The Competence Brokering Initiative: Linking SME needs to research opportunities

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Competence Broker

BUC

Competence brokering –
experiences from Hordaland, Norway

- 1. Framework

- 2. Brief description of the instrument

- 3. Impact/results of the instrument

- 4. Success Factors

- 5. Bottlenecks/ Need for improvement

Framework

Hordaland

- Population: *478.000*
- *City of Bergen: 257.000*
- Workforce : ab. *245.000 (74% of popl.15-74 yr)*
- *Growth in workforce 2004 - 2008: 2,7 % pr. year*
- Unemployment rate: *2,8 % (Febr. 2010)*
- GDP: *€ 18 625 M*
- R&D expenditures of industry: *NOK 1 525M (~ € 191M)*
- Main industrial sectors:
- *Mechanical manufacturing, metallurgical, petrochemical, shipbuilding, off-shore related and supply, aquaculture, fisheries, building and construction, energy*
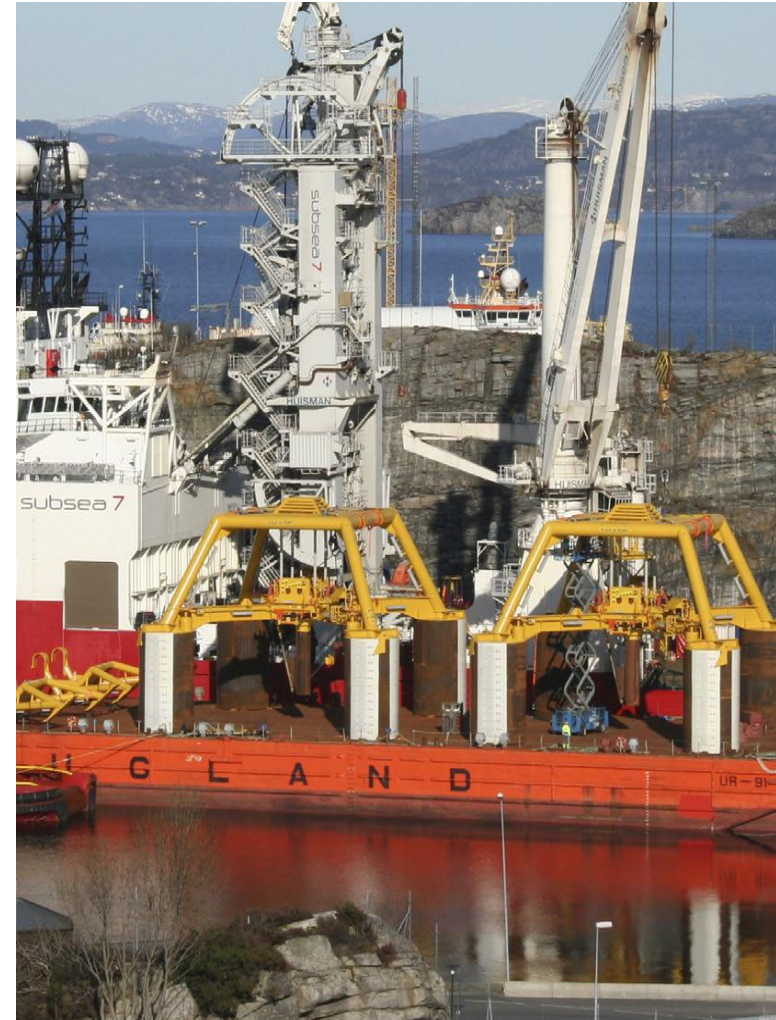
Actual situation in Hordaland within business and industry, 2010

-optimism and growth in industry
- aquaculture "all time high"
-oil and gas are stable
-lower activity within manufacturing and construction industry
-skilled working force imported
- investment in new competence and technology
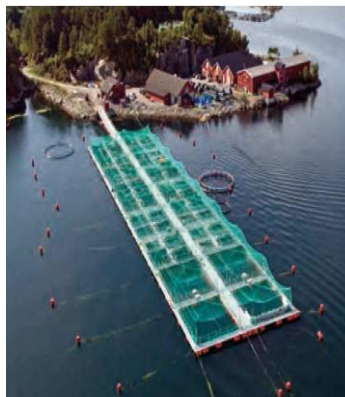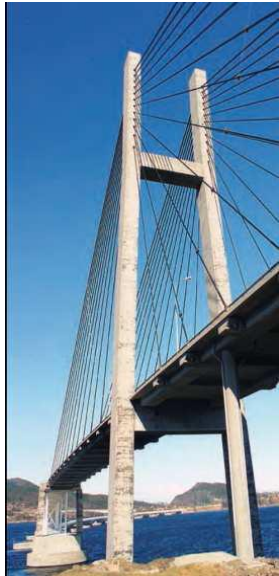
Hordaland

