



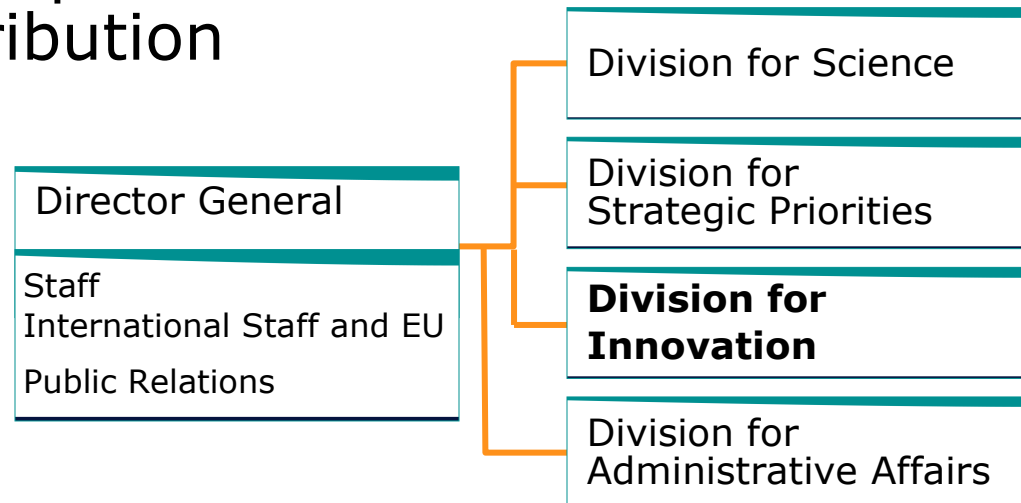
The Norwegian Scheme Centres for Research-based Innovation (CRI)

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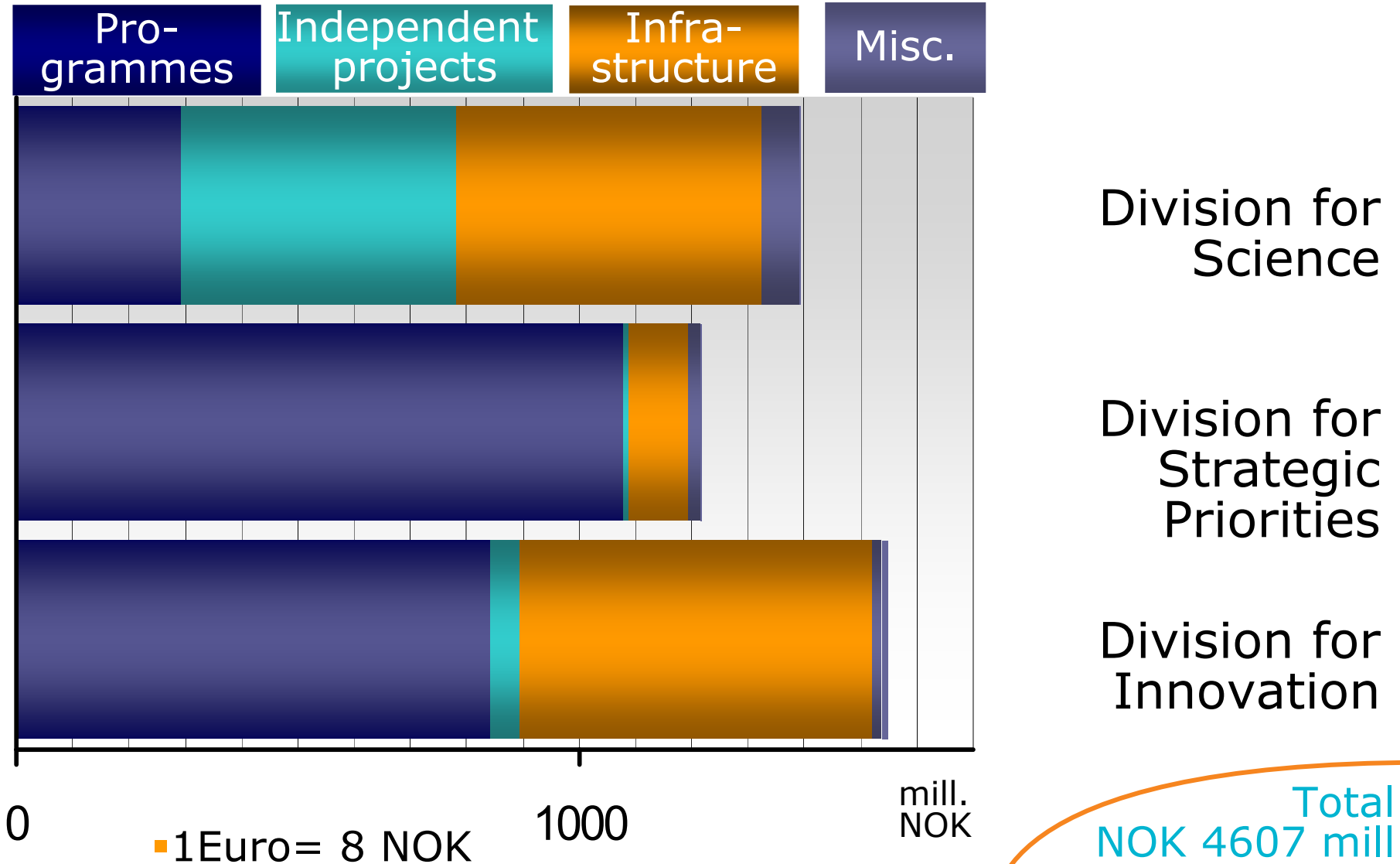


