnu.no
14. Kristin Støren Wigum	Researcher/designer Gaia Trondheim	KSWigum@gaiatrondheim.no
15. Igor Sartori	PhD- scholar NTNU	igor.sartori@ark.ntnu.no
16. Natallia Vakar	NTNU	vakaryonok@yahoo.com
17. Stian Rein Andresen	NTNU	stianrei@stud.ntnu.no
18. Luitzen De Boer	Professor NTNU	luitzen.de.boer@iot.ntnu.no
19. John Hermansen	Ass. prof. NTNU	john.hermansen@iot.ntnu.no
20. Bertha Sopha	PhD- scholar NTNU	bertha.sopha@ntnu.no
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Slide 1

NTNU
Innovation and Creativity

Global Production and Corporate Social Responsibility

Professor Annik Magerholm Fet
Department of Industrial Economics and Technology management
Norwegian University of Science and Technology – NTNU
Seminar 22nd November 2007

Slide 2

NTNU strategic research areas

- Energy and Environment
- Information and Communication Technology
- Marine and Maritime Technology
- Materials Technology
- Medical Technology
- *Globalization*

Slide 3

A new Agenda
The world comes closer and globalization is a reality

Slide 4

The globalization program at NTNU

Criteria
- Quality
- Relevance
- Multidicipl.

Global production
- technology, culture and society

Global communication
- technology, knowledge development, identity

Culture translation
- art, culture, values, religion

Conflict, mobility and changes
- politics, economy, state, market
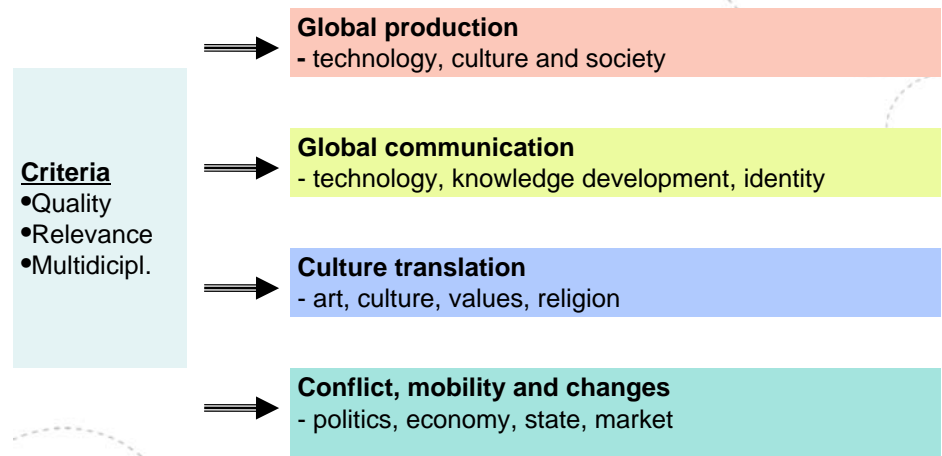
GP focused areas

a) **Global production systems**
b) **Global production strategies**
c) **Design av global networks**

Prioritized sectors:
maritime industry, energy, materials, consumer goods

CSR-initiatives at NTNU:

- CSR as part of the Globalization program
- CSR in research programs and in PhD-programs
- CSR as a strategic area at the department of industrial economics and technology management (IØT)
- CSR i master courses

Important CSR-issues

- **Business Ethics**
- **Community Investment**
- **Environment**
- **Governance & Accountability**
- **Human Rights**
- **Marketplace**
- **Mission, Vision, Values**
- **Workplace**
- **Technology**

CSR in Global value chains, the structure of the program:

Three core Projects:

A firm perspective on CSR	A regulative perspecti ve on CSR	A system perspective and operative models for CSR in value chains

Three cross-cutting projects:

1. CSR and business-NGO relations (PhD) (NSM)
2. Corporate and product/service CSR reporting (PhD) (NTNU)
3. Measurement of extra-financial values and risk related to social and environmental issues (int.nat.)
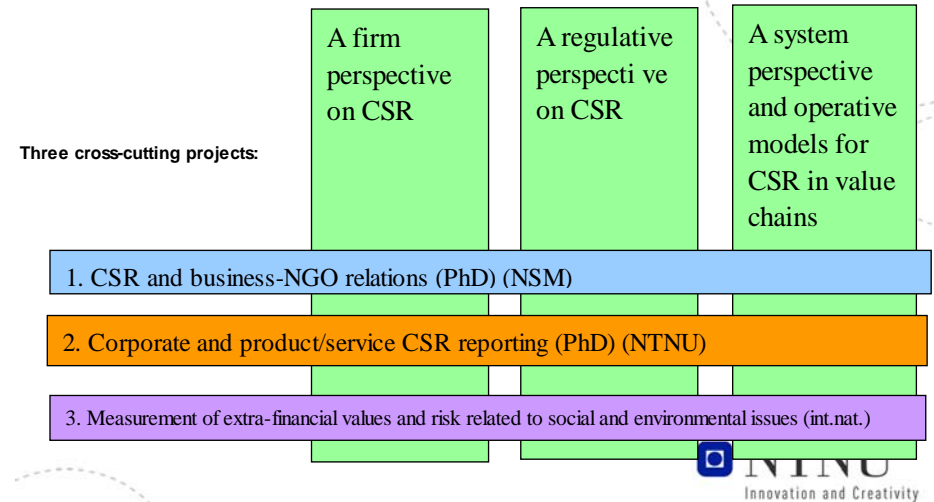
When business operate in a global market

CSR concerns must be conceptualized and implemented not only in several business units, but also through market relations.

CSR-awareness should be integrated in supply chain management (SCM)

Both <u>operative and conceptual</u> challenges arise when CSR is addressed in the context of global value chains.

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Sectoral focus:

- international shipping represented by Wilh. Wilhelmsen
- the petroleum industry represented by Statoil and Hydro
- the financial sector represented by DnB NOR

The project will collaborate closely with stakeholders along the value chain, involving firms, trade organisations, ministries and regulatory agencies.

NTNU
Innovation and Creativity

Industrial Ecology at NTNU

- IndEcol at NTNU initiated in 1993/94
- Strong influence from Norwegian industry
- Formalised at NTNU 1998
- **3 focus areas:**
  - Education (study programme and EU-courses)
  - Research (P2005, various PhD-projects)
  - Information and outreach (report series, forums)
- Strong international alliances

DTU

TUDelft
Delft University of Technology

Georgia Institute of Technology

MIT

Yale University

CHALMERS
Chalmers University of Technology

NTNU
Universiteit Leiden

Program 22.11.2007

0900	Annik Magerholm Fet: Welcome
0915 – 0945	Carlos Mataix: "The status of CSR in Spain"
0950 -1010	Stig Larssæther: "Moral matters - the symmetry principle and moral agency in/between organisations"
1010 - 1030	Øivind Hagen: "Do socially responsible brands lead to socially responsible companies?"
11- 12.30	Guided tour at NTNU, Lunch Realfagskantina

CSR in design

1245 - 1305	Cecilia Haskins: "A framework for designing socio-technical systems"
1305 - 1325	Martina Keitsch: "Sustainability strategies in Product design"
1325 - 1345:	Casper Boks: ""Recent Academic Developments in Green Value Chain Management"

CSR in logistics and strategy

1400 - 1430	Edson Pinheiro de Lima: "Developing an operations strategy framework based on social responsibility requirements"
1435 - 1455:	Erlend Alfsnes: "Global manufacturing and supply chain control"
1455 - 1515:	Ottar Michelsen: "Strategic purchasing as a driver for CSR in supply chains"
1525 - 1545:	Annik Magerholm Fet: "CSR-performance indicators in the extended supply chains"
1545 – 1605:	Cristofer Skaar: "Benchmarking the value chain"
1605 – 1630:	Annik/Øivind/Ottar: Wrapping up

Slide 1

POLITÉCNICA

The Status of CSR in Spain

Carlos Mataix; Miguel G Pavón; Carmen Bona;
Natalia Álvarez; Ana Moreno

INDUSTRIALES
ETSII | UPM

CSR in global production systems. NTNU

Slide 2

UPM CREATED IN 1971:
MERGING OF CENTENARY ENGINEERING SCHOOLS

CIVIL, INDUSTRIAL, ARCHITECTURE, AERONAUTICAL, FORESTRY, AGRICULTURE, MINING, NAVAL, TELECOM., COMPUTER SCIENCE AND OTHER

FIRST TECHNICAL UNIVERSITY IN SPAIN

UPM FIGURES AT 2004:
11 ADVANCED ENGINEERING SCHOOLS (5 TO 6 YEARS ENG. AND PhD DEGREES)
9 ENGINEERING SCHOOLS (3 YEARS ENGINEER DEGREE)

37.000 UNDERGR. STUDENTS	3.300 FACULTY MEMBERS	30 ENGINEER DEGREE
6.800 MASTER STUDENTS	2.100 SUPPORTING STAFF	> 50 PhD PROGRAMS
2.500 PhD STUDENTS	1.000 PROFESSIONAL STAFF	

Slide 3

ENGINEERING CENTERS AT UPM

ADVANCED CENTERS (5/6 year degree)	TECHNICAL SCHOOLS (3 year degree)
AERONAUTICAL ENGINEERING	AERONAUTICAL ENGINEERING
ARCHITECTURE	TECHNICAL ARCHITECTURE
AGRICULTURAL ENGINEERING	AGRICULTURAL ENGINEERING
CIVIL ENGINEERING	PUBLIC WORKS ENGINEERING
INDUSTRIAL ENGINEERING	INDUSTRIAL ENGINEERING
MINING ENGINEERING	FORESTRY ENGINEERING
FORESTRY ENGINEERING	TELECOMMUNICATIONS ENGINEERING
NAVAL ENGINEERING	COMPUTER ENGINEERING
TELECOMMUNICATIONS ENGINEERING	
SURVEYING ENGINEERING	
COMPUTER SCIENCE	
SPORTS & PHYSICAL ACTIVITIES	

Slide 4

UPM LOCATIONS IN MADRID

UPM is spread around 3 Campuses
The main one in downtown Madrid

The other two Campuses count with
Technological Parks (North & South of Madrid)

In addition, 2 of the oldest Schools are in
downtown independent locations

Escuela Técnica Superior de Ingenieros Industriales de Madrid

Departments

- Industrial **Engineering**, **Business Administration** and **Statistics**
- Applied **Mathematics**
- **Mechanical** Engineering and **Manufacturing**
- **Nuclear** Engineering
- **Materials** Engineering and Sciences
- **Electrical** Engineering
- Applied **Physics**
- **Automatic** Control, **Electronics** and **Computers**
- **Chemical** Engineering and **Environmental** Techniques
- **Energy** and **Fluid-Mechanics**
- **Structural** Mechanics and Industrial **Construction**
- **Iron** and **steel** industry
- **Languages**

Our working team

UPM-IOL: Ingeniería de Organización y Logística

- is a specialized Unit making up part of the wider *Department of Industrial Engineering, Bussinees Administration and Statistics* (80 faculty)
- working since 1969 on Production and Logistics Management, and Quantitative Methods;
- teaching undergraduate, graduate and doctoral programs;

Our working team

UPM-IOL:

- Teachers and researchers of UPM-IOL belong to different specialized groups:
  - Research group: "Industrial Engineering and Logistics"
  - Research group for international cooperation for development: "GOCMA" (Organization, Quality and Environment for Development)
  - Two "educative innovation" groups

Potential CSR contributions

- A research line on CSR initiated one year ago (two research projects on-going: CSR in REE; PPP for development)
- Experience in logistics: European projects, rail transport, reverse logistic
- Spanish Industrial context knowledge and contacts (case studies?)
- Spanish "Third Sector" context knowledge and participation (Engineers Without Borders)

The status of CSR in Spain: Contents

- Spanish Socio-Economic context (outline)
- CSR definitions and dilemmas ("Spanish nuances")
- Role of actors in the recent evolution of CSR:
  - Enterprises
  - Government
  - Consumers
  - Civil Society
- Future??

Context:
Economic convergence with other European countries

GDP Per Head (in USD)
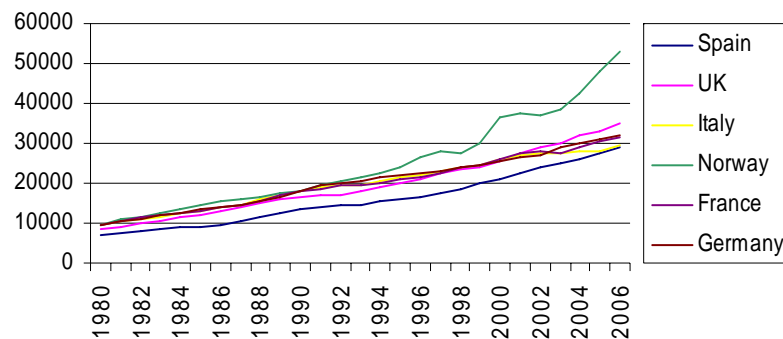
Source: OECD

Context:
Social convergence with other European countries

Standardised Unemployment Rate

Source: OECD

Context:
A sense of equity

GDP pc

HDI

— Norway
— Spain

Context:
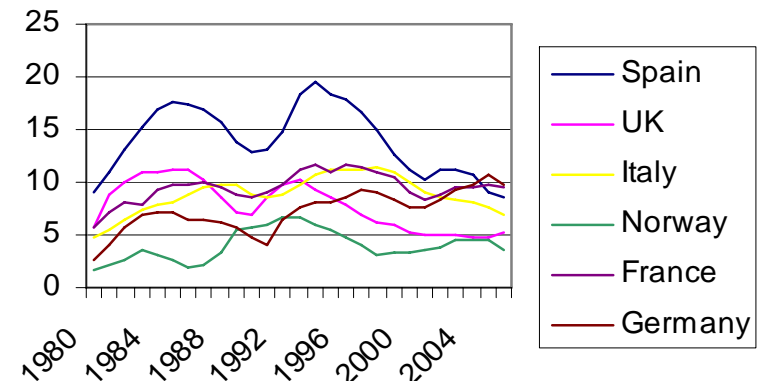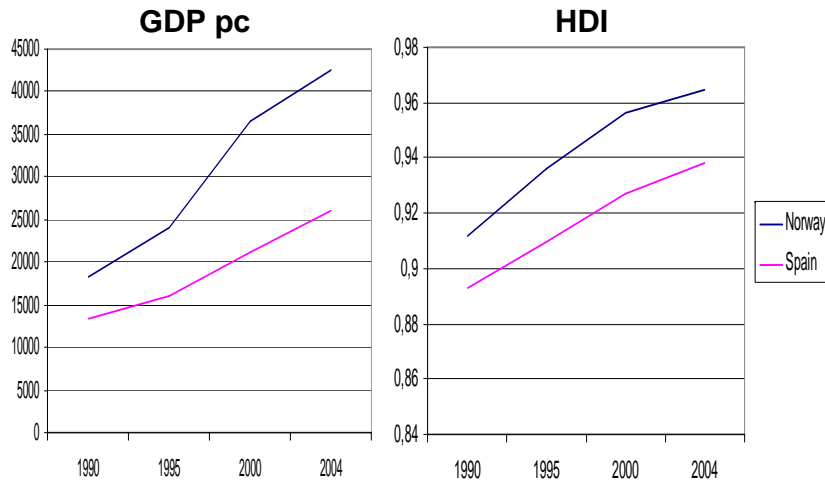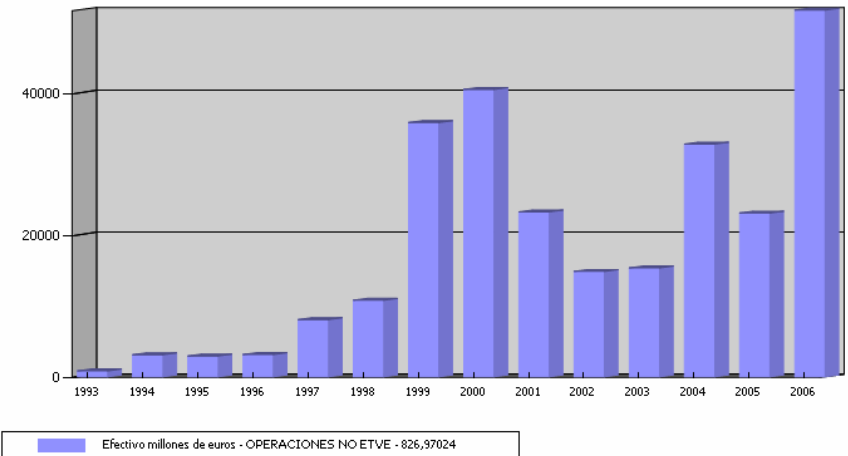## Internacionalization of Spanish enterprises.