- Number of SME in region: 39.479 (tot. in Norway: 460.000)

- SME structure:
  - 8% less than 5 employees
  - 89% less than 10 employees
  - 98% less than 50 employees

- Number of students: 31.200 (ab. 15% of total o Norway)

- Level of education:
  - General / Basic school: 34,1% (Norway: 32,4%)
  - Higher Education: 47,7% (42,4%)
  - University: 18,1% (24,8%
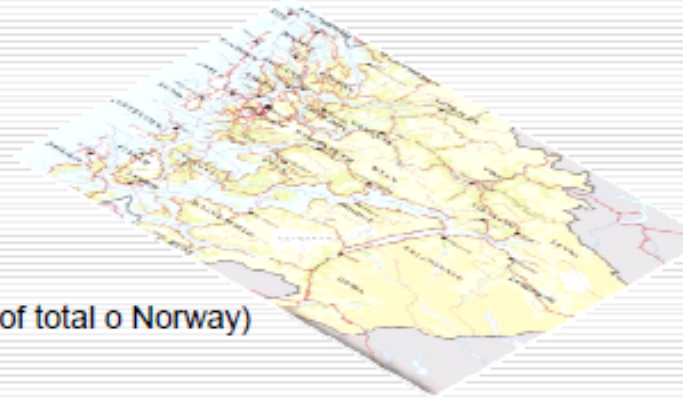
Research and Education

University of Bergen,

The Norwegian School of Economic and
    Business Administration

Bergen University College

Regional University Colleges

University College of Art,

College of Teacher Education

R&D on Human Rights

The High Tech. Center,

Under Water Technology

Climate Research

Chr.Michelsen Research AS

3 regional Centres of Excellence

    (Medieval studies, Climate Research, Integrated
    Petroleum Research)

Industrial Centers of PetroChemistry, Oil and
    Gas Tech

NHH — Norwegian School of Economics and Business Admin.

University of Bergen

cmr — Christian Michelsen Research AS

CMI — Christian Michelsen Institute
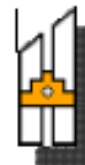
Bergen University College

Nutec Norway — The Norwegian Under water Technology Centre

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REBASING
Research-based Competence Brokering

Hordaland

R & D Staff *Man-labour year*

Sector	1991	1993	1995	1997	1999	2001	2003	2005	
Business and industry	671	792	875	786	590	860	1 033	1 076	29%
Institutes	825	798	823	789	785	794	811	835	23%
High school- and Universities	1 181	1 328	1 446	1 428	1 442	1 448	1 502	1 778	48%