The Research Council of Norway (RCN) is a strategic governmental agency

- Adviser to the government on research-policy issues
- Finance and stimulate public and private R&D
- Create arenas for cooperation and knowledge distribution



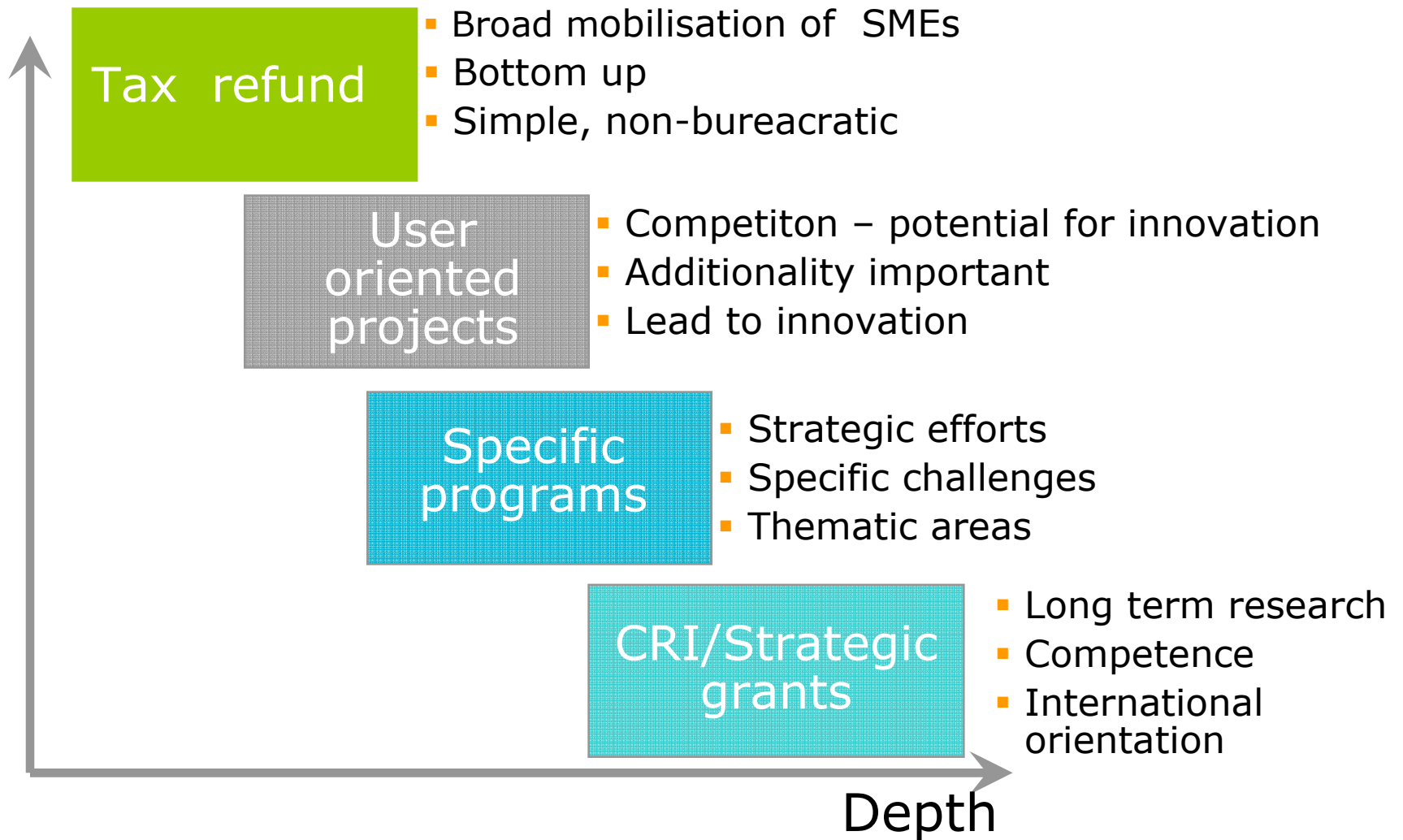
RCN - The distribution of funds (2005)