Efectivo millones de euros - OPERACIONES NO ETVE - 826,97024

In resume:

Good news:
- Continuous economic growth (above EU average)
- Social progress (specially if considered since 80s of XX)
- Spanish presence in the international scene: raise of Spanish multinationals, relations with LA, Aid for Development (0,25% in 2004 -> 0,5% in 2008!)
- Vitality of civil society organizations: NGOs

But:
- Environmental costs of growth (urbanization, energy dependence,…)
- Social differences (inmigrant population: 0,5 mill 1996 -> 4 mill 2007)
- Low rates of productivity
- Oligoplistic power of private enterprises in basic sectors

CSR Definition (1)

Green Paper from EU:
"…a concept whereby companies **integrate social and environmental concerns** in their business operations and in their interaction with their **stakeholders on a voluntary**
basis.
Being socially responsible means not only fulfilling legal expectations, but also **going beyond compliance** and investing 'more' into human capital, the environment
and the relations with stakeholders"

But: "elastic" concept, with high symbolic meaning.
Risk to be reduced to general principles, that allow multiple interpretations according to particular interests and goals (Rodríguez Fernández, 2007)

CSR Definition (2)

This possible interpretations is in the core of current debates about CSR in Spain:

- *Voluntary – Regulated (somehow)*
- *Social action – CSR as an strategic issue*
- *External CSR – Internal CSR*
- *External stakeholders – Internal stakeholders*
- *One standard – Double standards (Importance of direct investments in LA)*

Far from consensus among actors…. But (at least) dialogue

Enterprises. Standards adoption (1)

More than 400 enterprises: annual CSR reports (2007) But an insignificant number in 2002 (source: Oservatorio RSC)

Global Compact:
140 enterprises in **2002**. **Now** more than **500 in 2006**. (source: ASEPAM)

GRI, in 2006:
60 enterprises used GRI model in their memories. (source: Oservatorio RSC)
31 obtained the "In Accordance" level. But 168 all around the world (10 in UUEE, 8 in UK, 6 in Germany)

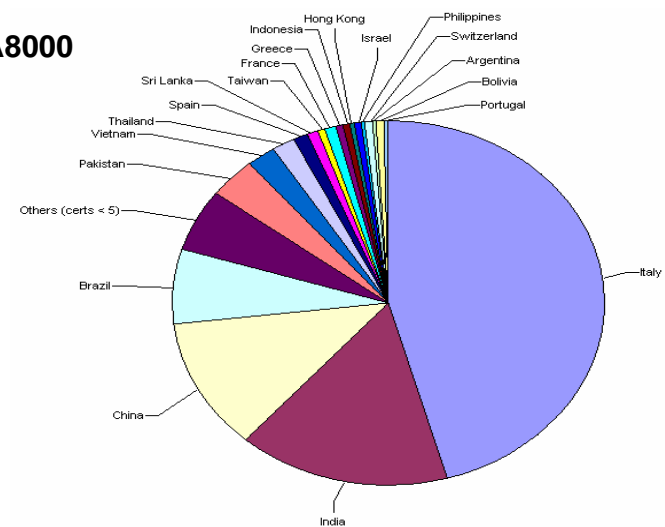SA 8000, in 2007:
16 enterprises certified (source: SA8000)

Enterprises. Standards adoption (2)

GRI Por Sectores en España
Abril 2006
Fuente: GRI
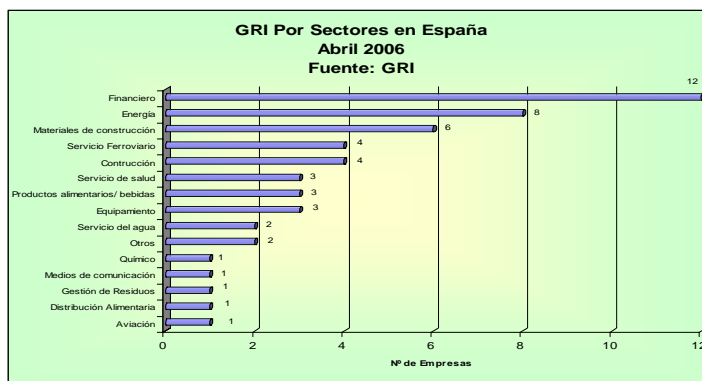
Banks, energy and building companies ahead

Enterprises. Standards adoption (3)

SA8000

Enterprises. Social Responsability Indexes

Spanish enterprises in each reference index

Nº de empresas españolas en cada índice de referencia
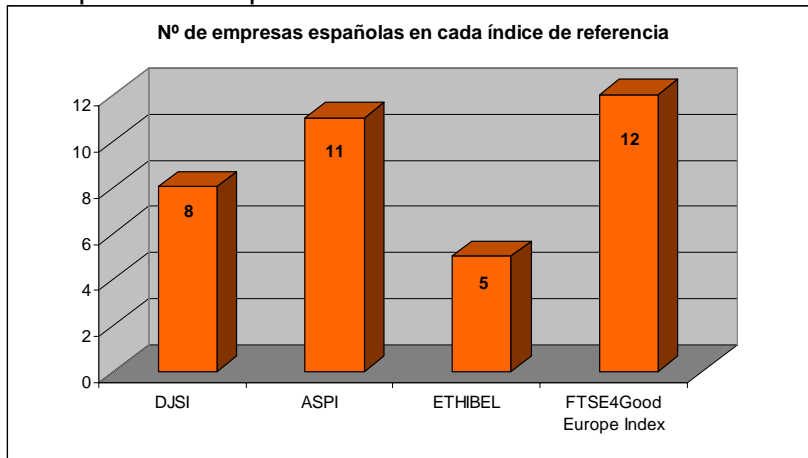
Source: Observatorio de la RSC

Enterprises. SRI (4)

Spanish enterprises weight in the global reference indexes

Peso de las empresas españolas en los Índices de referencia (31/12/05)
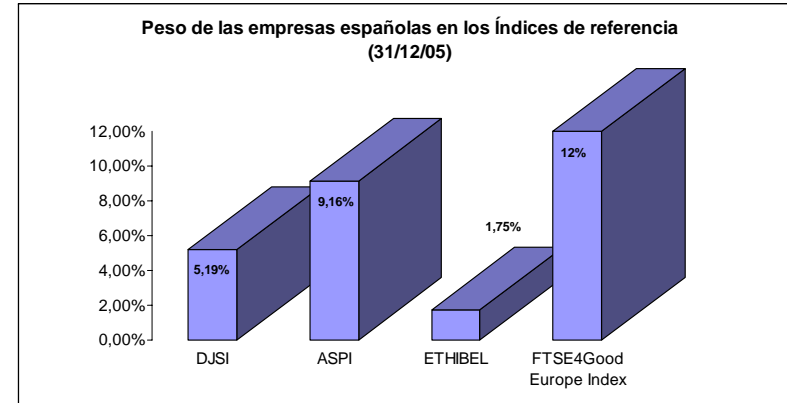
Inter-enterprise organizations

- **Multiple initiatives (all emerged in the last 5/10 years)**
- **Initiative of big companies;**
- **Mainly oriented to external communication;**
- **Few have multistakehoder nature.**

A case: Red Eléctrica Española (REE)

- REE: was the first company in the world devoted exclusively to electricity transmission and operation.

- It has been responsible for the transmission network and for operation of the Spanish electricity system.

Net sales (million of euros)	949,3
Profit after taxes (million of euros)	200,2
Cash-flow (million of euros)	465,6
Net financial liabilities (million of euros)	2.612,2
Tangible fixed assets (million of euros)	6.676,9
Dividends per share (Individual quantities of the head company) (million of euros)	0,8984
Workforce employees	1.442

CSR in REE

- Pioneer in Spain: CSR reports since 2002.
- The Corporate Accountability Report for 2006 has been drawn up and verified based on the new G3 version of the GRI guide (2006), and submitted to review by this entity, which has awarded the report the maximum rating of A+.
- REE ranking in the main Dow Jones Sustainability Indexes (DJSI) has been consolidated since it was first enclosed in DJSI World, on September 2006.
- Standards used for REE:
  - SA 8000
  - AA1000 SA
  - GRI
  - European Model of Excellence EFQM
  - ISO 9000, ISO 14001, OHSAS 18001, EMAS and SIGMA

CSR in REE internazionalization process

Actions carried out in Bolivia and Peru through REE subsidiaries TDE and REDESUR, include CSR concepts:

- "In Bolivia, training is mainly aimed to show what precautions are in order when electricity and electrical equipment are used, or to carry out planned visits and practices in utilities' facilities... and any other actions that support the regional ways and values..."

- "In Peru, the agreement entered with the Ministry of Education must be highlighted. This agreement assigns optical fiber facilities to support a plan that provides all Peruvian schools with access to Internet or makes school materials available to education institutions in the country's southern zones where economic conditions are worst..." (CSR Report, 2006)

Future challenges of REE in CSR

- Focus of social action activities (from many diverse and isolated actions -> to concentration around REE core business)
- Internal CSR vs External CSR (recent survey to employees: "CSR is marketing")
- Internalization of Stakeholder voice (AA1000 ES?) (What for?; How?; What resources?; Management of expectations...)
- CSR in the value chain (New suppliers management framework?)
- CSR in the organizational structure: still far from strategic decision making (but steps forward)

The status of CSR in Spain: Contents

- Spanish Socio-Economic context (outline)
- CSR definitions and dilemmas ("Spanish nuances")
- Role of actors in the recent evolution of CSR:
  - Enterprises
  - Government
  - Consumers
  - Civil Society
- Future??

Governmental attitude

Declarations and willingness, specially since 2004.

Recent Government initiatives promoting CSR**:**

- **Employment and Social Affairs Ministry's Expert Forum.**
  Composed with 47 members from different fields related to the CSR

- **Spanish Parliament's CSR Sub-commission.** Report titled
  "For powering and promoting the Social Responsability in the Enterprises" (2007)

- **CSR Multistakeholder Council.** On the way (but controversial)

- **"Ley de contratos del Estado" (Law on Shareholders Agreements made by the State)** On the way. It represents more than 25% of the Spanish GDP.

Consumers (1)

Some indirect consumption patterns that may show Interest in CSR

Fair Trade Sector in Spain

Source: SETEM
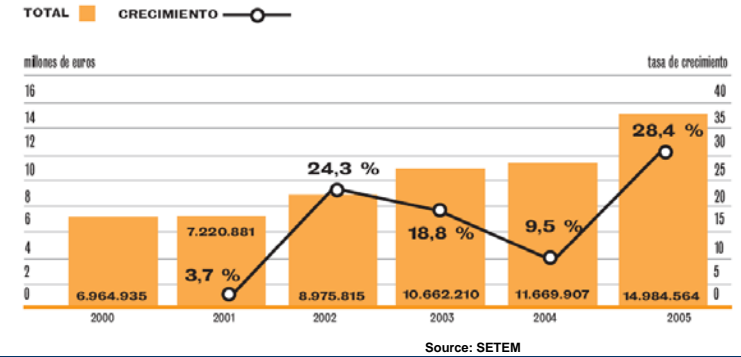
Consumers (2)

Ecological Agriculture. Ground dedicated (hectares).
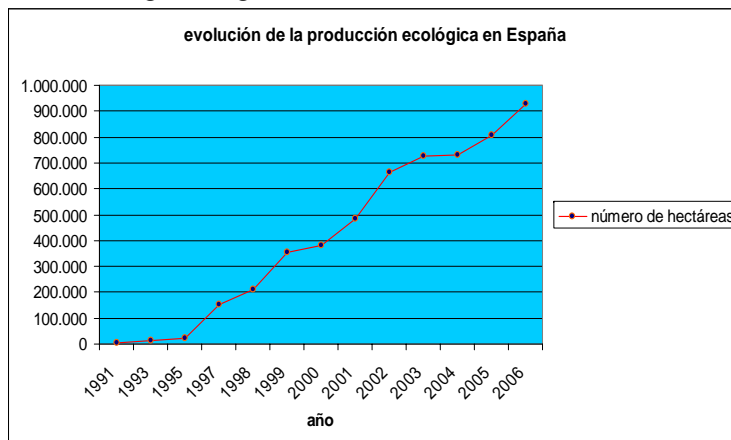
Consumers (3)

Social Resposability Investment in Spain.
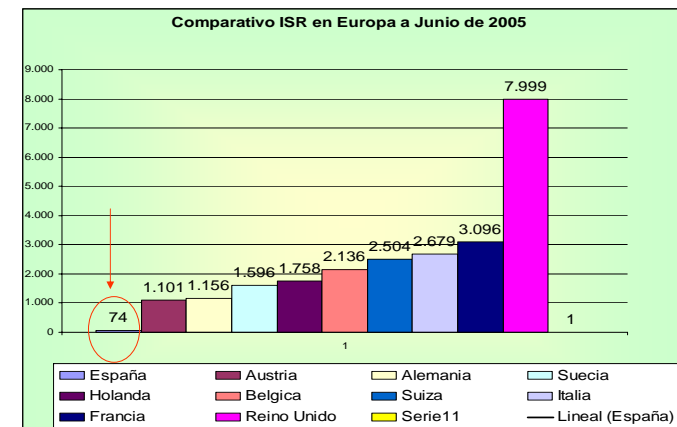
In resume

The awareness of CSR issues has grown

But recent surveys show that Spanish consumers are not taking buying decisions taking into account social and ecological patterns.

Far from "politic consumers" (lack of interest, but also lack of information…)

Civil Society Organizations

- NGOs very concerned about the CSR evolution:
  - It can not be a "smoke screen" (examples Oxfam, International Amnesty, Engineers without Borders)
  - Stakeholders: legitimacy?, voice for what?
  - In Third World countries: Double standards?
  - But new spaces for dialogue
- Unions: "defending their ground"
- Universities (emerging education and research programs on CSR, but have not still an influent voice in CSR)
- Importance of networking to balance forces (example CSR Observatory)

A case: OBSERVATORIO DE RESPONSABILIDAD SOCIAL CORPORATIVA (CSR Observatory)

- Founded in 2003 by different Civil Society Organizations to cooperate in **research and promotion of CSR**
- **Members**: NGOs (Oxfam, RedCross, Greenpeace, Caritas, EWB,...)
  + Trade Union CCOO + Consumer Organizations
- Participation of several public Universities
- Create a **network** for proyects, conferences,...(national and international)
- Among its activities, once a year the ORSC publishes a report on CSR in the biggest Spanish Enterprises

"Corporate Social Responsibility on the Annual Reports of IBEX 35 companies" by OBSERVATORIO DE RESPONSABILIDAD SOCIAL CORPORATIVA

- **Objective**: to evaluate the quality of information provided on aspects of CSR in documents and reports of public record by the companies that comprise the IBEX-35, i.e. Spain's 35 largest firms (Iberia, Inditex, Telefónica,…)

- International well-known **tools**:
  1. **Global Reporting Iniciative**
  2. **AA1000** Assurance Standard
  3. **New Economic Foundation**
  4. **ONU**:
     "Norms of Responsibility of Transnational Corporations and Other Business Enterprises with Regard to Human Rights " + UN Convention against Corruption + UN Consumer Protection Guidelines
  5. **Corporate Governance**:
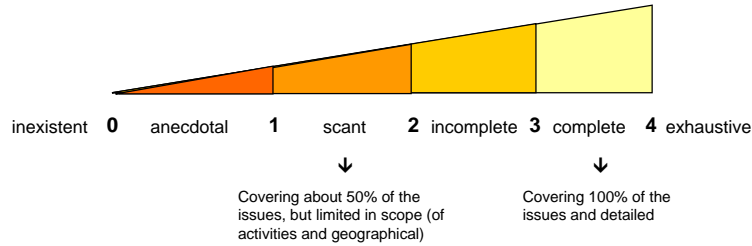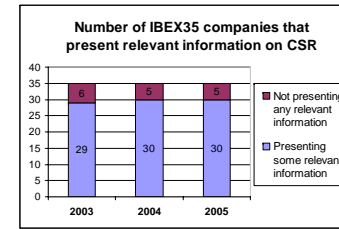   Aldama Code + CNMV recommendations + Sarbanes Oxley

Methodology

- **Indicators** are grouped in 3 axes:

CONTENTS		MANAGEMENT SYSTEMS					CORPORATE GOVERNANCE
GRI Indicators	UNO Human Rights	AA 1000		NEF	GRI		
		Principles	Requirements		Principles	Profile	

- **Information quality** is assesed according to this scale:

inexistent **0**   anecdotal   **1**   scant   **2** incomplete **3** complete   **4** exhaustive

Covering about 50% of the issues, but limited in scope (of activities and geographical)

Covering 100% of the issues and detailed

Study results

Number of IBEX35 companies that present relevant information on CSR

■ Not presenting any relevant information
■ Presenting some relevant information

→ 5 companies score so low that are considered not to manage CSR at all

Results summary 2003-2005

	CONTENTS	MAN. SYST.	CORP. GOV.	TOTAL
□ 2003	0,45	0,67	2,09	0,88
■ 2004	0,74	1,01	2,25	1,14
□ 2005	0,85	1,1	1,63	1,09
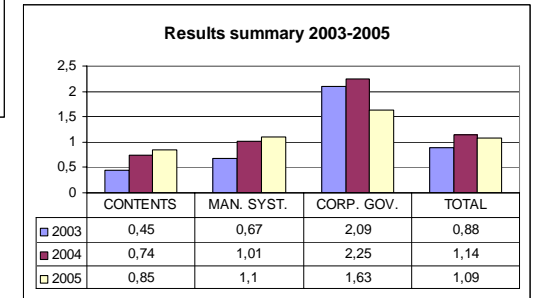
→ Average result drops slightly (0.05 points, 4%)

Contents and Management Systems maintain growth trend
Corporate Governance falls dramatically due to more demanding requirements

---

Some remarkable results: Contents

ASPECT	INDICATOR	COMPANIES fulfilling	
Economics	**Taxes breakdown** by country	8 (23%)	→ Important data to understand companies' contribution to developement in those countries
Environmental	Significant environmental impacts of main products and services	12 (34%)	→ Difficulties interpreting the data
Workers' rights	Commitment to protect **workers' rights** in countries that don't guarantee them	1 (3%)	→ Highly vulnerable
Corruption	Prevention of **corruption** (public officials and between companies)	7 (20%)	
Human rights	Commitment to not using children's work	18 (51%)	→ Lack of monitoring systems
Consumer protection	Renunciation to using abusive contractual practices	1 (3%)	

Some remarkable results: Management Systems and Corporate Governance

- **Disconnection** between commitments, procedures and obtained results
- Limited geographical scope (**no supply chain focus**)
- Scarce evidence of systems to interact with **stakeholders**
- 80 % of the companies don't offer data on **remuneration of the managing** directors, and only 20% report that the remuneration is related to non-finantial goals
- Presence of **women** in high management positions keeps being negligible, especially in the Board of Directors (less than 3%)
- Every company has mayority of independent managing directors on the Board of Directors, but 40% of them doesn't fulfill the requirement of the Presidents of the Audit Committee and of the Appoinments and Retribution Comittee being **independen**t
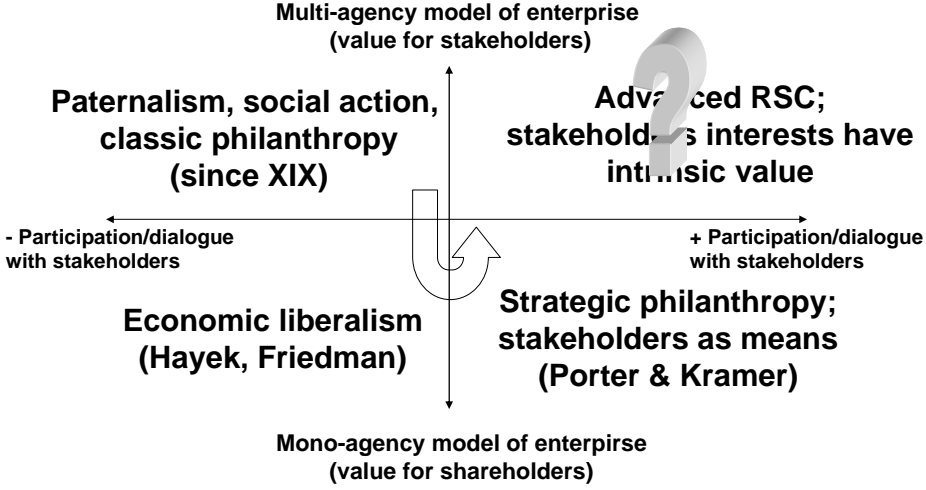
Moral matters

The symmetry principle and moral
agency in/between organisations

Stig Larssæther

Overview

- About the symmetry principle and STS
- Organisations versus organising in STS
- Methodological and analytical implications
- Problems - the search for political relevance
- Solutions - moral landscapes

The symmetry principle

- Reaction to technological determinism
  - Technology as a-social, a-political practice field
  - Science and technology as contingent and relational processes
- Anti-dualistic approach
  - Leveling human and non-human actors
  - Making visible moral agency carried by material artefacts
  - Mutual shaping of inhabitants in collectives (Latour, 2005)

Organisation vs organising

- "Society is not what holds us together, it is what is held together" (Latour)
  - Stability/structure as exception that needs explanation
  - Configurations of people and things create temporarily stabilized realities
  - Stabilizing work often black-boxed, made invisible in cold places- necessary or true appearance

Analytical and methodological implications

- Criss-crossing of socio-material practice fields
  - Interrogation of human and non-human actors
  - Dirty snowballing unraveling monsters
- Rewarding empirical strategy to seek out controversies/hot places
  - ambivalence and relativity
- A posteriori assumptions of moral agency
  - Unraveling of configurations can be disturbed by a priori assumptions (rational man, attitude-behaviour, org. unity)
  - Heterogeneous practice fields often entail distributed agency

An emerging macro actor

Ideas about nature

Consumer images

Eco-normative calculation

Organic milk

Fridge

Consumers
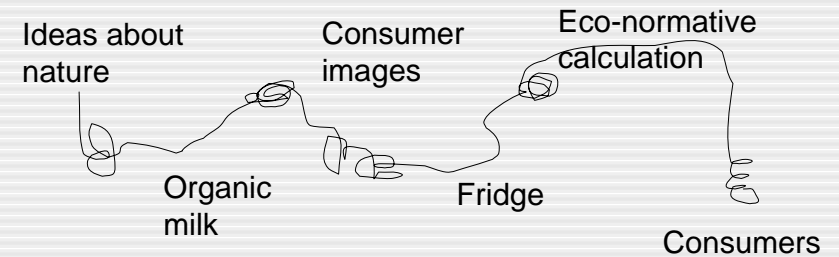
Political relevance and agency

"Conceptualizing agency as a distributed effect is a very powerful analytical strategy but politically difficult because of the immanent danger of equalizing humans and machines to the point where responsibility and accountability for action vanishes. To overcome this problem, says Lucy Suchman (1999), we need "to develop a discourse that recognizes the deep mutual constitution of humans and artifacts without losing their particularities." "(Stalder, 2000)

Moral landscapes

Affordances?