60%

50%
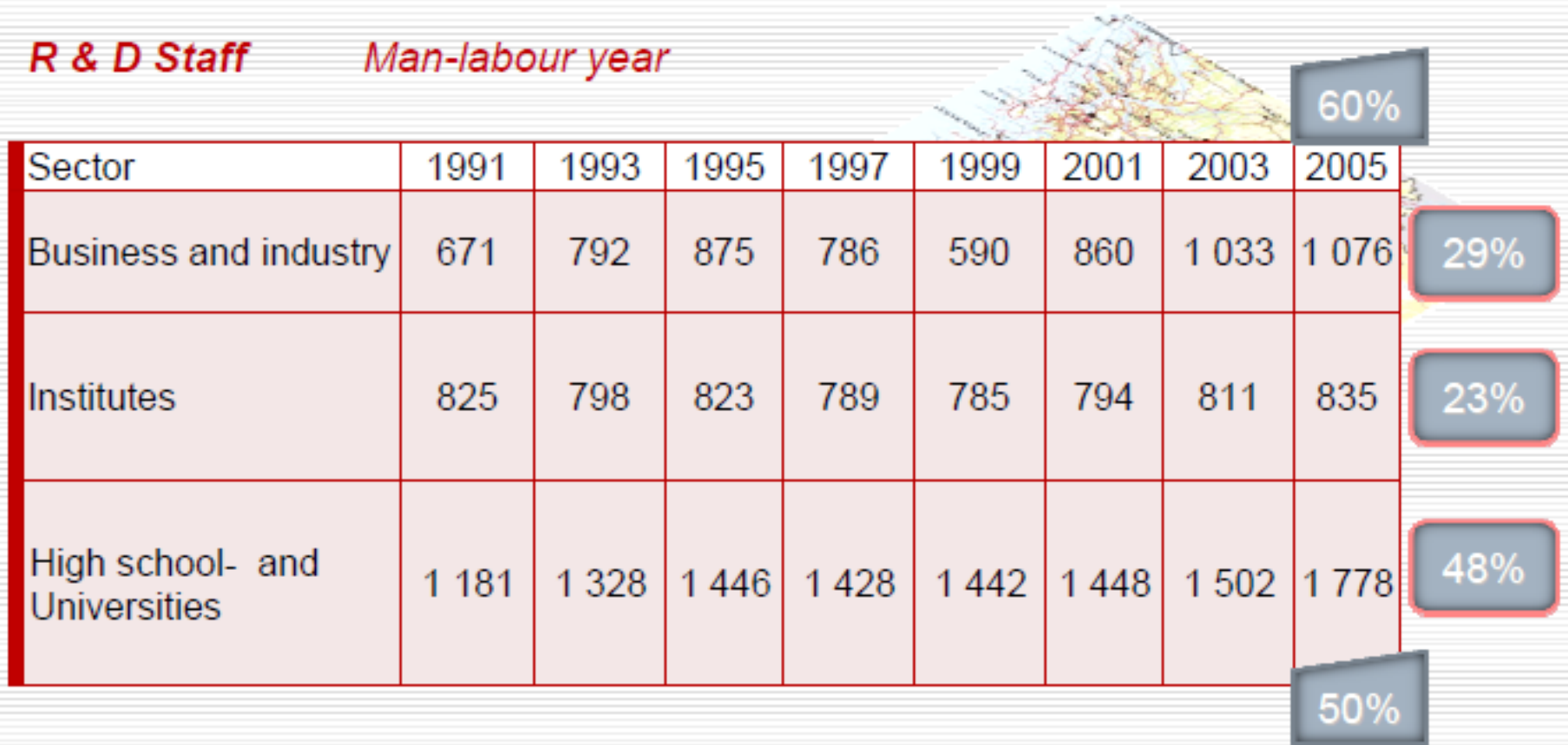
Main R&F focus areas

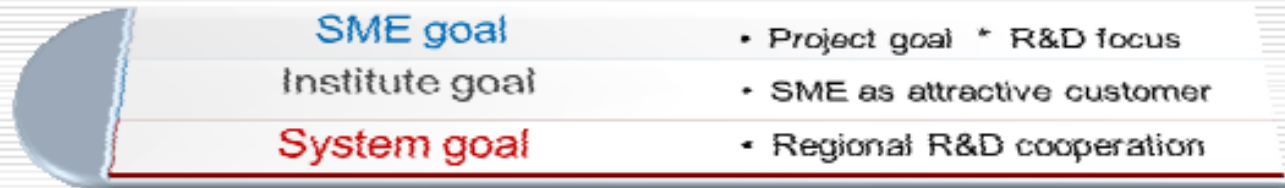|		
Norges forskningsråd *National*	•Biotechnology •Development / Globalization •Energy / Petroleum •Environment •Medicine / Health •Polar Research •Social Sciences •Large Scale programs	•Technology, Natural Science and Mathematics •Centres of Excellence •Centres for Research Based Innovation (CRI's) •Humaniora •Public-oriented programs •Medicine and Health
INNOVATION NORWAY *National and regional*	•Competence, network •Entrepreneur, strategy, education •Internationalization •Regional development •Marine sectors /fisheries / aqua culture •Agriculture, farming	•Tourism and travel •Petro chemistry and offshore sectors •Culture based economy •Women in focus
Regional	•Entrepreneurship within trade and business •New business development •Regional development	•Strategic development •Economic support within strategic areas •Centers of Excellence

Description

Description of the instrument

"Research based Competence Brokering" - a national initiative based on experience from the former "TEFT" program