Total
NOK 4607 mill
(575 mill Euro).

CRI- The flagship in the portefolio for long term industrially oriented research

Width



Centres for Research-based Innovation Objectives

- Stimulate innovation in Norwegian enterprises by encouraging long term research
- Support active research cooperation between innovative enterprises and excellent research groups
- Strengthen industrially oriented research groups working in international networks in the scientific forefront
- Stimulate researcher training in fields of importance to the future of the companies
- Encourage the transfer of knowledge and technology



Motives for starting the CRI-Scheme

International experience with Competence Research Centres

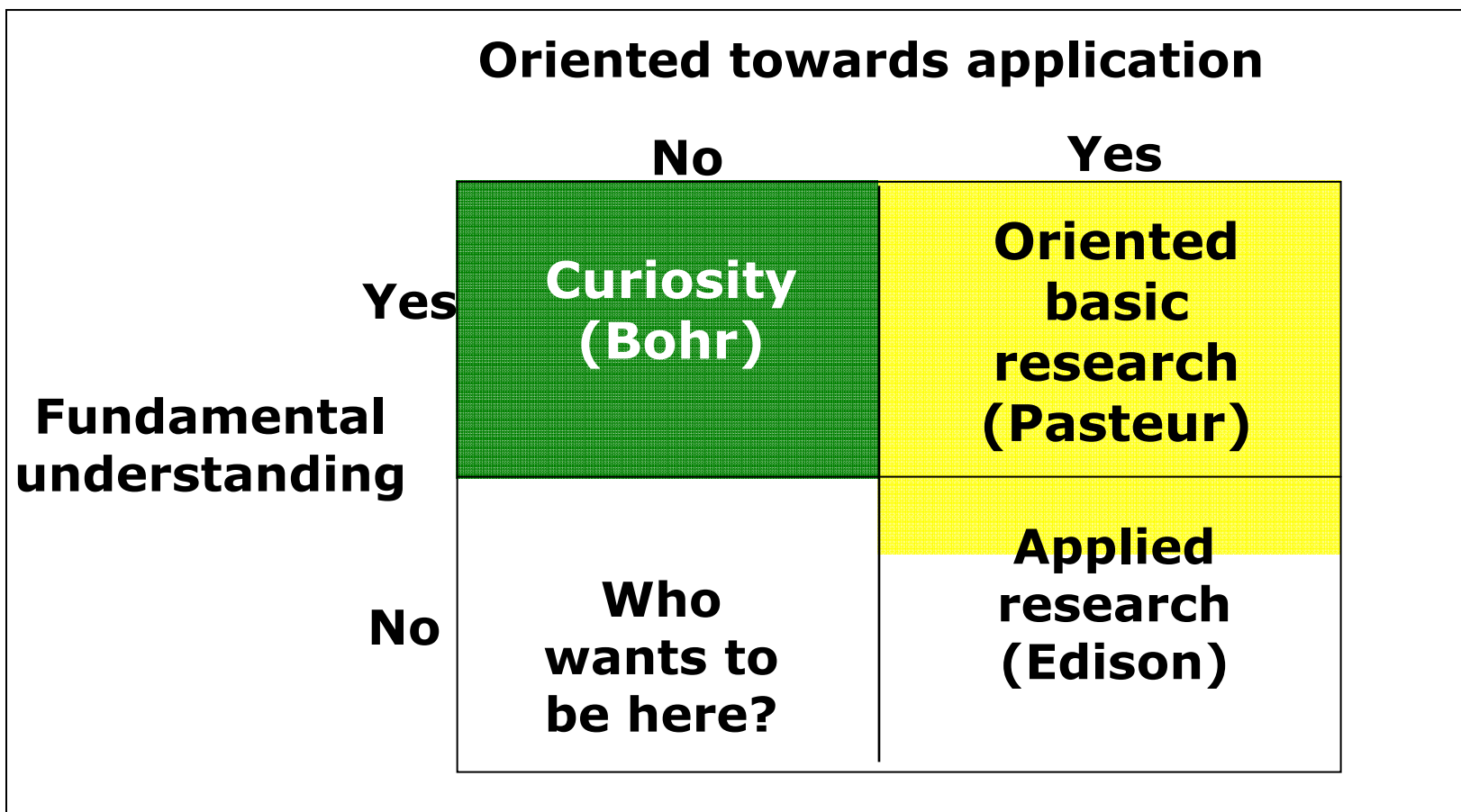
- Performs long-term research with involvement of enterprises
- Creates networks between enterprises, between research groups, and between business sector and academia
- Patience required: Often 7-8 years until results lead to innovation
- Serves as bridgeheads for international collaboration
- Attracts young talent and educates highly skilled personnel of importance for future development