Scripts?

Ontological politics

Slide 1
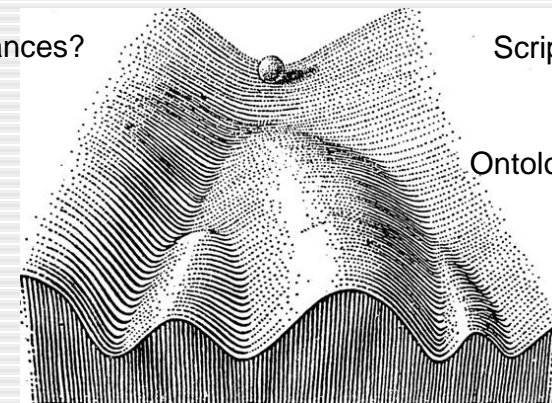
Do socially responsible brands lead to socially responsible companies?

-

A PhD-project on the relationship between external communication and organisational change

Øivind Hagen
PhD-scholar NTNU/ SINTEF

Presentation at NTNU-seminar 22nd Nov. 2007
"CSR in global production systems –
conceptual and applied issues"

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Slide 2

My project/message

- Understand how external communication could be a driver for internal change in organisations

- Shed light on how social values have become part of the brand

- What happens when companies portray themselves as proactive, as pioneers and as socially responsible?

- Link marketing/branding-theory with organisational-theory

- Generate knowledge about change in expressive organisations

- Investigate CSR as the meeting point between marketing, reputation and organisational identity

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Slide 3

Defining CSR

- CSR is *"… the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large* (WBCSD, 1999: 3)

- Triple bottom line: economy + social + environmental (Elkington, 1998)

- Five dimensions: Triple bottom line + voluntary + stakeholder (Dahlsrud, 2006)

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Slide 4

My approach to CSR (I)

- The industrial economy

$ $ $ $ $ $ $
M/B/S
Prod.
PD/CD
Workload

- The brand economy

$ $ $ $ $ $ $
M/B/S
PD/CD   Prod.
Workload

NTNU   4   SINTEF
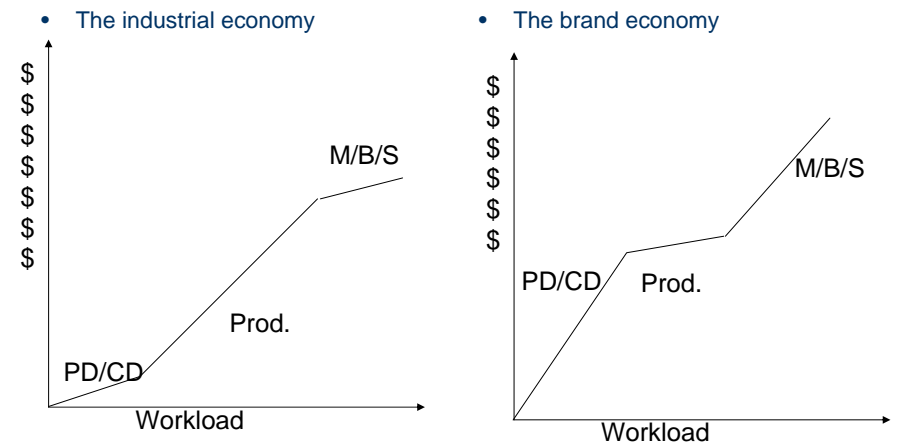
My approach to CSR (II): Globalization and post-industrialisme

- From excess demand to excess supply
- Market-orientation, commersialization
- Political liberalization – Reaganomics and Thatcherism
- The collapse of the Soviet-union
- Radical innovations within ICT
- Dismantling of trade barriers – free flow of capital and gods
- From product to brand
- **Shift in balance between state, capital and civil society**
- **Power concentration in business and a need to legitimate the new position**
- **Ethics and environment are being commercialised and become part of the brand**

My approach to CSR (III)

- CSR is…
  - an acronym developed by business in the 1990s as a response to the gobalization-critique
  - a concept/language for business to take part in the discourse on sustainable development and its own role in society
  - a way of commersializing social values

- CSR is the meeting point between
  - … marketing, PR and OD
  - … image, reputation and org. identity
  - … commercial communication, non-commercial communication and organisational culture

Towards a new way of changing organisations?

Traditional OD	Branding as a driver for OD
- Change fulfilled – then branded	- Change branded and exposed – then fulfilled
- congruity	- Incongruity creates moment in the change-process
- Defreeze – change – freeze - branding	-branding - defreeze – change – freeze
- safe?	- Playing with fire?
- Change driven by internal stakeholders	- Change driven by both internal and external stakeholders
- legal rational/bureaucratic leadership	- Charismatic leadership?
- Stakeholders in a passive role	- Stakeholders in an active role
- defensive/reactive?	- proactive?

CSR gets part of the HÅG-brand (I)

- HÅG Annual report, 1993:1

*"…"Norway as one of the world's richest industrial nation ought to reconsider its concept of growth. The planet is a closed system. Unless we chose a new strategy, our consumption and waste-problems will ruin our foundation for existence. We need to move from a 'use and throw away'-mentality to a 'use and reuse'-mentality"… **In the HÅG-management we have already for several years considered how to take this problem seriously"***

CSR gets part of the HÅG-brand (II)

- *HÅG Annual report, 1995: 20:*

*"Access to clean water and sufficient food for a rapidly increasing population are fundamental requirements which need to be met. **From this perspective, can HÅG justify manufacturing chairs?**"*

CSR gets part of the HÅG-brand (III)

- *HÅG annual report, 1997: 25:*

*"HÅG is responsible to keep materials alive as long as possible. **Waste is resources that have lost their way.** We have developed second-hand soda corks as a standard raw material for seats and backs…"*

CSR gets part of the HÅG-brand (IV)
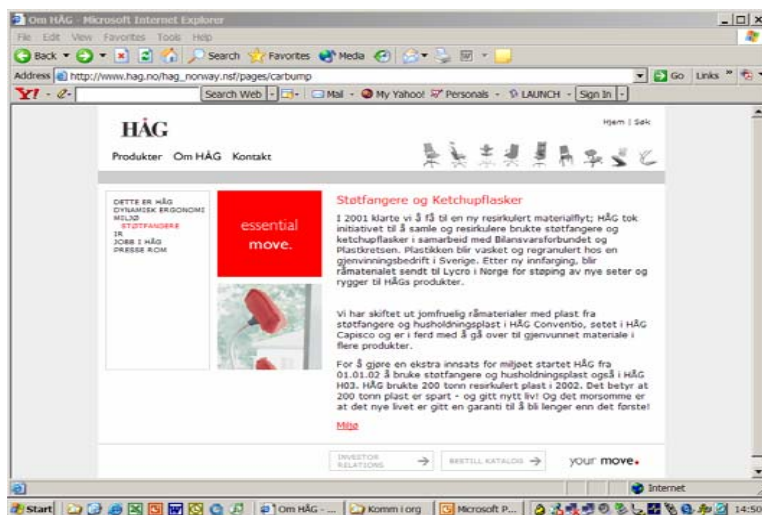
CSR gets part of the HÅG-brand (V)
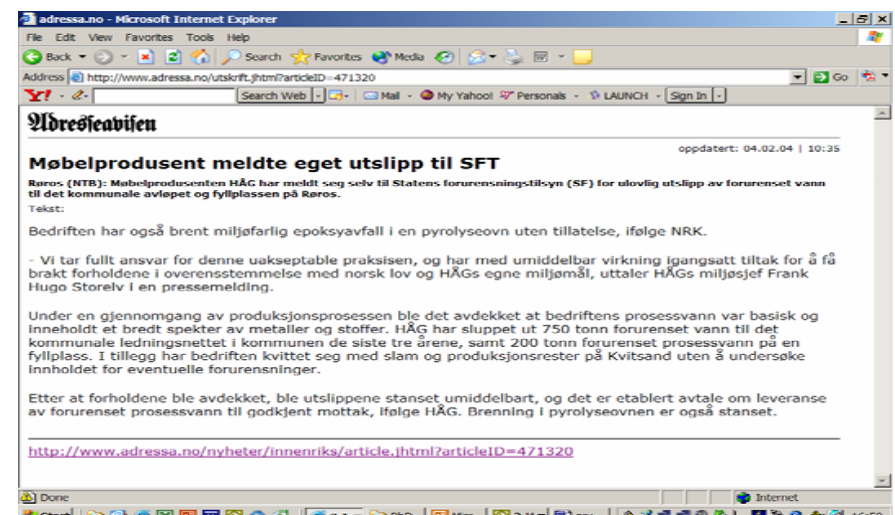
Article 4:

"Seduced by their proactive image? On using auto communication to enhance CSR"

- Weick's enactment theory

- Auto communication

- HÅG was exposing proactivity through CSR

- HÅG was communicating proactivity to themselves

- First phase: Self-fulfilling prophesies

- Second phase: Seduced by their proactivity?

Slide 1

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Innovation and Creativity

A framework for designing socio-technical systems

Cecilia Haskins

Department of Industrial Economics and
Technology Management
22.nov.2007

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Slide 2

If we destroy more forests, burn more garbage, drift-net more fish, burn more coal, bleach more paper, destroy more topsoil, poison more insects, build over more habitats, dam more rivers, produce more toxic and radioactive waste, we are creating a vast industrial machine, not for living in, but for dying in.

William McDonough – author Cradle to Cradle
Centennial Sermon – February 7, 1993

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Slide 3

Design

- … a form of communication among people that enables their ability to collaborate and transfer their concepts of a selected solution into action

  Churchman, xxxx

- Socio-technical systems
  - Solutions that use technology to meet the needs of people

- Collaboration
  - … the act of creation – in union with others

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Slide 4

Layers of design integration

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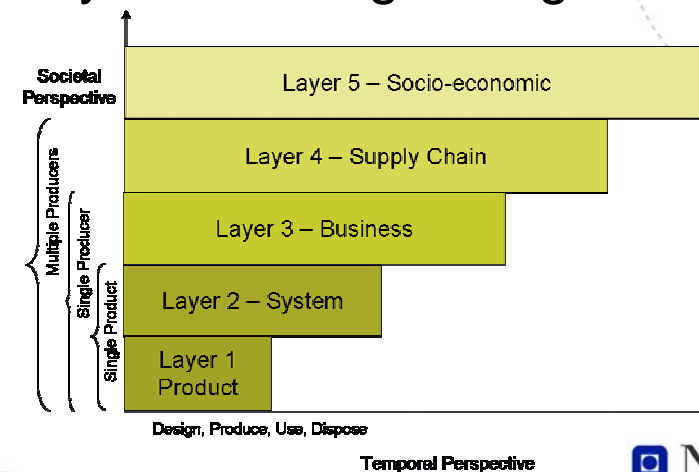
Framework for collaboration