TEFT Program	Competence Brokering	VRI
1994 - 2003 National program National funded TT between SME - R&D inst. Pro-active focus Technology Focus	2005 – 2007 National Program National and regional funded Regional focus / Regional Coalitions TT between SME – R&D resources Pro-active focus "Broad innovation perspective"	2007 - 2016 Regional Program National and regional funded Regional focus / Regional Coalitions Competence transfer between SME – R&D resources Pro-active focus "Broad innovation perspective"

REBASING
Research-based Competence Brokering

Description of the instrument

SME goal	• Project goal * R&D focus
Institute goal	• SME as attractive customer
System goal	• Regional R&D cooperation

Main Goals:

• **Linking the SMEs needs to research opportunities**
To promote greater focus on R&D activity in companies with little or no R&D experience in order to increase their internal innovative capacity, thereby enhancing value creation and competitiveness (→ stimulation of R&D demand).

• **Research institutes as partners to SME**
*To strengthen the role of the research institutes as **partners** in collaboration with industry . The competence mediators should contribute to a heightened awareness of the possibilities and potential of the SMEs demand for research.*
(→ stimulation of R&D supply).

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Research-based Competence Brokering
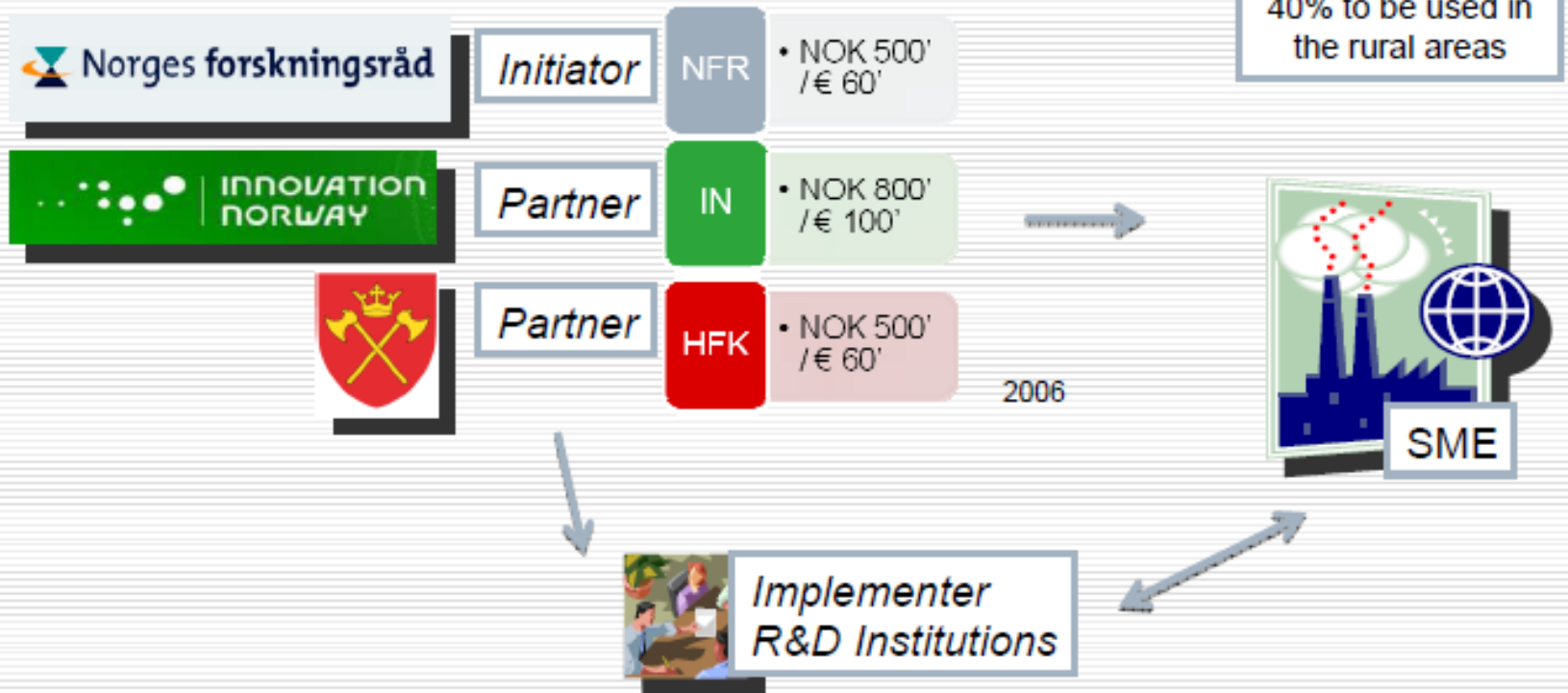
Description of the instrument

Subsidiary goals:

- Increase the R&D activity of SME

- Improve the reception capacities of SME

- Strengthen the economic competitiveness of SME

- Strengthen the knowledge of new technology adopted by the SME

- Strengthen the links and communication between R&D inst. and SME

- Support technology transfer from universities and technical colleges

- Increase the knowledge of the TT-process and the methodology

Description of the instrument

National and regional funding

Norges forskningsråd	*Initiator*	NFR	• NOK 500' /€ 60'
INNOVATION NORWAY	*Partner*	IN	• NOK 800' /€ 100'
	Partner	HFK	• NOK 500' /€ 60'

2006

National priorities: Project funding 40% to be used in the rural areas

SME

Implementer R&D Institutions

Description of the instrument

Project fundings:

Typical project budget 160' NOK (ca € 20')

External funding NOK 80' (50%)   (ca € 10')

Private funding NOK 20' + 60' (50%) (ca € 10')

Typical:
- Small scale projects:
- Limited funding
- Limited time
- Limited R&D
- Preliminary work, start-ups
  - "Feasibility study"
  - "Pre research / investigation"
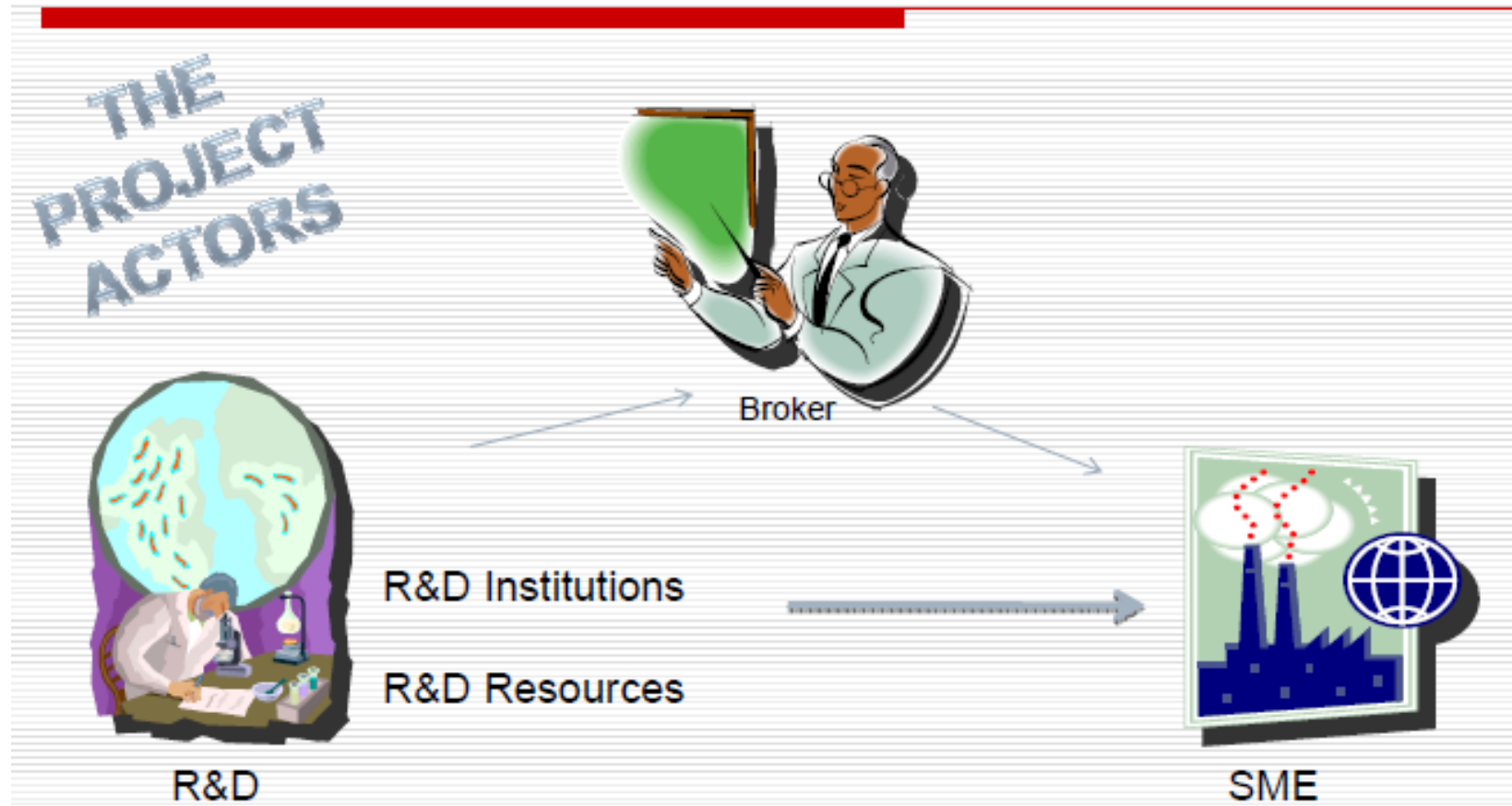
Description of the instrument