- Identify stakeholders

- Frame the problem

- Analyse alternatives

- Choose and implement

- Evaluate – continuously

```
        i
   C    E    F
        A
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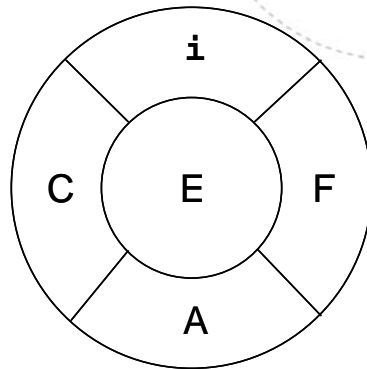
Story of Verdal

- Plant closing threatened 900+ jobs in 1999
- Swift and responsible action by management averted potential crisis
- Verdal has been receiving national funds since 2002; the allocation ends March 2008
- Money combined with local mentors has yielded impressive growth
- Leaders looking ahead to ensure future prosperity and growth within the municipality and the region

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Verdal in crisis

危机

Danger and Opportunity

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Verdal and `i`FACE – `i`

`i` – identify stakeholders
- Early notification to all impacted employees;
- Special training and educational opportunities;
- IndPro – first incubator in Norway –provides mentoring and good advice;
- Political support – funding from the municipality and 'omstillingsprogram' from Norwegian government

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VIP stakeholders
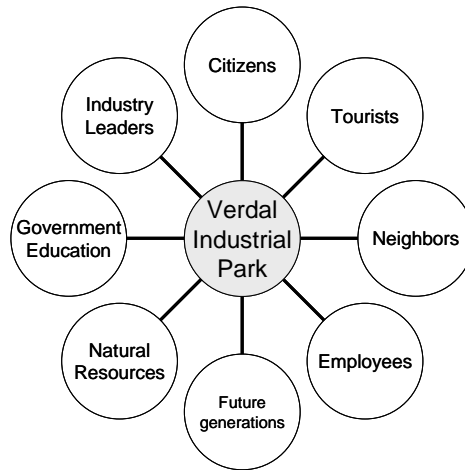
Verdal and iFACE – F

F – frame the problem

Rather than see the lost jobs as a problem that belonged to the employees, or the community alone, Aker Verdal management saw this as a joint challenge; they provided funding through IndPro and gave over the former administration building to house the new incubator and jump-start the industrial park

Today, the community is looking for ways to keep their young professionals in Verdal to ensure continuity into the next generations

---

Verdal and iFACE – A

A – generate alternatives
• Many negative scenarios were possible
• A vision to come out of the crisis stronger led to investments in training and funding assistance for entrepreneurial ventures

Today, leadership is looking to improve the ecological footprint of the industrial park while inviting new firms to ensure continued growth in jobs and opportunities

---

Verdal and iFACE – C

C – choose and implement a course of action

Within months of the announcement that the jobs would be lost (1998), IndPro had been established, and other positive actions described above were underway. Application for national funding took more time, but that appeared in 2002 (which is not a long time in political decision-making cycles)

Special programs addressing the needs of young professionals have begun in 2006 – mentoring in existing jobs; help in realizing own entrepreneurial impulses

Slide 13

Verdal and `iFACE` – E

E – evaluate

Each action was accompanied by continuous scrutiny and progress assessment – this has resulted in a rich archival record

Permission to observe the process from NTNU graduate students resulted in independent assessments of the activities

This case study is expected to yield results that support future decision-making – thus continuing the cycle!

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Slide 14

Start-ups and turnover

Is job creation slowing down?

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Slide 15
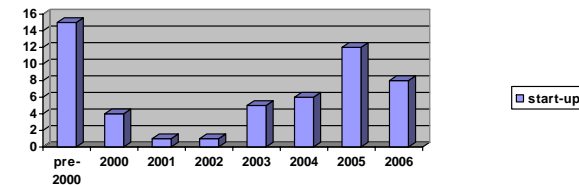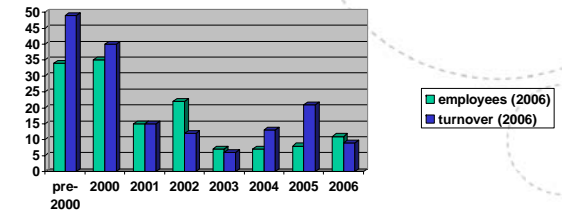
Sustainability

- Questions selected to gauge
  - Are VIP firms a good place to be employed?
  - Do VIP firms recognize social responsibility?
  - Are VIP firms economically viable?
  - Do VIP firms prioritise their stewardship of the natural environment?
- Interviews identified a bias in the questions for firms engaged in heavy industry; e.g. measuring and monitoring emissions

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Slide 16

Sustainability findings - Social

- 94% provide excellent work conditions
- 88% conduct open dialogues with employees
- 85% implement employee health and safety measures
- 83% maintain employee skills with training
- 83% report a good relationship with the local community
- 77% monitor employee satisfaction
- 69% equitable hiring and salary policies
- 52% consider the local community a stakeholder of the firm

Overall – excellent Social awareness translated into practice
From interviews, determined that most respondents probably did not understand the term stakeholder

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Sustainability findings – Economic

- Fewer questions asked, since only viable firms were contacted – a look at overall statistics would show the number of firms that closed their doors in 2006
- 38% practice "green" acquisition
- 29% invest to improve eco-performance

Overall – minimal awareness of eco-effectiveness, especially among smallest firms

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Sustainability findings - Environment

- 58% practice recycling measures
- 44% have energy saving devices installed
- 17% report their eco-performance externally
- 80% found the production-specific questions irrelevant
- Of the remaining 20%, 80% observed most of the eco-practices mentioned in the survey

Overall – eco-performance is probably better than reported, based on interviews and question biases

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Sustainability – room for improvement in VIP

- Potential to strengthen ties to community
- Potential to influence the eco-performance of the supply chain through acquisition practices
- Potential to integrate recycling and care for natural environments into strategic level decision-making

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Conclusions

- The definition of each sustainable community belongs to the people who live in the place – provided they observe basic tenets of equity and stewardship
- Collaboration framework can be applied to creating and maintaining a sustainable community
- Entrepreneurial investment does strengthen a community

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Further research

- Work with Verdal has just begun
  - Just now meeting political decision-makers
  - When the National funding stops, what happens next?
  - So much potential and a great deal of willingness to continue to make progress toward sustainable development in VIP and emerge as a sustainable community in the municipality

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My vision
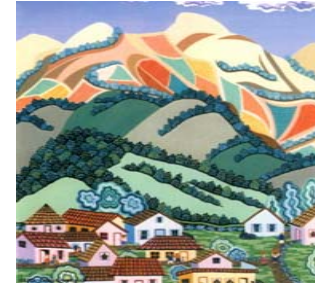
Norway will adopt a national program for the creation and maintenance of sustainable communities

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Sustainability Strategies in

Product design

Dr. Martina Maria Keitsch
The Oslo School of Architecture and Design

A sustainability rationale for design:

"…to take all ecological, social and economic concerns into account in products and services, meeting the needs of society now and in the future."

(free after Brundlandt)

Development from sustainable strategies to towards sustainable design

TM
Re-THINK

DFE
Re-DESIGN

DFD
Re-FINE
eco-efficiency

CP
Re-PAIR
'end of pipe'

situation today

environmental benefits

time
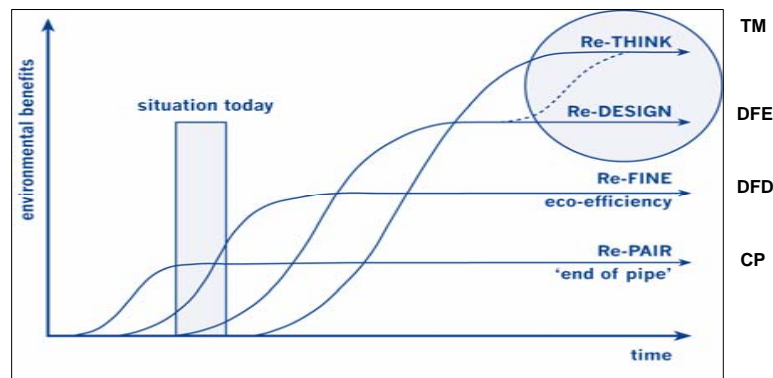
The Centre for Sustainable design, 2002

The design process is diverse

Areas	Methods
Technology:	Physics, Material Techn. Mechanics, Electronics Information Technology
Economy:	Cost-Benefit
Sustainability:	Risk Assessment LCA, DFE, MFA

Use :	Methods
Experience:	Psychology
Identity:	Social theory
Communication:	Ergonomics
Interaction:	Cultural theories Ethnology Semantics

Aesthetics:	Methods
Form, Appearance	Formal Aesthetics
Perception	Aesthetic theory
Interpretation	Art/design theories Semiotic/Semantic

CONCEPT

IDEAS

NEED

PRODUCT/ SERVICE SOLUTION

… and trade-offs often difficult

Personal development
Quality for society

Wealth in society

Environment

Profit

Health

Functionality

Safety

→ Purpose-mean relationship

Conflict of values →←
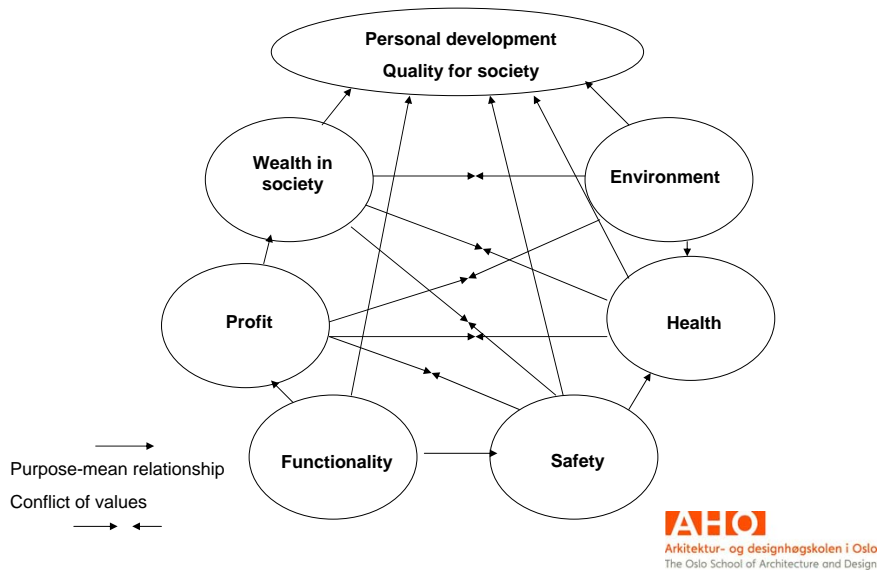
Approaches to sustainable design

The aim of sustainable design is to develop products and services that are in line with the triple bottom line principles of ecological, economic and social sustainability. The weighting of the principles is different. Some design approaches such as "DFE" put most emphasis on ecological factors, while others such as the "thinking map" try to integrate all three in a holistic design perspective.

Ecological principles in product design:
Materials - using less material (lightweighting), fewer materials (making it easier to recycle) and if possible avoiding toxic substances and choosing renewable or recycled/recyclable.
Dematerialisation - could include some of the above, lightweighting for example, but also designing things to be multifunctional, or finding a different way to deliver the same benefit through a service or product-service combination, variously referred to as selling performance or results, or 'product service systems' (PSS).
Design for disassembly - making things easy to take apart so they can be repaired, serviced, upgraded, remanufactured, or recycled, such as through modular design, or smart materials which can self-disassemble when needed.
Energy - both in production (which would mean looking at the manufacturing process), and in use and disposal. This includes minimising energy use, moving to the use of renewable energy, and extracting energy from waste in some cases.
Life extension - keeping a product, or its parts or materials, in productive use for their optimal lifespan, so slowing or preventing the linear flow of materials from extraction and processing to disposal.

Design Council UK, Sustainability, B. K. Otto

Design for Environment (DFE) has evolved out of concurrent engineering and product life-cycle analysis (LCA).

DFE developers apply this approach to all potential environmental implications of a product or process being designed—energy and materials used; manufacture and packaging; transportation; consumer use, reuse or recycling; and disposal.

DFE tools enable consideration of these implications at every step of the production process from chemical design, process engineering, procurement practices, and end-product specification to post-use disposal.

DFE also enables designers to consider traditional design issues of cost, quality, manufacturing process, and efficiency as part of the same decision system.

LCA for the electric car "THINK"

Produksjon, bruk av råmaterialer for å bygge komponenter til bilen → Produksjon av bilens komponenter → Transport av komponenter til Aurskog-fabrikken

Sammensetning av komponentene til ferdig bil i fabrikken → Bilens bruksfase → Resirkulering og avfallsbehandling av den brukte bilen
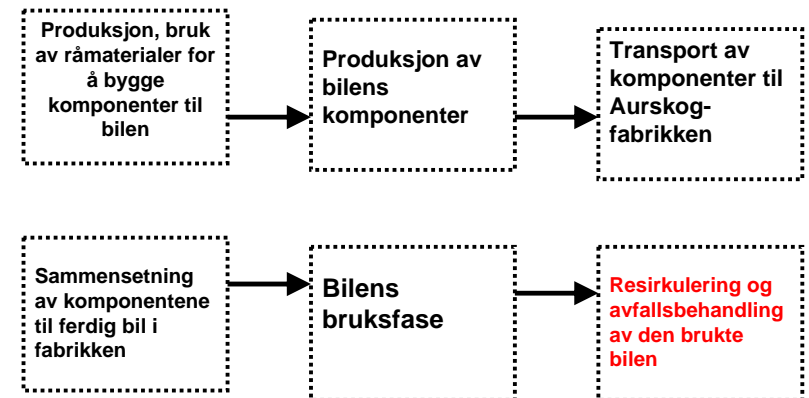
Pro and contra E-car (post hoc evaluation)

E-BIL	PRO	CONTRA
Teknologi	➢Lett å produsere	➢For langsomt ➢Batteriet er for tungt ➢Bare to seter
Sikkerhet	➢Ved bare 60km/h blir kollisjoner ikke så vondt	➢For lite bil minsker følelse av sikkerhet
Økologi	➢Ingen CO2 og SO2 ➢Lite støy ➢Effektiv forbruk av strøm	➢Batteriet er lagt av aluminium (trenger masse energi for framstilling) ➢Dårlig resirkulering ➢Miljøvennlighet er avhengig av strømkilder
Økonomi	➢Drift er billigere en for bensinbil ➢Skatte-, bom- og parkeringsfordeler	➢Høye anskaffelseskostnader
Andre	➢Fremmer diskusjon om bærekraftig mobilitet	➢Ikke egnet for bygda ➢Ingen status symbol ➢Ingen infrastruktur for bil, Strømstasjoner etc.

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Arkitektur- og designhøgskolen i Oslo
The Oslo School of Architecture and Design

Interrelation of different areas under sustainability principles

Values
Governmental rules
Interaction conventions
P.,C., D. modes
Market regulations etc.
P/S system requirements
product requirements

Human System (Ethos + Individual)
Political System
Social System
Economic System
Market System
Products & Services Systems
Services, Products

Adapted from: Dewberry, E., de Barros, M., Design for Durability
Seminar, Design Council – London, 11th of April 2006