Characterisation of the Competence Broker :

• Experienced Researchers act as competence brokers

• The competence broker must:

- • Have a broad R&D network (national and regional)

- • Experience in Projects planning and Project performing

- • Have sufficient soft-skills (communicate, counseling, guiding, be determined ...)

- • To be an initiator, a pusher, following-up, TT mediator, quality assurer, TT-process experience

- • To establish interdisciplinary cooperation

Description of the instrument

THE PROJECT ACTORS

Broker

R&D Institutions

R&D Resources

R&D

SME

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Description of the instrument

- **Quantitative (2010)**
- Total financing (Hordaland): € 250´
  - NRC : € 113´
  - Hordaland County Council: € 75´
  - Companies and R&D inst: € 62´
- This is to finance the infrastructure of the programme
- The company and network projects are financed 50% from Innovation Norway and 50% from the company involved

Impact/Result

Impact / result of the instrument

- **Qualitative (2010)**
- **Value or estimated expression of success**
  - 11 company projects : NOK 1.1 M, € 137´
  - 5 networking projects: NOK 1.250M, € 157´
  - The companies have to equal this amount
  - Total R&D initiated from the competence brokering:
    NOK 4.7 M, € 587´
- **Projects continued with funding from other sources**
  - *through the „Skattefunn" instrument*
  - *trough own / private financing*
  - *trough other governmental innovation programs*
    (eg. Innvovation Norway instruments)

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Impact / result of the instrument

- **Who participate in Hordaland projects ?**
- industry from different branches mostly: energy, maritime, marine and tourism
- Mostly small and medium sized manufactures with from 5 to 250 employees
- geographically scattered
- both "high-tech" and "low-tech" manufacturers

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Impact / result of the instrument
4 cases

Fjellstrand	Tysse Mechanical	Fitjar Concrete	Bremnes Seafood
Finding state of the art battery technology for ferry	Industrial design of new car hanger generation	Development of new product added to concrete	Utilising fish scrap from salmon in new products

Success Factors
Bottlenecks/ Need for improvement

Success factors of the instrument

High focus on:

The Technology Transfer Process

➢ **Sucess factor:** **Technology Results at the SME**
base for further Product Development work

➢**Sucess factor:** **Higher Technology knowledge at the SME**
adaptable to further R&D work

➢ **Sucess factor:** **A proven and consistent method**
adaptable to further R&D work

➢**Sucess factor:** **Number of projects**
at the different regional R&D institutions

Bottlenecks of the instrument

- **TT process is strong related to the Competence brokers capacity and network**
- **Incapacity, interpersonal barriers or lack of competence at the SME or R&D**
- **Low priority or interests in TT from the University-sector**
- **Limitation in outreach activities due to limited competence broker staff**
- **Limited funding allow "only" start-up projects, further R&D is dependent on other financing**
- **Unclear priorities *(and sub goals)* in the different national regions**
- **Focus on SME goals, but lower on institute- and system goals** (regional)

Needs for improvement of the instrument

Implementation

- Increase the competence of the competence broker *(incl. network)*

- Increase the possibilities of take-over project funding *(extensions)*

Further Improvements needed

- Incentives to motivate R&D-institutions / universities

- A more experimental approach to the competence brokerage instrument

Future development

> "The efficient and successful Technology Transfer is an ART not a TECHNIQUE, and the skill of communication is an important talent."

We hope that the REBASING project will help develop the instrument further, specially by looking to improve and professionalize the role as competence brokers