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The Oslo School of Architecture and Design

Methodological approach: Thinking map

Macro

System-flow | B

A | Orientation

Sustainable Principles
Sustainable Guidelines
Sustainable Criteria

material

non-material

Material Solution -function | C

D | Activity solution -experience

Micro

Wigum 2004

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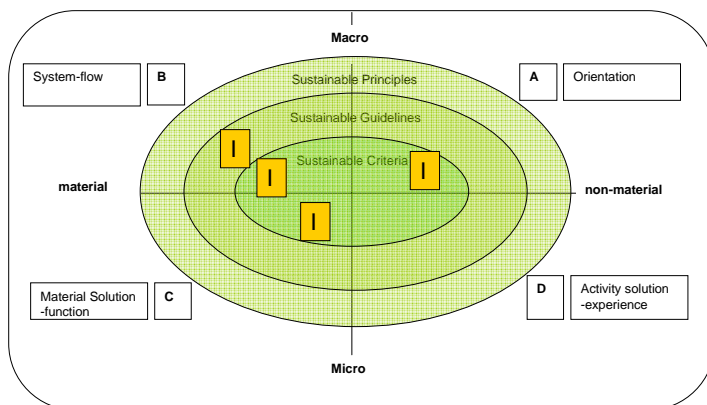
Case: Passenger transport	Sustainable Principles	Sustainable Guidelines	Sustainable Criteria
Orientation (Attitude representation)	Transport issues need to be incorporated more directly into the political decision-making process	Establish transport policies on resource efficiency	Average annual passenger transport use Cost of transport for household **SELECTED TBL INDICATORS**
System flow (Ecosystem representation)	Supervision and optimisation of transport at the interface of socio-economic systems and the natural environment	Apply holistic approaches to transport systems Measure sustainability of performances **ECO INDICATORS**	Total amount of energy used and emissions for transport Type of energy sources **SELECTED ECO INDICATORS**
Material Design solution	Design of innovative approaches bridging the gap between the status quo and the desirable situation	Optimize possibilities for local conditions, transport habits and modes of mobility	Degree of change towards sustainable mobility, on system and product/service level **SELECTED TBL INDICATORS**
Activity solution (User satisfaction)	Personal understanding and altered behaviour of the stakeholders	Coordinate transport activities and introduce alternatives	Degree of coordinated activities Number of new product service and other solutions implemented

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The Oslo School of Architecture and Design

THINKING MAP	Advantages	Disadvantages
Companies	- Transparency of choice - Holistic considerations - Justifiable for customers	-Time consuming - Resource consuming - Depends on designers know-how (SME dilemma)
Designers	- Allows more solutions - Trade-offs transparency - Improved communication with clients	- Requires many information - Disturbs creative process - Expensive in contracts

Slide 1

Recent Academic Developments in Green Value Chain Management

- From an ecodesign perspective

Casper Boks
NTNU - Department of Product Design

NTNU
Innovation and Creativity

Slide 2

Presentation outline

- Some historical perspective on 'ecodesign and related' research developments
  - From ecodesign → sustainable product innovation → green value chain management

- Some views on current status of green value chain management research
  - Lessons learned from past research and experience (literature & practice)

- Some discussion on possibly undervalued (future?) research avenues

NTNU
Innovation and Creativity

Slide 3

Slide 4

Quotes from literature

'...even in countries where method development, education and dissemination are reasonably mature, actual environmental product design still scores relatively low in the maturity profiles...' (Tukker et al.)

'...there has been a lot of talk of environmental product development, but relatively little change in practice...' (Baumann et al.)

'... it is important not only to understand how the process operates, but also to understand the whole culture of the product development community...' (Fiksel)

'...product design developers tend to be arrogant, and are generally talented and creative individuals, with strong engineering skills. They tend to be suspicious of anyone who offers help, as well as anyone who seems to complicate their busy lives' (Fiksel).

NTNU
Innovation and Creativity

Recent developments

- A variety of scholars has chosen/suggested a variety of topics to address the 'lack of momentum':
- What can be observed as relatively recent, partly unexplored research directions in Life Cycle Management or Green value chain management?

  - ➢ Focus on the role of the individual designer
  - ➢ Managing internal and external value chains
  - ➢ Green Communication, Consumer Education, Marketing
  - ➢ Performance measurement and environmental accounting
  - ➢ Orientation towards other dimensions of sustainability
  - ➢ Focus on the soft side of ecodesign
  - ➢ Customisation of green value chain management strategies

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Customisation of green value chain management

- Sofar, academic efforts towards methodology mostly focus on 'general´ audiences
- Methodologies/approaches often do not go beyond rules of thumb (e.g use of recycled plastics)

"Designers want small facts, like: what materials can be recycled? What plastics are biodegradable, and can you print on them? It would be nice if someone made factsheets like that with objective information..."
(Conny Bakker, 1995)

Customisation of green value chain management

- Sofar, academic efforts towards methodology mostly focus on 'general´ audiences
- Methodologies/approaches often do not go beyond rules of thumb (e.g use of recycled plastics)
- There is a need for customisation (on different levels)
- Regional customisation starts to kick in
- Within electronics industry, there is very little customisation until now

Green value chain management clusters

	Size	Geographic	Product lines	Customer value proposition	Pricing strategy	Appreciation customer surveys
Value companies cluster	Large	Northern America, Japan, Europe	Many	High	Competitive	High
Reactive companies cluster	Medium-large	Japanese, Korean	Many	Medium	Medium price/ Aggressive	Medium
Niche players Cluster	Small	Northern America, Japan, Europe	Few (niche)	Very High	High price	Very High
Local Chinese Cluster	Small-medium	China	Few/Many	Low	Low price/ Aggressive	Low
Low visibility giants Cluster	Very large	Far East	Many	Medium	Mainly B2B	Medium

Note: these are all guesstimates

Focus on the soft side of ecodesign

Results from a 2004/2005 study show that:

	Top three success factors in ecodesign implementation	Top three obstacles for ecodesign implementation
Towards conceptualization	• Customization • Roadmaps, Checkpoints • Commitment	• Gap between proponents and executors • Organisational complexities • Lack of cooperation
Towards operationalization	• Integration in all business activities • Customization • Roadmapping	• Lack of market demand • Lack of goals and vision • Still not enough legal incentive

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Exploring the 'Soft side of ecodesign further using perspectives from change management theory' *(Verhulst, 2007)*

• Factors under consideration:
  – Human factors (personality, attitudes, stress,…)
  – Communication
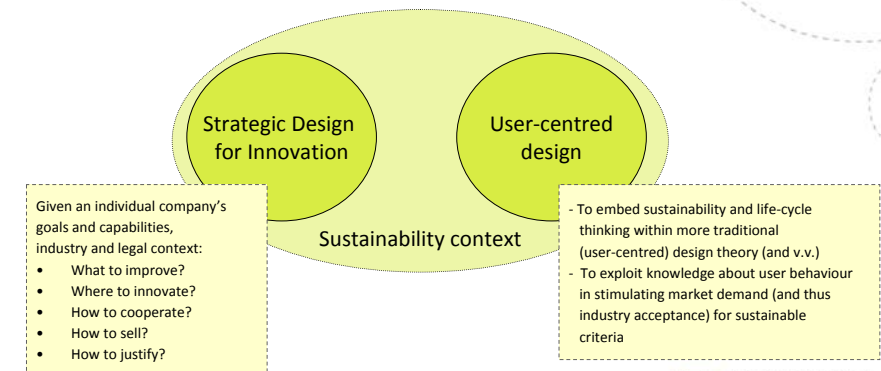 – Resistance to change

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Orientation towards other dimensions of sustainability

Challenges related to broadening of scope

- Performance measurement
- Accounting of ecodesign activities is difficult
  - No explicit way for keeping track of in- and outputs
  - No explicit way of linking to traditional criteria
  - Even more challenging for sustainability (social) performance
- How do you add up 1 monetary unit, 1 unit of CO_2 emission, and 1 unit of possible child labour in the supply chain, and subtract 1 unit of improved image or 1 unit of becoming a preferred supplier.
- Even worse: how to do that on *a product level? Or department level?*

- GRI guidelines provide little support for *in-business* environmental or sustainability accounting processes

---

Conclusion for IPD's research strategy

Strategic Design for Innovation

User-centred design

Sustainability context

Given an individual company's goals and capabilities, industry and legal context:
- What to improve?
- Where to innovate?
- How to cooperate?
- How to sell?
- How to justify?

- To embed sustainability and life-cycle thinking within more traditional (user-centred) design theory (and v.v.)
- To exploit knowledge about user behaviour in stimulating market demand (and thus industry acceptance) for sustainable criteria

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Thank you for your attention

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Developing an operations strategy framework based on social responsibility requirements

Dr. Edson Pinheiro de Lima
Warwick Business School – WBS (UK)
Pontifical Catholic University of Paraná – PUCPR (Brazil)

Curitiba - Brazil

Curitiba – Paraná - Brasil

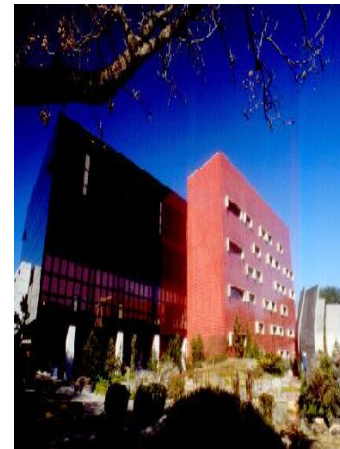## Pontifical Catholic University of Parana

PUCPR

::: General Data
  ::: Founded in 1959
  ::: PUCPR has five *campi:* Curitiba, São José dos Pinhais, Londrina, Maringá and Toledo
  ::: 52 Undergraduate courses
  ::: 20 Graduate Programs
  ::: 1,345 faculty members
  ::: 25,000 students

www.pucpr.br

PUCPR

CENTRES

Theology and Human Sciences (CTBA)

Social Sciences and Law (CTBA)

Medicine and Biological Sciences (CTBA)

Mathematics and Technology (CTBA)

Agricultural and Environmental Sciences (SJP)

Social Applied Sciences (SJP)

Science, Technology and Production (TOL)

Business and Law (LON)

Produtronics Group - PUCPR

::: Produtronics Group main purpose is to study the design, implementation and integration of operations systems (manufacturing and service operations).

Produtronics - Activities

::: Undergraduate courses
  ::: BSc in Automation and Control Engineering (Mechatronics).
  ::: BSc in Production Engineering (Management and Logistics).

::: *Lato Sensu* Graduate Programs
  ::: Production Engineering
  ::: Industrial Mechatronics
  ::: Business Engineering
  ::: Knowledge, Information and Technology Management
  ::: Maintenance Engineering
  ::: Product and Processes Quality Management

Produtronics - Activities

- *Stricto Sensu* Graduate Programs
  - Industrial and Systems Engineering Graduate Program

    - Production Management and Logistics
      - Operations Management
      - Product Engineering and Systems Design
      - Strategy, Technology and Organisations

    - Systems Integration and Automation
      - Control Systems
      - Systems Design and Integration

Outline

- CSR and Operations Strategy Context
- Research guidelines
- Theoretical assumptions
- Operations Strategy framework
- CSR integration
- Research planning
- Discussion
- Conclusion

Operations strategic management context

- Organizations are paying closer attention to the changing nature of the operations systems performance, to the point where the operations strategic management system used in the enterprises performance management is the main focus of redesign projects (Gomes *et al.*, 2004).

Operations strategic management context

- The operations strategic management system that encompass the measurement subsystem should be conceived to (Neely, 2005):
  - deploy enterprise strategic performance management instead of performance measurement systems;
  - develop dynamic rather than static strategic management systems;
  - enhance the flexibility of performance measurement systems, improving its capability to cope with organisational changes.

CSR context for operations strategy

⠿ "Before rushing off to find the missing link between a firm's social and financial performance, all in hopes of advancing the cause of social performance, we need to understand the conditions under which a corporation's efforts benefit society…"(Margolis and Walsh, 2003).

CSR context for operations strategy

⠿ "…This asks us to question corporate social performance and competing conceptions of the firm down to their very roots. Personal values and commitments will not doubt orient the theories we prefer and the research questions we ask… "(Margolis and Walsh, 2003).

CSR context for operations strategy

⠿ "…To honor those values and commitments, however, we must acknowledge and question them. Such appraisals ensure the quality of our research and integrity of our commitments. "(Margolis and Walsh, 2003).

CSR context for operations strategy

⠿ "Corporate Social Responsibility – CSR, in a general sense reflects obligations to society and stakeholders within societies impacted by the firm." (Boyd et al., 2007).

CSR context for operations strategy

- "Addressing social issues by creating shared value will lead to self-sustaining solutions that do not depend on private or government subsidies…"(Porter and Kramer, 2006).

CSR context for operations strategy

- "… When a well-run business applies its vast resources, expertise, and management talent to problems that it understands and in which it has a stake, it can have a greater impact on social good than any other institution or philanthropic organization." (Porter and Kramer, 2006).

CSR and operations strategy – research guidelines

- How could we define enterprise?
  - Technical system
  - Social system
  - Economic integration

A review of the "sociotechnic model" in order to review and extend "quality of working life" concepts

CSR and operations strategy – research guidelines

- How could we define value?
  - Generic social issues
  - Value chain social impacts
  - Social dimensions of competitive context

Responsive CSR versus Strategic CSR

CSR and operations strategy – research guidelines

⊞ How could we define operations?
- ⊞ Market based view
- ⊞ Resource based view

Reconciliation between external and internal based approaches mediated by Social Responsibility

CSR and operations strategy – research guidelines

⊞ How could we define performance?
- ⊞ Performance dimensions
  - ⊞ Market
  - ⊞ Environment
  - ⊞ Society

Cumulative capabilities operation in evolutionary organisational life cycle

Main objective

⊞ Comprehension of the Social Responsibility Role in companies' operations strategic management systems

Theoretical assumptions – content

⊞ An operations strategic management system may be defined as a system that uses the information to produce a positive change to organisational culture, systems and processes (Amaratunga and Baldry, 2002).

Theoretical assumptions - content

- The initial building blocks of all performance measurement initiatives, as they are materialized in a performance measurement system, are performance measurement recommendations (Folan and Browne, 2005):
  - these recommendations define the content and structures of the measures;
  - they could be organized in a framework that informs the performance measurement system design.

Theoretical assumptions - content

- A framework for the measures selection process may be founded in the competitive dimensions of manufacturing or service operations (Platts, 1995; Leong *et al.*, 1990; Slack, 1987):
  - price (cost/operational efficiency);
  - quality (process and product);
  - time (dependability and agility);
  - flexibility (process and product); and
  - innovation (process and product).
  - environment (pollution, sustainability)?!
  - society (quality of working life, life quality)?!

Theoretical assumptions - process

- There are four main processes related to performance measurement: design, implementation, operation and 'refresh', the latter process being a continuous system redesign or review (Bourne *et al.*, 2005; Neely *et al.*, 2000; Bourne *et al.*, 2000).

Theoretical assumptions - process

- A performance measurement system may lose its effectiveness over time if it is not redesigned to better attend new environmental and organisational demands (Bourne *et al.*, 2005; Franco-Santos and Bourne, 2005).

Theoretical assumptions - process

- The strategic management of the performance measure system will enable an organisation to develop continuous improvement and organisational learning capabilities through continuous reviews of the measurement system (Kennerley and Neely 2003; Kennerley and Neely, 2002; Johnston *et al.*, 2002; Kaplan and Norton, 2001; Neely *et al.*, 2000; Ghalayini and Noble, 1996).

Theoretical assumptions - strategic management

- Henry (2006) develops an understanding of the use of a performance measurement system based on:
  - a 'diagnostic' and 'interactive' use of a management control system.

- Simons (1991) found two patterns in managing a measurement system:
  - simple feedback control, and
  - 'interactive control'.

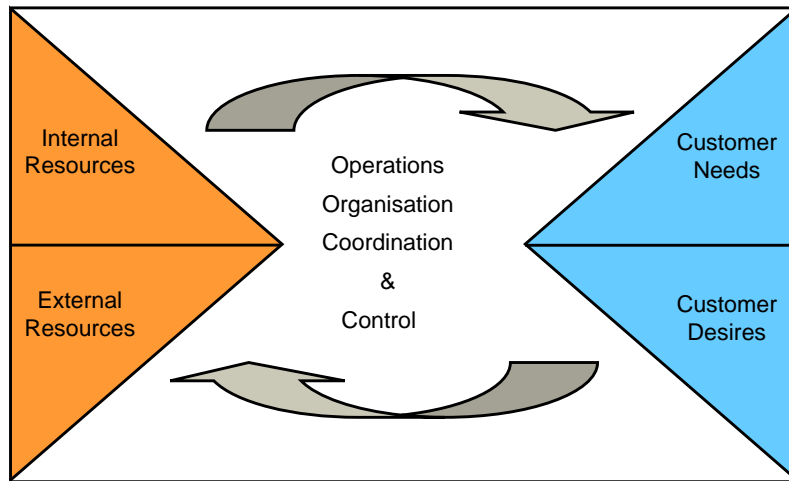## Theoretical assumptions - strategic management

- Henry (2006) and Simons (1991) models develop dynamic properties for a PMS as:
  - Strategic performance measurement system could be operated focusing organisational attention on strategic priorities. In that way, the organisational model could be seen as 'knowledge creating company' (Nonaka and Takeuchi, 1995).

Theoretical assumptions - strategic management

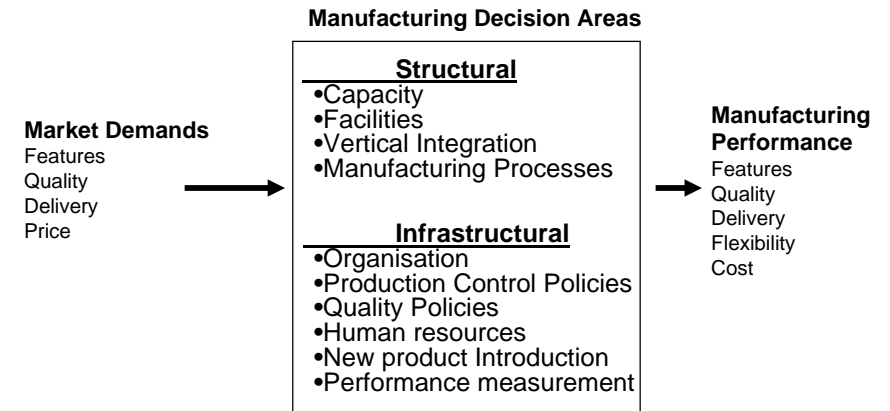- Henry (2006) and Simons (1991) models develop dynamic properties for a PMS as:
  - Market orientation, entrepreneurship, innovativeness, and organization learning capabilities developments are closely related to the strategic management approach used to manage the performance management system. Thus, the use of the measurement system could specifically contribute for a capability development.

Operations System

- Internal Resources
- External Resources
- Operations Organisation Coordination & Control
- Customer Needs
- Customer Desires

Source: Platts (2007)

Traditional operations strategy model

Manufacturing Decision Areas

Market Demands
Features
Quality
Delivery
Price

Structural
- Capacity
- Facilities
- Vertical Integration
- Manufacturing Processes

Infrastructural
- Organisation
- Production Control Policies
- Quality Policies
- Human resources
- New product Introduction
- Performance measurement

Manufacturing Performance
Features
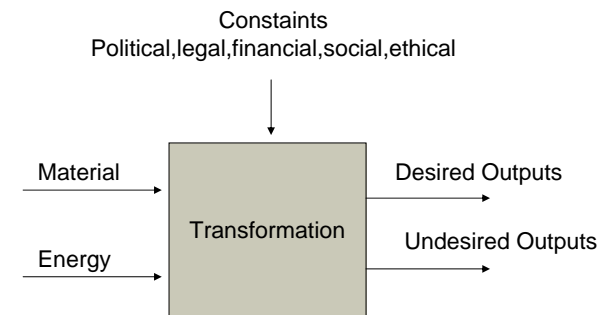Quality
Delivery
Flexibility
Cost

Source: Platts (2007)

Operations Strategy

A pattern of decisions, both structural and infrastructural, which determine the capability of a manufacturing system and specify how it will operate in order to meet a set of operations objectives which have been derived from business objectives.

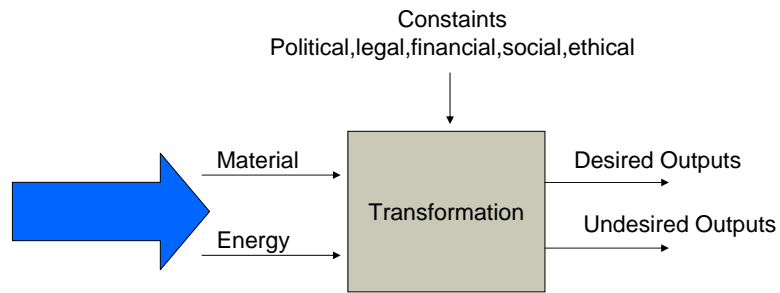Source: Platts (2007)

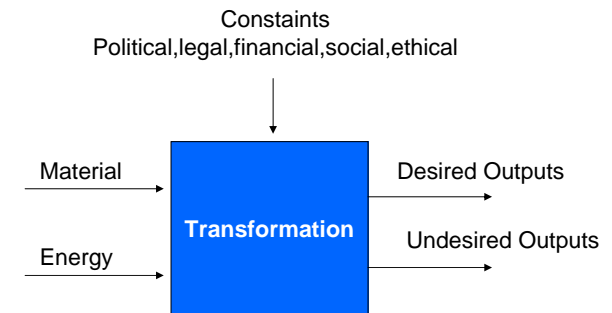## The heart of Operations is the transformation of inputs to outputs

Constaints
Political, legal, financial, social, ethical

- Material
- Energy
- Transformation
- Desired Outputs
- Undesired Outputs

Source: Platts (2007)

Operations Strategy element 1 - Inputs

Constaints
Political,legal,financial,social,ethical

Material

Transformation

Desired Outputs

Energy

Undesired Outputs

Source: Platts (2007)

Operations Strategy element 2 – Transformation process

Constaints
Political,legal,financial,social,ethical

Material

Transformation

Desired Outputs

Energy

Undesired Outputs

Operations Strategy element 3 – Improve outputs

Constaints
Political,legal,financial,social,ethical

Desired Outputs

Material

Transformation

Energy

Undesired Outputs

Operations Strategy element 4 – Feedback results
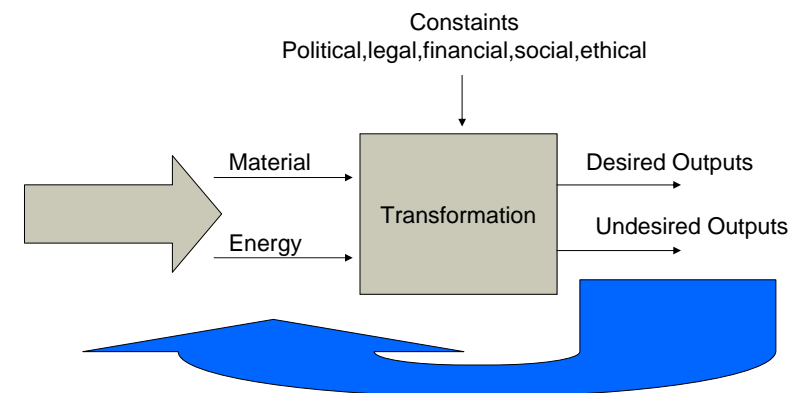
Constaints
Political,legal,financial,social,ethical

Material

Transformation

Desired Outputs

Energy

Undesired Outputs

Source: Platts (2007)

Operations Strategy element 5 – Rethink the inputs outputs and the transformation

Constaints
Political, legal, financial, social, ethical

? Material → Transformation → Desired Outputs ?

? Energy → Transformation → Undesired Outputs ?

Source: Platts (2007)

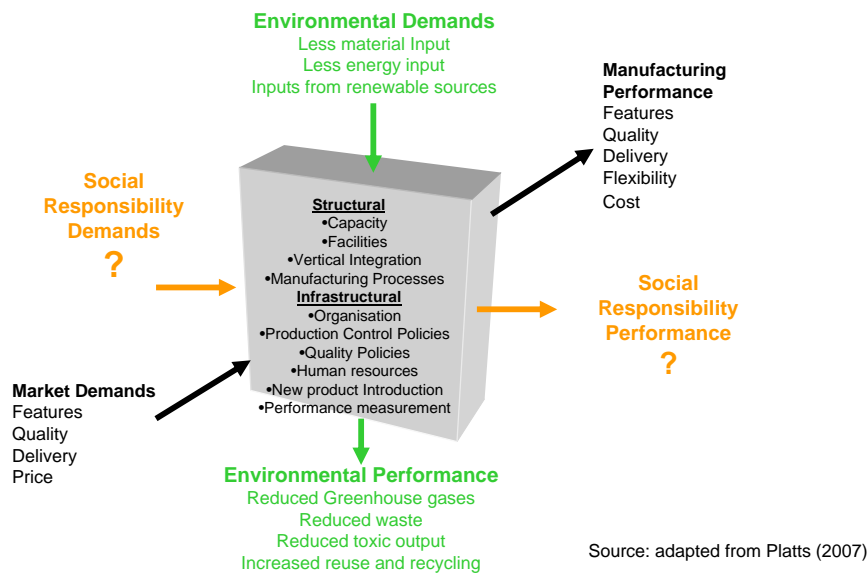# Operations strategic management system

Business Strategy + − → Operations Strategy → + − → Operations Strategy Realization – Projects and Processes → Events + + → Operations System → Performance

Operational Performance Measurement

Strategic Performance Measurement
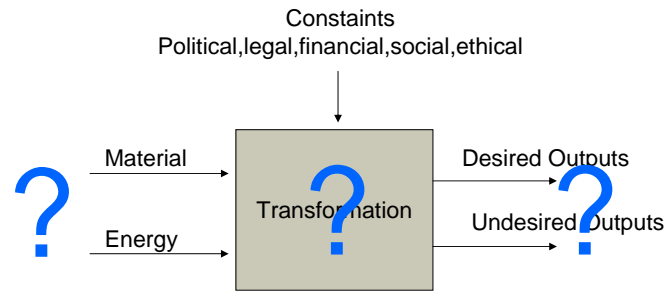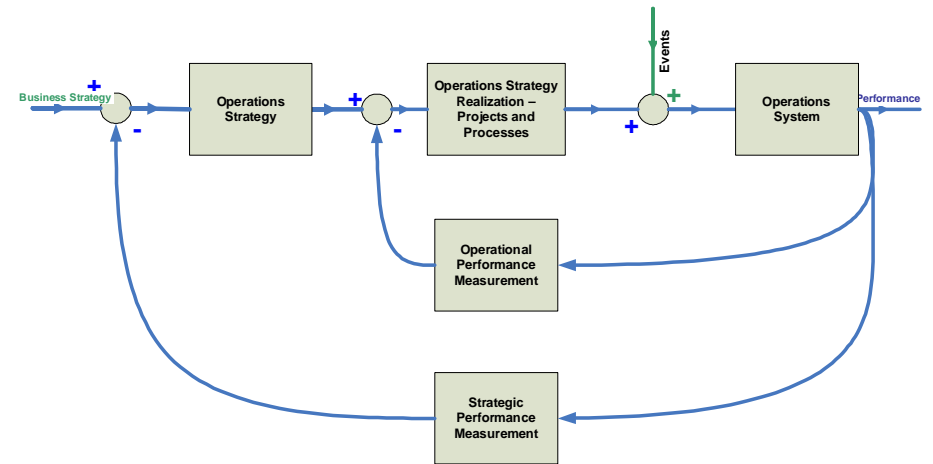
Source: Pinheiro de Lima and Gouvea da Costa (2006)

Environmental Demands
Less material Input
Less energy input
Inputs from renewable sources

Manufacturing Performance
Features
Quality
Delivery
Flexibility
Cost

Social Responsibility Demands
?

Structural
•Capacity
•Facilities
•Vertical Integration
•Manufacturing Processes
Infrastructural
•Organisation
•Production Control Policies
•Quality Policies
•Human resources
•New product Introduction
•Performance measurement

Social Responsibility Performance
?

Market Demands
Features
Quality
Delivery
Price

Environmental Performance
Reduced Greenhouse gases
Reduced waste
Reduced toxic output
Increased reuse and recycling

Source: adapted from Platts (2007)

Performance dimensions

Economy
Ecology
Society

Research Phases (Slide 45)

- Theoretical construction (Literature review)
- Theoretical construction refining process (Expert panel: interviews and Delphi)
- Theoretical construction test (Case studies)
- Theoretical construction validation (Case studies)
- Theoretical construction validation (Survey)
- OSR Design recommendations
- Develop a theoretical framework
- Develop a process for the OSR design
- Test the OSR design process
- Contributes to the OSR design theory

Research life cycle process (Slide 46)

- PROBLEM IDENTIFICATION
- PROPOSED FRAMEWORKS
- METHODS OF APPLICATION
- EMPIRICAL INVESTIGATION
- THEORETICAL INVESTIGATION

Source: Neely (2005)

Design process (Slide 47)

STRUCTURING ACTIVITY
- STRATEGIC AND COMPETITIVE CONTEXT
- PROCESS DESIGN OPTIONS
- IDENTIFICATION OF TRADE-OFFS

ASSIMILATION ACTIVITY
- PROCESS KNOWLEDGE
- PROCESS CONTROL
- KNOWLEDGE GAPS

SUPPOSITIONAL ACTIVITY
- TRADE-OFFS CHARACTERISTICS
- SYSTEM FLEXIBILITY
- RESOURCE CAPABILITIES
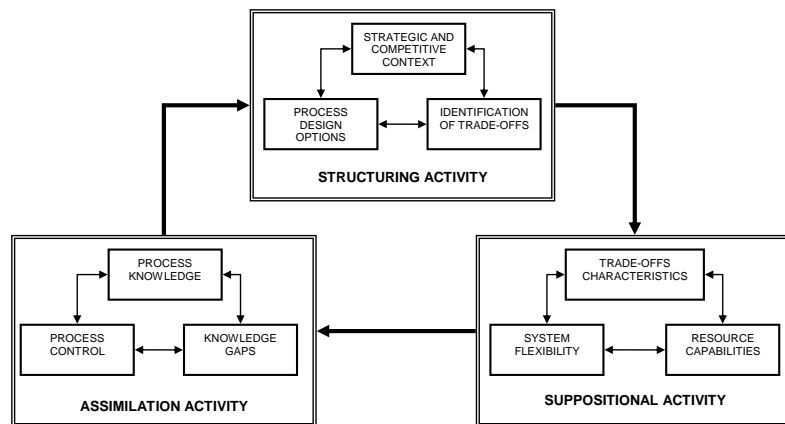
Source: Slack (2000)

Discussion (Slide 48)

What are the enterprise value creation drivers?

Can we redefine the firm concept? Should we enhance the economic approach? Or should we focus on benefits for its stakeholders?

What are the performance dimensions (or environment patterns)?

Discussion

What are the capabilities that an Operations System should develop to be Social Responsible?

What are the design recommendations for an Operations Strategic Management, based on CSR?

Do accountability AA 1000; social accountability SA 8000, global reporting initiative GRI, environmental management standards ISO 14000, international guidelines for social responsibility SR ISO 26000 provide references for designing and integrating CSR into operations strategy?

Conclusion

- CSR Strategic Management and its integration to operations system imply:
  - in reviewing the enterprise strategic management system design;
  - in conceiving a new operations strategy vision;
  - in renewing operations capabilities and competences.

Thank you!

References

- Margolis, J. and Walsh, J. (2003), "Misery loves companies: rethinking social initiatives by business", Administrative Science Quarterly, Vol. 48 No. 2, pp. 268-305.
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- Boyd, E., Spekman, R., Kamauff, J. and Werhane, P. (2007), "Corporate social responsibility in global supply chains: a procedural justice perspective", Long Range Planning, Vol. 40 No. 3, pp. 341-356.
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Boyd, E., Spekman, R., Kamauff, J. and Werhane, P. (2007), "Corporate social responsibility in global supply chains: a procedural justice perspective", Long Range Planning, Vol. 40 No. 3, pp. 341-356.

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Global supply chain control

- *A conceptual framework for the Global Control Centre (GCC)*

Erlend Alfnes

Seminar 22.11.07: CSR in global production systems

Department of Production and Quality Engineeering

Outline

- Background and theoretical reflections
- The case company Mustad– a global supplier of fish hooks
- Conceptual framework for the Global Control Centre
- Major challenges
- Conclusion and further research

Driving forces

- Globalisation
- Outsourced activities
- Increased product ranges
- Increased demand variation

- Cost focus and competitiveness
- Just in time deliveries

The consequence of poor coordination is a less responsive, cost efficient and service oriented SC (Frost and Sullivan, 2006)

Enabling ICT

- Track and trace
- RFID
- Visualisation
- Processing capability and capacity

Learning from oil and process industry

Source: ABB, 2007

Source: Cybernetica CENIT

Methodology

- Case based research strategy
  - Mustad – a global supplier of fish hooks
- Action research
  - A three year R&D project where the concept of GCC is developed in the company by its main SCM staff and researchers
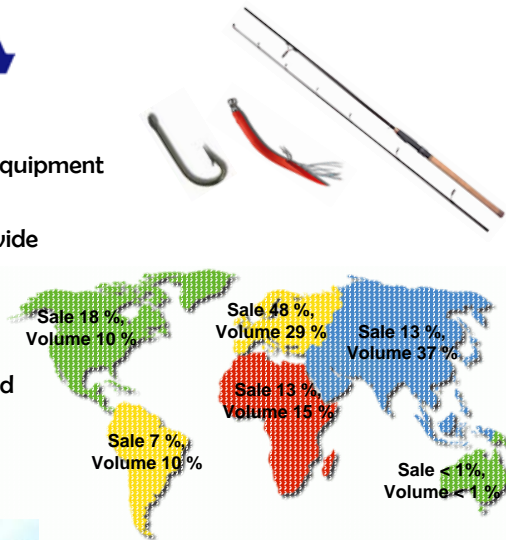- Planning for implementation before 2010

Mustad

Products
- Fish hooks, fishing tackle and equipment
- App. 20.000 SKUs
- No 1 selling hook brand worldwide
- Sales: 300 – 400 million NOK

Markets
- Sales in over 160 countries world wide
- Large variation in customer types

Sale 18 %, Volume 10 %
Sale 48 %, Volume 29 %
Sale 13 %, Volume 37 %
Sale 13 %, Volume 15 %
Sale 7 %, Volume 10 %
Sale < 1%, Volume < 1 %

Mustad
– manufacturing, assembly and distribution

Distribution
- USA - Auburn
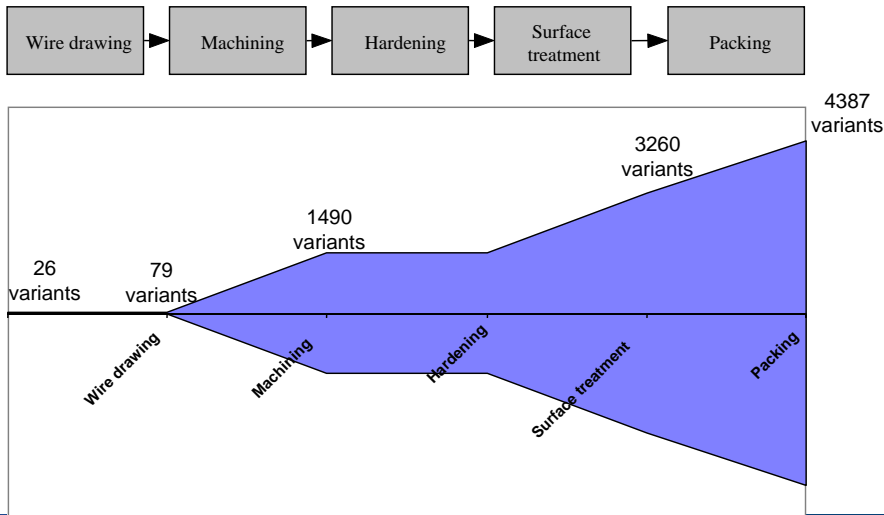- USA – Miami

Assembly and packing
- Dominican Republic
- Philippines - Manilla
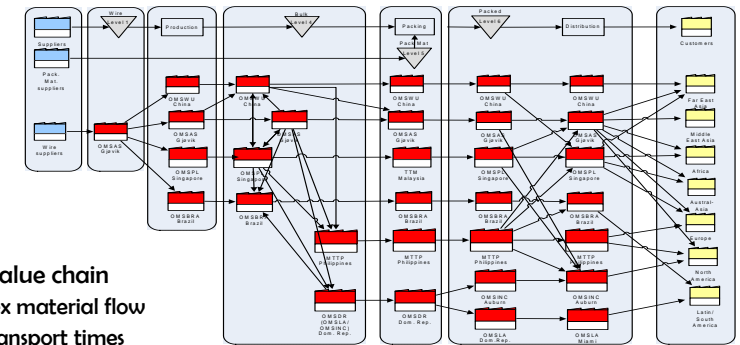- Malaysia

Manufacturing
- Norway - Gjøvik
- China - Wuxi
- Singapore
- Brazil - Porto Allegre
- Portugal - Sesimbra

Product variants
example from OMSAS Gjøvik pr 2005

| Wire drawing | → | Machining | → | Hardening | → | Surface treatment | → | Packing |

26 variants
79 variants
1490 variants
3260 variants
4387 variants

Wire drawing
Machining
Hardening
Surface treatment
Packing

Mustad Value chain

- Complex value chain
  - Complex material flow
  - Long transport times
  - Long production series required
  - Local planning of product programme and stock level

→ Challenging control tasks

Improvement strategies

- **Simplify value chain structure:**
  - rationalization/close down of sites
  - major production in China
- **Simplify material flows**
  - Rationalize product program at each site
  - Location of products to fulfill delivery requirements at lowest possible costs (costs of transport, production, storage etc)
- **Develop global control centre at Gjøvik**
  - Core node in the information network
  - Controls product programs and overall material flow


Conceptual framework

1. Global control models and decision support
2. Information and communication technology
3. Organizational changes and awareness
4. The physical environment

1. Global control models and decision support

- Operations/control areas
- Material/information flows
- CODP and push/pull strategy
- Control parameters and rules
- Integtrated decisio support

(forecasting, planning, transport managment, track and trace, etc.)

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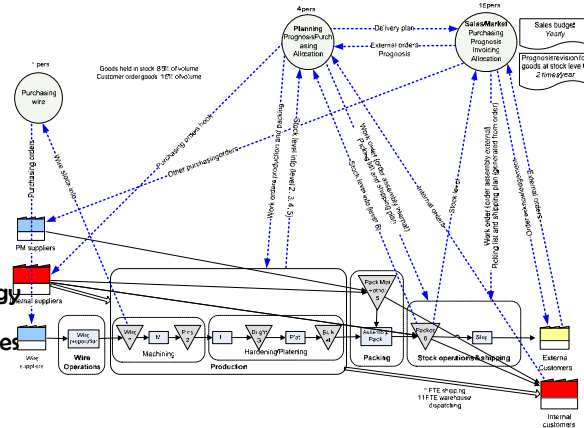
2. Information and communication technology

Information and communication HUB

Decision making: BI, ERP, CRM etc, production and inventory management, forecasting and planning

Visualisation: PCs, displays, boards, interactive screens

Communication: Video conference systems, virtual meeting rooms wireless, portable devices chat, SMS etc.

Integration: Integration technology (SOA, API, EAI,) for combination of data from various sources

Performance dashboard

---

3. Organisation

Processes

Locations

Team oriented structure

- Efficient decision process
- Flexibility in allocation of tasks
- Limits dependency on key personnel
- Single-point-of-contact for internal communication
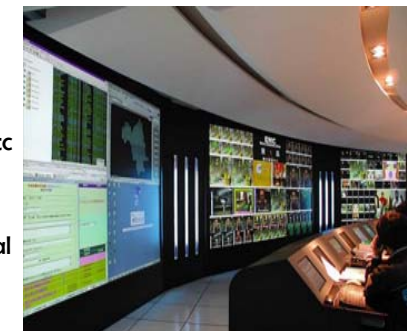- Important interface towards customers and suppliers

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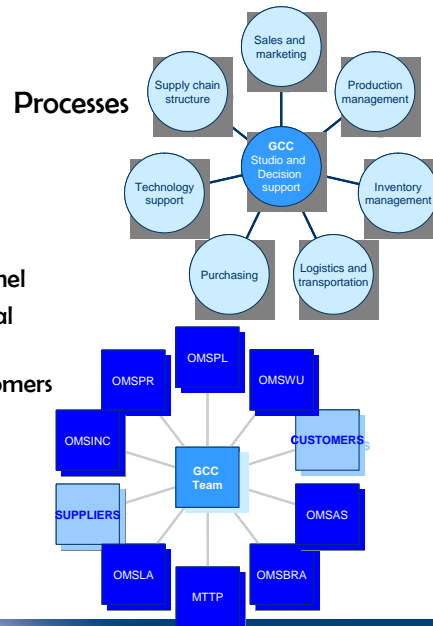
4. The physical environment

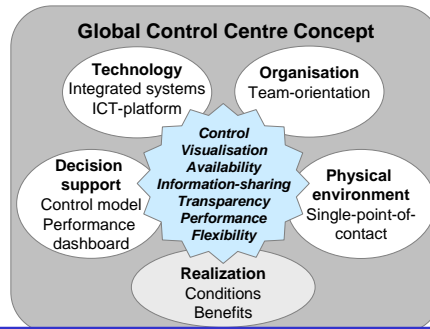Physical environment: the control studio

- Physical location of GCC team
- Center for people, knowledge, tools, etc
- Coordination of value chain control decisions
- Virtual interfaces/workspaces for global collaboration
- Visual display of information

Mustad Global Control Centre

Concept for coordinated supply chain control

- Team organisation
- Decision support
- A Hub for information and communication

Global Control Centre Concept

Technology
Integrated systems
ICT-platform

Organisation
Team-orientation

Control
Visualisation
Availability
Information-sharing
Transparency
Performance
Flexibility

Decision support
Control model
Performance dashboard

Physical environment
Single-point-of-contact

Realization
Conditions
Benefits

Benefits

- Increased utilizations of capabilities
- Reduced inventories and safety stock
- Improved delivery performance and speed
- Increased efficiency in decision making

...FOR THE ENTIRE SUPPLY CHAIN

Major challenges

- An increase in the amount of data – *how to process, interpret and visualize?*
- Information reliability and quality – *what if system instability?*
- Control logic – *how to control a global system? And local vs. global decision making?*
- Global KPI and control indicators - *how to measure performance?*
- ICT investments and standardization – *which solutions and the extent of change?*
- Change management and organizational resistance – *how to motivate for change?*


Conclusion

- The need for a ICT based global control system
  - Real time
  - Visual
  - New control logic
  - Balancing global and local decisions

- Further research
  - Information overload
  - Reliability and security
  - Change management
  - KPI logic and control indicators

Acknowledgements

- We would like to thank the management team at Mustad – and a special gratitude to Freddy Johnsen, Supply chain manager
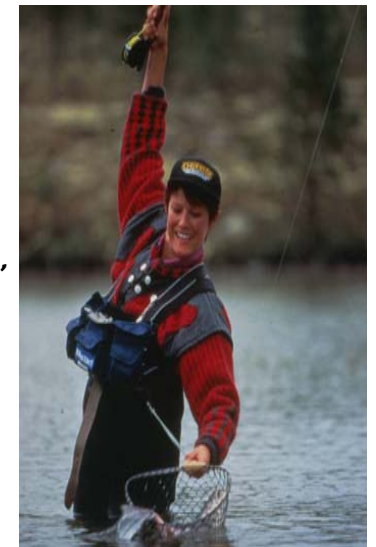
Mustad

Comments and questions?

Strategic purchasing as a driver for CSR in supply chains

Dr. Ottar Michelsen

Department of Industrial Economics
and Technology Management
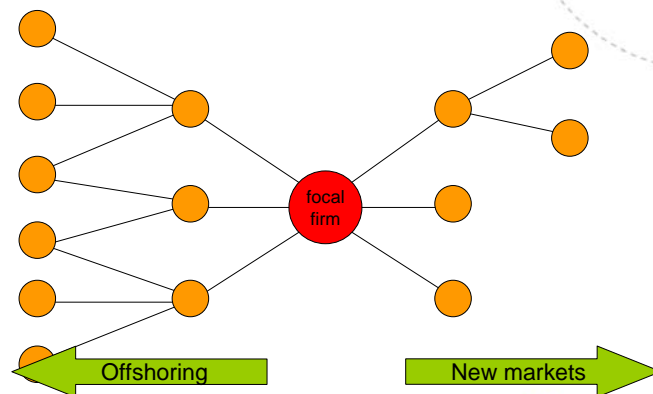Norwegian University of Science and Technology

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Why internationalise business?

- "*The logic of the global company is clear: it seeks to grow its business by extending its markets whilst at the same time seeking cost reductions*"

(Christopher 1998)

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Aspects of internationalisation

focal firm

Offshoring

New markets

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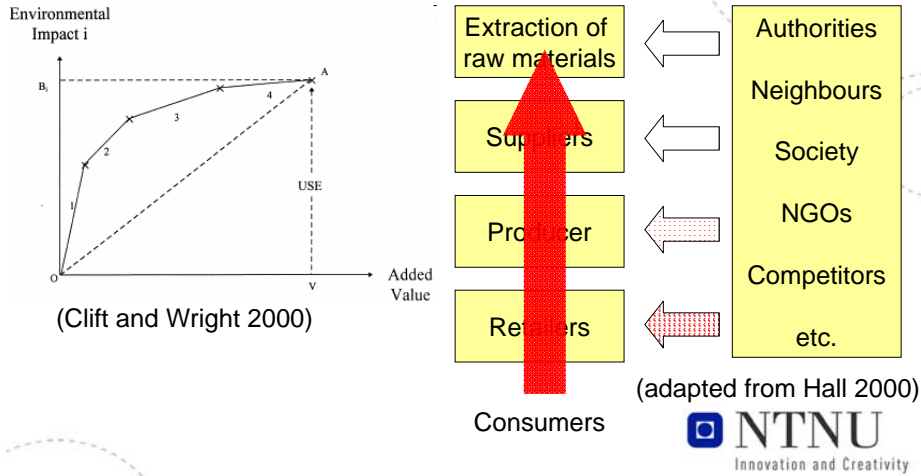Innovation and Creativity

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Trends in purchasing and supply chain management

- The costs related to purchasing is increasing, reaching 50-80% of total costs in manufacturing companies
- Number of suppliers continuously reduced
- More focus on long term relations and supplier development
- → Increased interdependency – the supply chain (and not the single company) is often the competing unit

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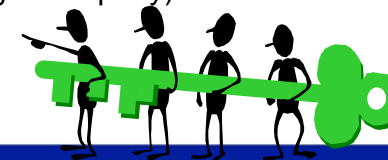
Environmental performance and pressure in the supply chain

(Clift and Wright 2000)

(adapted from Hall 2000)

Developing supply strategies

(Kraljic 1983)

Managing the supply chain

(Lambert and Cooper 2000)

The network horizon

(Holmen and Pedersen 2003)
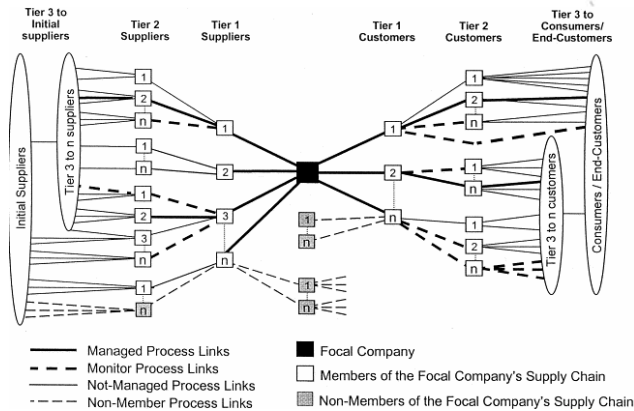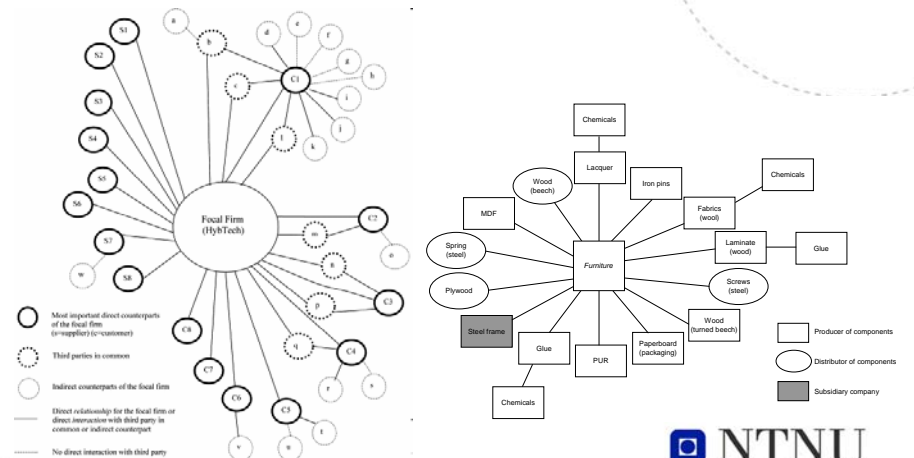
Managing suppliers

Development of green public purchasing

- 1992 – UN summit in Rio
- 2002 – OECD recommendations
- 2003 – EU as a driving force
- 2004 – Public procurement directives

- § 6 Resource and environment-conscious procurement
  "Central, municipal and county-municipal authorities and legal persons mentioned in section 2, first paragraph, letter (b) shall when planning each procurement have regard to the resource implications and environmental consequences of the procurement."
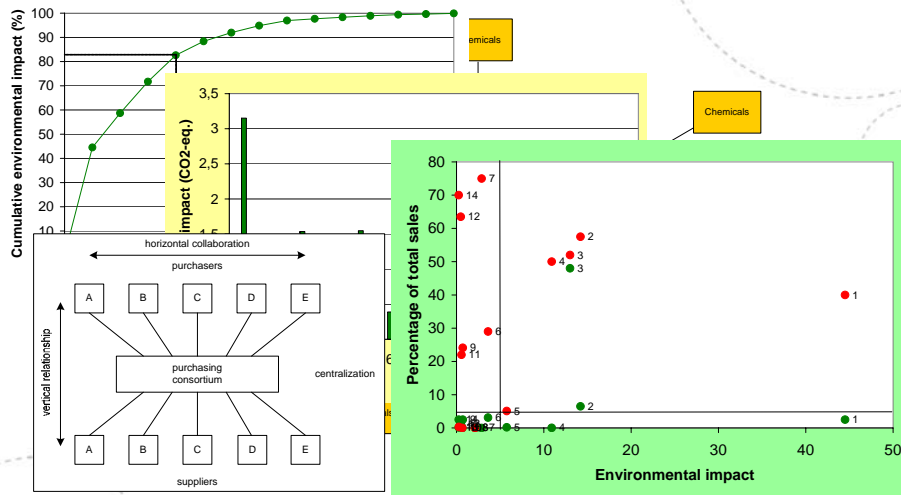
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Environmental demands in public tenders
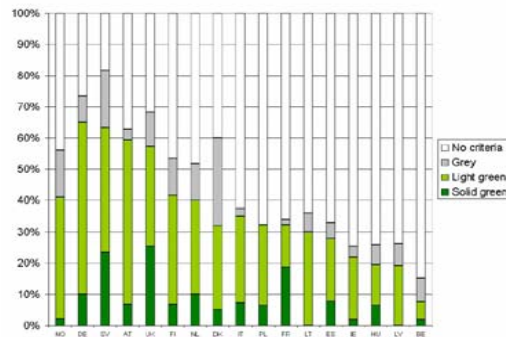
Figure 4. Norwegian results of the analyses of tender documents compared with the European results (results from Czech republic, Estonia, Luxembourg, Malta, Cyprus, Slovakia, Greece, Slovenia and Portugal were too few to display).

But: approximately 50% of (local) public purchasers in Norway say that information on environmental aspects have no effect on the final choice of supplier, while more than 75% of the potential suppliers think this have no effect.

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Environmental and social performance as management criteria

- Environmental friendly product can be an important niche
- Cost savings through environmental performance
  - Controlling material flows and energy consumption
  - Best available technology
- Being in front of legislation – influencing the development of new regulations

→ Environment as an order qualifier
→ Purchasing strategies

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CSR-performance indicators in the extended supply chains

Professor Annik Magerholm Fet
Department of Industrial Economics and Technology Management
Norwegian University of Science and Technology - NTNU

Research seminar NTNU, 22.November 2007

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Outline

CSR management tools and performance indicators to manage, communicate and improve CSR-performance

- In-house
- In the extended supply chain
- in the society local and global

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CSR and different system perspectives
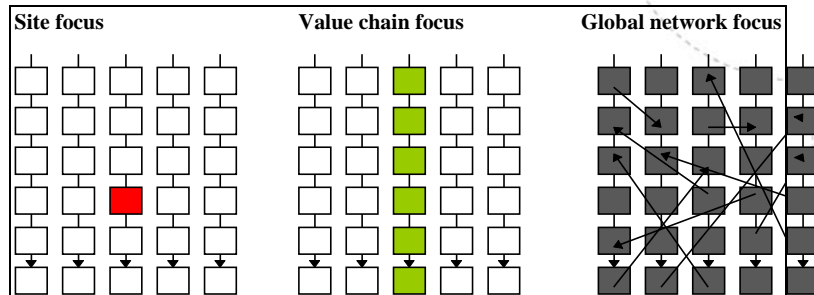
Site focus | Value chain focus | Global network focus

- **Business Ethics**
- **Community Investment**
- **Environment**
- **Governance & Accountability**

- **Human Rights**
- **Marketplace**
- **Mission, Vision, Values**
- **Workplace**

Corporate Social Responsibility - CSR

Individual — In-house circumstances — In relation to suppliers — In relations to customers — In relation to the local and global society
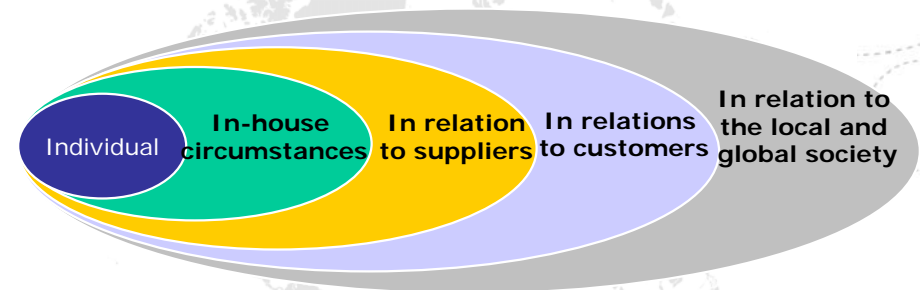
CSR implies working along different dimensions in global production systems

Examples of CSR-supporting standards

Firms should document compliance with for example the

- AccountAbility AA1000-standards
- Social Accountability SA 8000 standard
- Environmental management standards (ISO 14000)
- Eco-labeling standards (ISO 14040-series, ISO 14020-series)
- International guidelines for social responsibility (SR) (ISO 26000 - June 2008)
- Global Reporting Initiative (GRI) guidelines

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Mapping CSR into the PDCA-circle:

Performance indicators

Operational related
- Raw material usage
- Emissions to air
- Discharges to water and soil
- Waste

Community relations
- resources applied to support of community environmental programs;
- number of local cleanup or recycling initiatives, sponsored or self-implemented;

Conformance
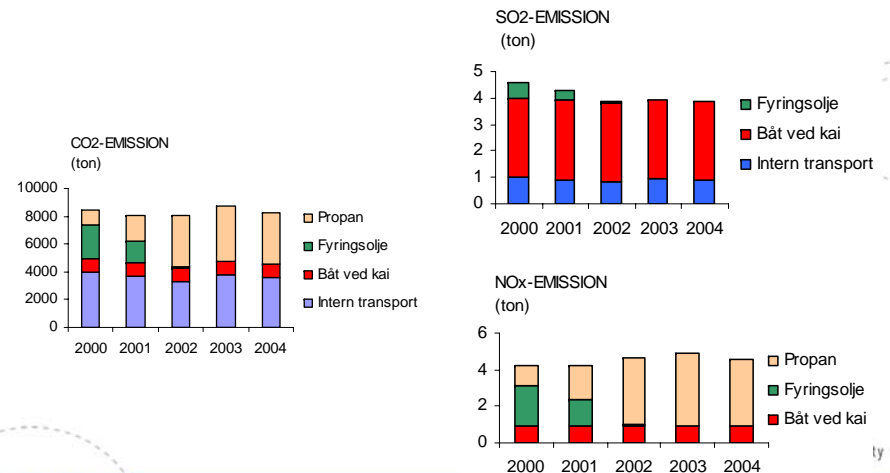- degree of conformance of service providers with requirements and expectations specified by the organization in contracts;

Financial performance
- costs (operational and capital) that are associated with a product's or process' environmental aspects;
- return on investment for environmental improvement projects;
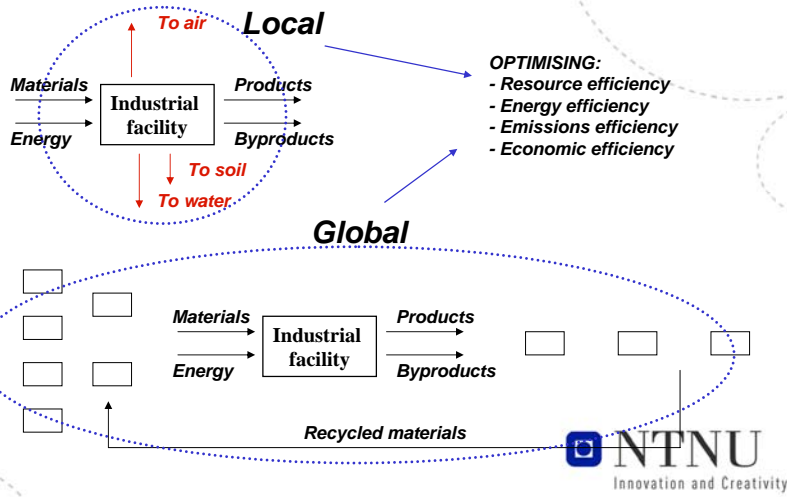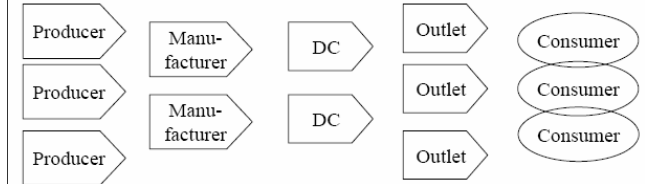
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PERFORMANCE INDICATORS

From local to global perspective

Local

To air

Materials → Industrial facility → Products
Energy → Industrial facility → Byproducts

To soil
To water

OPTIMISING:
- Resource efficiency
- Energy efficiency
- Emissions efficiency
- Economic efficiency

Global

Materials → Industrial facility → Products
Energy → Industrial facility → Byproducts

Recycled materials

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Supply chain model

Producer → Manu-facturer → DC → Outlet → Consumer
Producer → Manu-facturer → DC → Outlet → Consumer
Producer → Outlet → Consumer
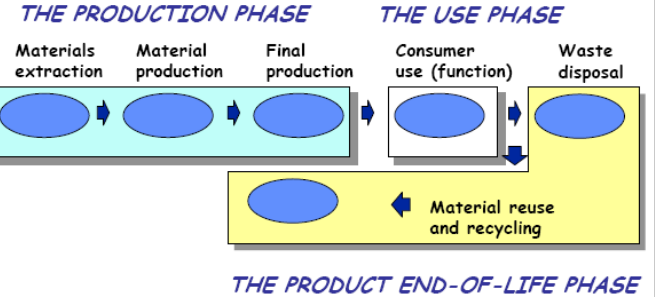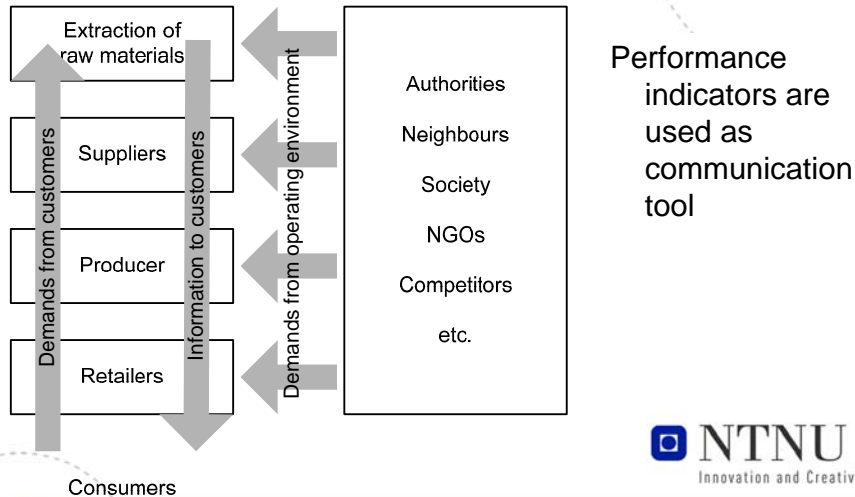
'Extended Supply Chain' also includes the use and the end-of-life of the products

The product life-cycle

THE PRODUCTION PHASE | THE USE PHASE

Materials extraction → Material production → Final production → Consumer use (function) → Waste disposal

Material reuse and recycling

THE PRODUCT END-OF-LIFE PHASE

Communication in the extended supply chain

Extraction of raw materials
Suppliers
Producer
Retailers
Consumers

Demands from customers
Information to customers
Demands from operating environment

Authorities
Neighbours
Society
NGOs
Competitors
etc.

Performance indicators are used as communication tool

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THE GRI-INDICATOR FRAMEWORK

Global Reporting Initiative

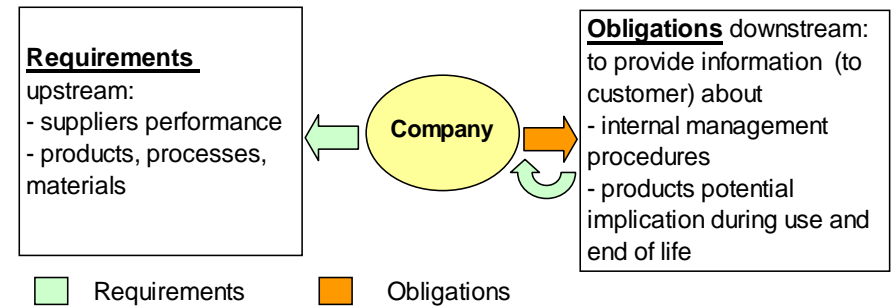| CATEGORY		ASPECT
ECONOMIC	Direct Economic Impacts	Customers Suppliers Employees Providers of capital Public sector
ENVIRONMENTAL	Environmental	Materials Energy Water Biodiversity Emissions, effluents, and waste Suppliers Products and services Compliance Transport Overall
SOCIAL	Labour Practices and Decent Work	Employment Labour/management relations Health and safety Training and education Diversity and opportunity
	Human Rights	Strategy and management Non-discrimination Freedom of association and collective bargaining Child labour Forced and compulsory labour Disciplinary practices Security practices Indigenous rights
	Society	Community Bribery and corruption Political contributions Competition and pricing
	Product Responsibility	Customer health and safety Products and services Advertising Respect for privacy

Indicators as supporting management tool

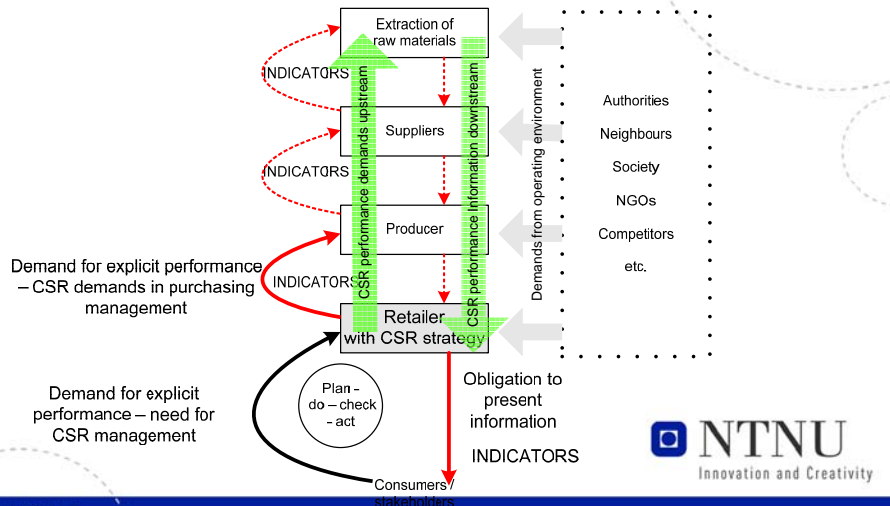| CSR-issue	Performance Indicators
Workplace	• Evidence of compliance with the ILO *Guidelines for Health MS*. • Average hours of training per year per employee
Environ-ment	• Performance of suppliers relative to responsible programmes • Significant environmental impacts of products and services.
Corruption	• Description of policy, management systems and compliance mechanisms for managing political lobbying and contributions. • Amount of money paid to political parties and institutions
Product respon-sibility	• Description of policy for preserving customer health and safety during use of products and services • Voluntary code compliance, product labels or awards with respect to social and environmental responsibility

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Use of performance indicators

Indicators are used to develop the supply chain by
- Setting requirements upstream
- Fulfilling obligations downstream

Requirements
upstream:
- suppliers performance
- products, processes, materials

Company

Obligations downstream:
to provide information (to customer) about
- internal management procedures
- products potential implication during use and end of life

Requirements   Obligations

Outline of model for CSR driven SCM

Extraction of raw materials

INDICATORS

Suppliers

INDICATORS

Producer

INDICATORS

Retailer with CSR strategy

CSR performance demands upstream

CSR performance Information downstream

Demands from operating environment

Authorities
Neighbours
Society
NGOs
Competitors
etc.

Demand for explicit performance – CSR demands in purchasing management

Demand for explicit performance – need for CSR management

Plan – do – check – act

Obligation to present information

INDICATORS

Consumers/ stakeholders

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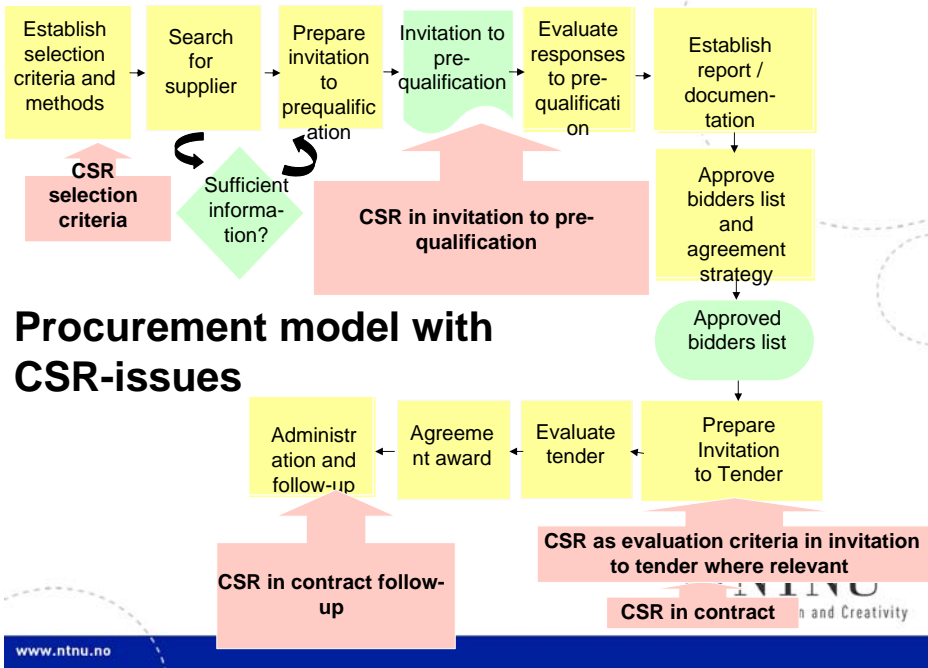Innovation and Creativity

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The HIP Handbook

HYDRO

- An important part of Hydro's compliance program
- No new mandatory requirements, but guidelines to be adopted in order to comply with directives
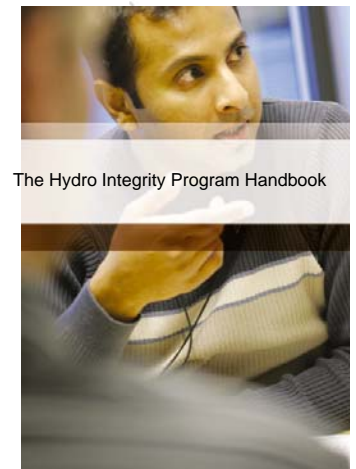
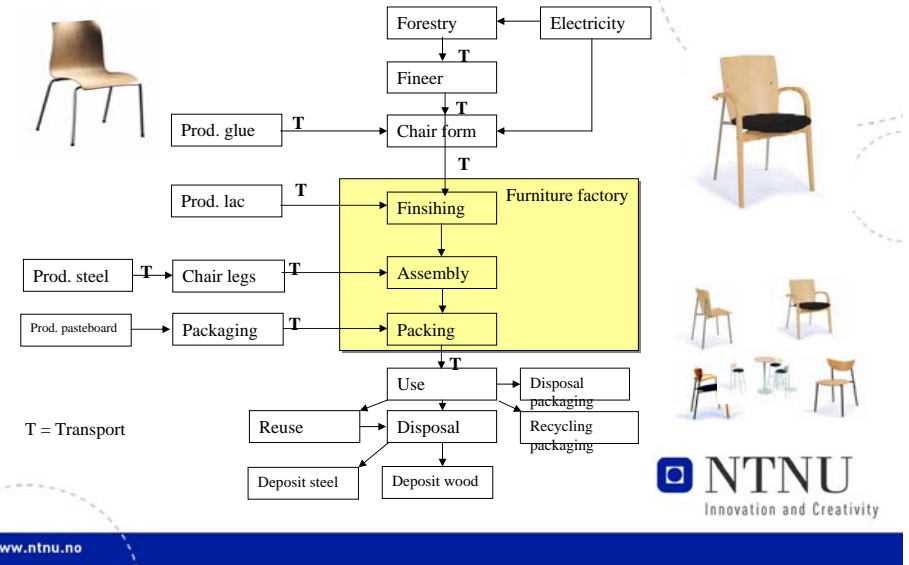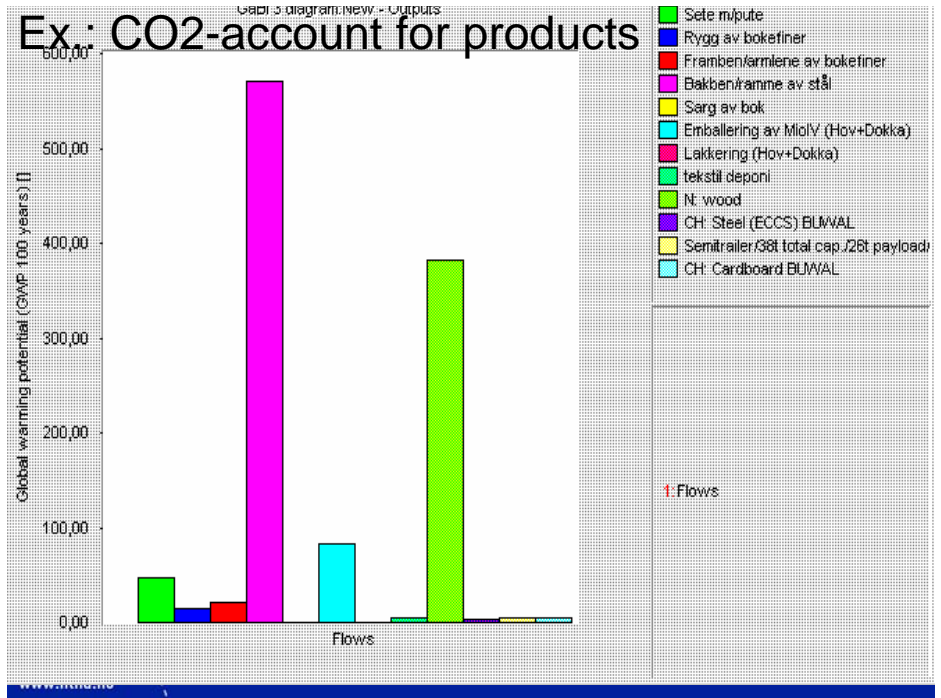From part 4: Business relations and value chain
1) General guidelines
2) Due diligence
3) Joint venture partners
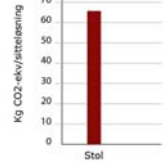4) Agents and other intermediaries
5) Suppliers and contractors
6) Customers

The Hydro Integrity Program Handbook

Procurement model with CSR-issues

Establish selection criteria and methods → Search for supplier → Prepare invitation to prequalification → Invitation to pre-qualification → Evaluate responses to pre-qualification → Establish report / documentation → Approve bidders list and agreement strategy → Approved bidders list → Prepare Invitation to Tender → Evaluate tender → Agreement award → Administration and follow-up

Sufficient information?

CSR selection criteria

CSR in invitation to pre-qualification

CSR as evaluation criteria in invitation to tender where relevant

CSR in contract

CSR in contract follow-up

The supply chain in the furniture sector

Forestry → Fineer → Chair form → Finsihing

Electricity

Prod. glue → T → Chair form

Prod. lac → T → Finsihing (Furniture factory)

Prod. steel → T → Chair legs → T → Assembly

Prod. pasteboard → Packaging → T → Packing

Finsihing → Assembly → Packing → Use

Use → Disposal packaging

Use → Disposal → Recycling packaging

Reuse

Disposal → Deposit steel / Deposit wood

T = Transport

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The trend is that CSR-performance should be documented and communicated in relation to what's happening along the eniter value chain
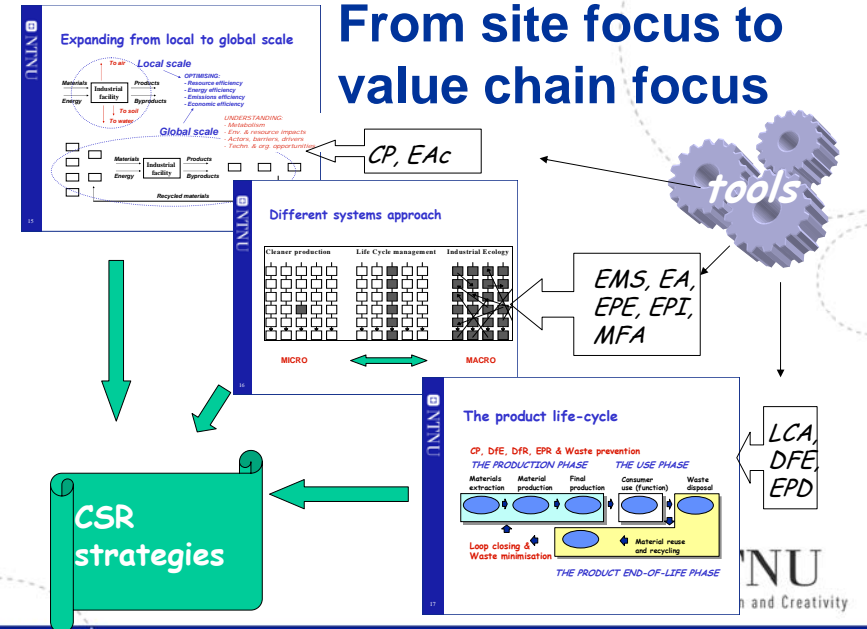

Ex.: CO_2-account for products

Global warming potential (GWP 100 years) [t]

Legend:
- Sete m/pute
- Rygg av bokefiner
- Framben/armlene av bokefiner
- Bakben/ramme av stål
- Sarg av bok
- Emballering av MiolV (Hov+Dokka)
- Lakkering (Hov+Dokka)
- tekstil deponi
- N: wood
- CH: Steel (ECCS) BUWAL
- Semitrailer/38t total cap./28t payload/
- CH: Cardboard BUWAL

1:Flows

Flows

How to use the EPD to improve the consumer?

From site focus to value chain focus

CSR as a driver in the development of regions
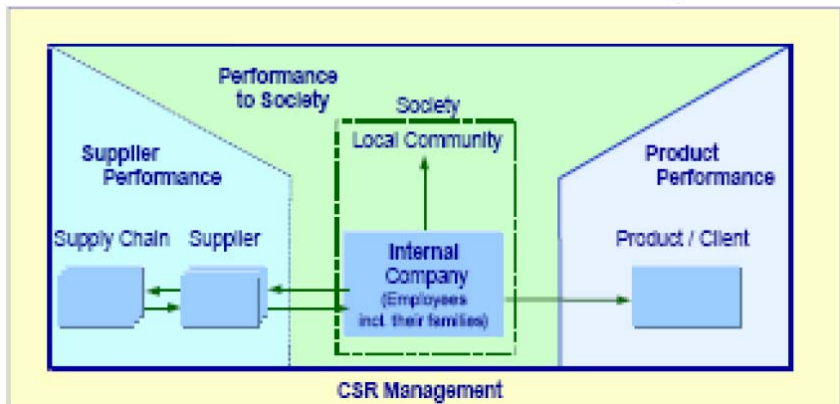
Comming challenges:

How to challenge business to focus on the communication of CSR regarding their

- Internal corporate performance
- Suppliers / consumers performances
- Product performances

and *actively communicate this to local/regional governmental bodies and thereby contribute to sustainable regional governance, e.g. by partnered governance*

StatoilHydro's Social Responsibility Policy

Our approach
- We contribute to sustainable development based on our core activities in the countries where we work

We are committed to
- Make choices based on how they affect our interests and the interests of the societies around us

- Ensure transparency, anti-corruption, and respect for human rights and labour standards

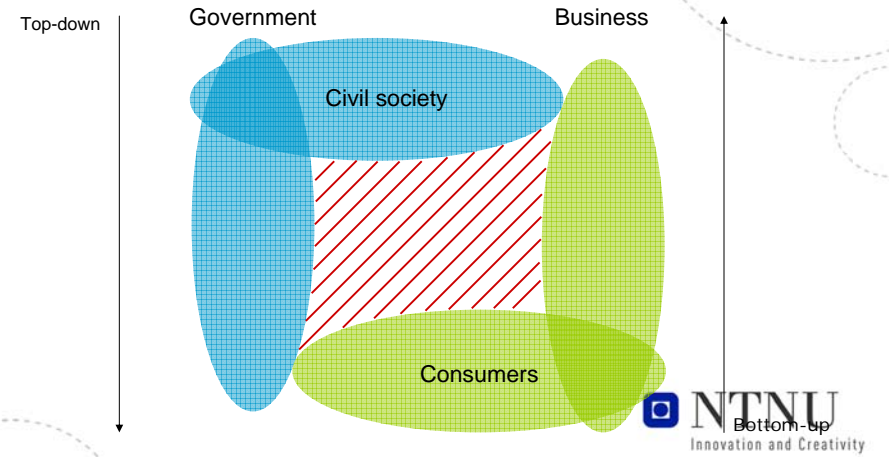- Generate positive spin-offs from our core activities to help meet the aspirations of the societies where we operate
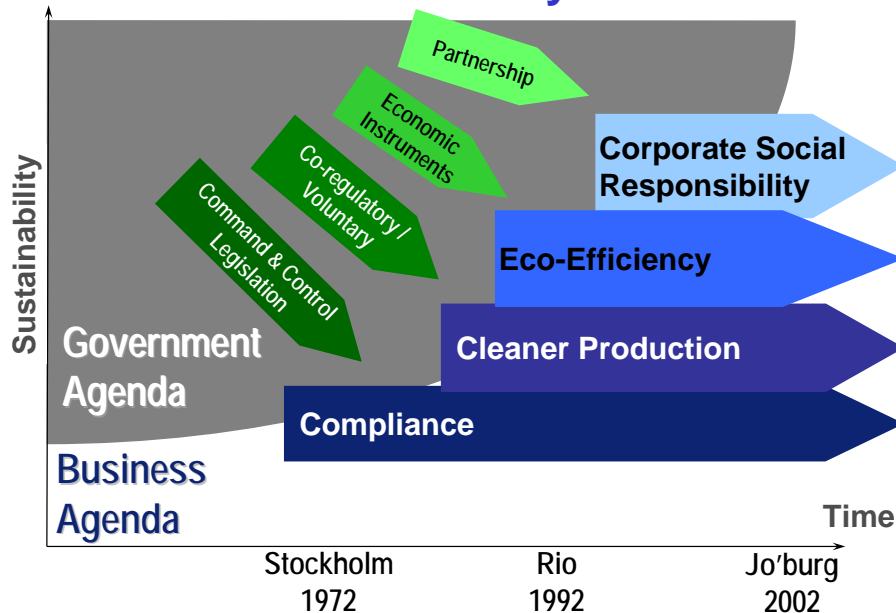

The StatoilHydro Book

VALUES

PEOPLE AND LEADERSHIP

OPERATING MODEL

CORPORATE POLICIES — C S R

Corporate Function Requirements

Business Area Requirements

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The roles of the participants

- the business case –
meeting of minds in the market place required

Top-down   Government   Business

Civil society

Consumers

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Bottom-up

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Global trends - summary

Sustainability

Partnership

Economic Instruments

Co-regulatory / Voluntary

Command & Control Legislation

Corporate Social Responsibility

Eco-Efficiency

Cleaner Production

Compliance

Government Agenda

Business Agenda

Time

Stockholm 1972   Rio 1992   Jo'burg 2002

Global trends - summary

Sustainability

????

????

Partnership

Economic Instruments

Co-regulatory / Voluntary

Command & Control Legislation

Corporate Social Responsibility

Eco-Efficiency

Cleaner Production

Compliance

Government Agenda

Business Agenda

Time

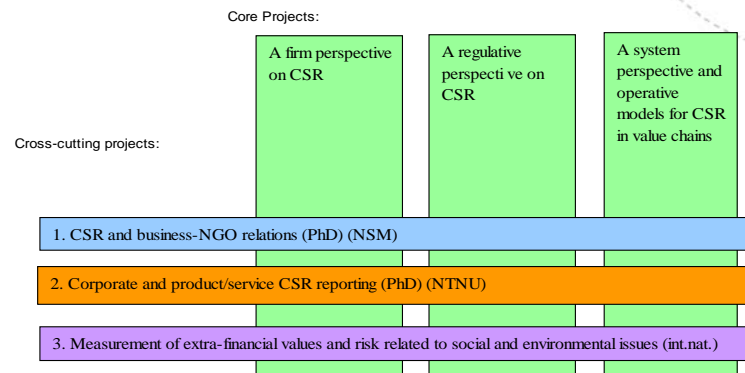Stockholm 1972   Rio 1992   Jo'burg 2002

Slide 1

CSR reporting in global value chains

Christofer Skaar
22 November 2007

Slide 2

CSR in value chains

- PhD project: Background and purpose
- Value chains
- Analysis: Combining corporate and value chain reporting
- Benchmarking the value chain

Slide 3

Background

Core Projects:

| A firm perspective on CSR | A regulative perspective on CSR | A system perspective and operative models for CSR in value chains |

Cross-cutting projects:

1. CSR and business-NGO relations (PhD) (NSM)
2. Corporate and product/service CSR reporting (PhD) (NTNU)
3. Measurement of extra-financial values and risk related to social and environmental issues (int.nat.)
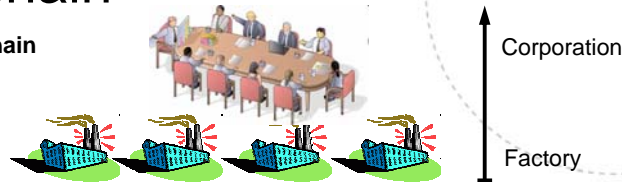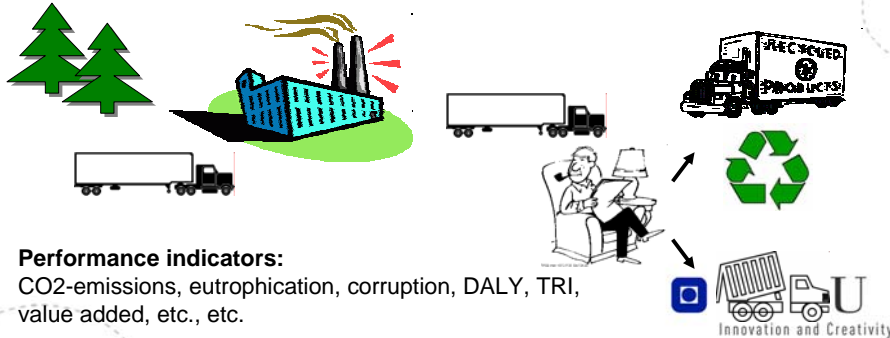

Slide 4

Purpose

- Improve CSR performance in value chains
- Framework for providing grounds for decision-making
  - State of the art-analysis of reporting systems
  - CSR performance indicators in value chains
  - Verification of information in value chains
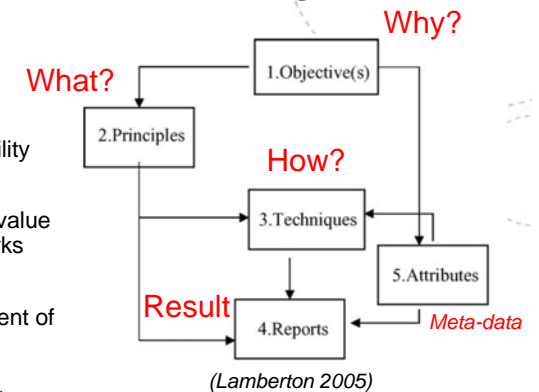
Value chain

Corporate value chain

Corporation

Factory

Product and service value chains

Performance indicators:
CO2-emissions, eutrophication, corruption, DALY, TRI, value added, etc., etc.

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State of the art: Reporting

- Corporate Social Responsibility
  - Economic, social and environmental responsibility
- Purpose
  - Compare corporate and value chain reporting frameworks
- Two-stage analysis
  - Stage 1: Broad assessment of reporting frameworks
  - Stage 2: Performance indicators in one corporate and one value chain reporting system

Why?

What?

How?

Result

1.Objective(s)

2.Principles

3.Techniques

5.Attributes

4.Reports

Meta-data

(Lamberton 2005)

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# Analysis of reporting frameworks

- Corporate approaches
  - Global Reporting Initiative (GRI)
  - Social Accountability 8000 (SA8000)
  - AccountAbility 1000 (AA1000)
  - ISO14001
- Value chain approaches
  - Environmental Product Declarations (EPDs)
  - Product/service labelling
- Comparison criteria: Purpose, object, methods, dispersion, indicators used/suggested, environmental impact assessment, verification, aggregation methods, scope, time period, update frequency

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Analysis of reporting frameworks

- Findings, stage 1
  - The supply chain is dealt lightly with in corporate approaches
  - Value chain approaches only look at the process value chain, not the corporate value chain
  - The downstream (e.g. use and disposal) is rarely included in corporate approaches
  - The downstream is rarely concerned with social issues
- Findings, stage 2
  - There are some differences between the performance indicators in GRI and those used in EPDs, but they can be aligned
- Issues
  - Descriptive versus prescriptive (attributional versus consequential)
  - Data collection: generic versus specific, estimated versus measured

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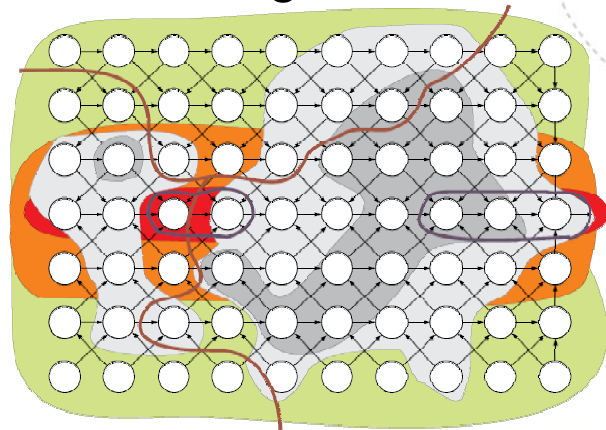# Benchmarking the value chain
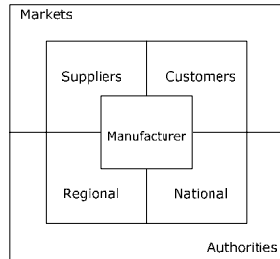
Key issues:
- Economic flows
- Material flows
- Information flows
- Governance
- Stakeholders

Benchmarking the value chain

- Use CSR performance indicators to benchmark the value chain
  - Compare to industry average
  - Compare to best available practices (the ideal value chain)
- From process to corporate value chains
  - Not just processes in the value chains, but performance of the corporations in the value chain
- Identify possibilities for improvement
  - Process
  - Product
  - Function
  - Chain

Benchmarking the value chain

Source: Anders Hammer Strømman

Benchmarking the value chain

Questions?