Competence Research Centres

Norwegian challenges – Based on evaluations of technological research

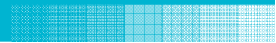
- A need to stimulate more long-term thinking in companies, too much focus on short term challenges
- National investment in industrially oriented fundamental research should be increased
- A need for mechanisms aimed at business and research groups with ambitions to be in the front internationally
- Make it attractive for research oriented enterprises to establish activities in Norway

CRIs operate in Pasteur's Quadrant



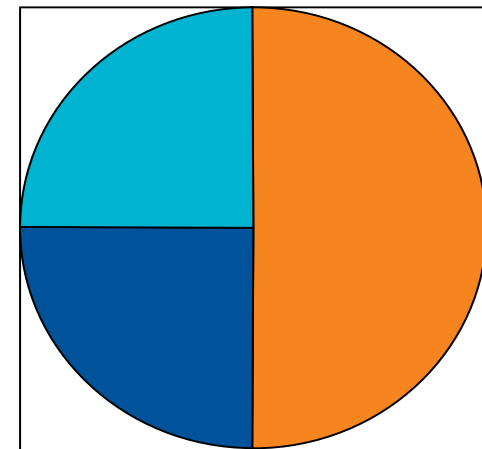
Criteria and requirements for CRI applications

- Scientific quality on a high international level
- The main selection criterion is the potential for innovation and value creation for partners and Norwegian society at large
- No predefined thematic priorities, but the portfolio of CRIs should be diverse
- The application included:
 - Vision and research plan
 - Management and organisation
 - International cooperation and researcher education
 - Senior researchers' profile and expertise
 - Letters of Intent from the partners



A major investment in long-term research

- 14 centres established
- 140 MNOK (17,5MEuro) yearly from RCN
- At least 50% of the funding from the consortium
- At least 25% of the funding from the business partners (NGO)
- Total budget NKr 300 million per year for eight years, total investment NOK 2.4 billion (Euro 300 million)



Organisation of CRI

- Management
 - Strong scientific standing
 - One research plan
 - A board controlled by the user partners
- Host institutions: Universities, Research Institutes, and Enterprises with strong research standing
- Active participation by all partners
- Public enterprises or other research institutions may participate as partners
- International cooperation and researcher training important

Centres for Research-based Innovation (CRIs)

Integrated operations for
upstream petro activities

Concrete innovation

Medical imaging

Aquaculture
technology

Manufacturing future

Structural impact
laboratory

Measurement science
and technology

Telemedicine

Marine bioactives &
drug discovery

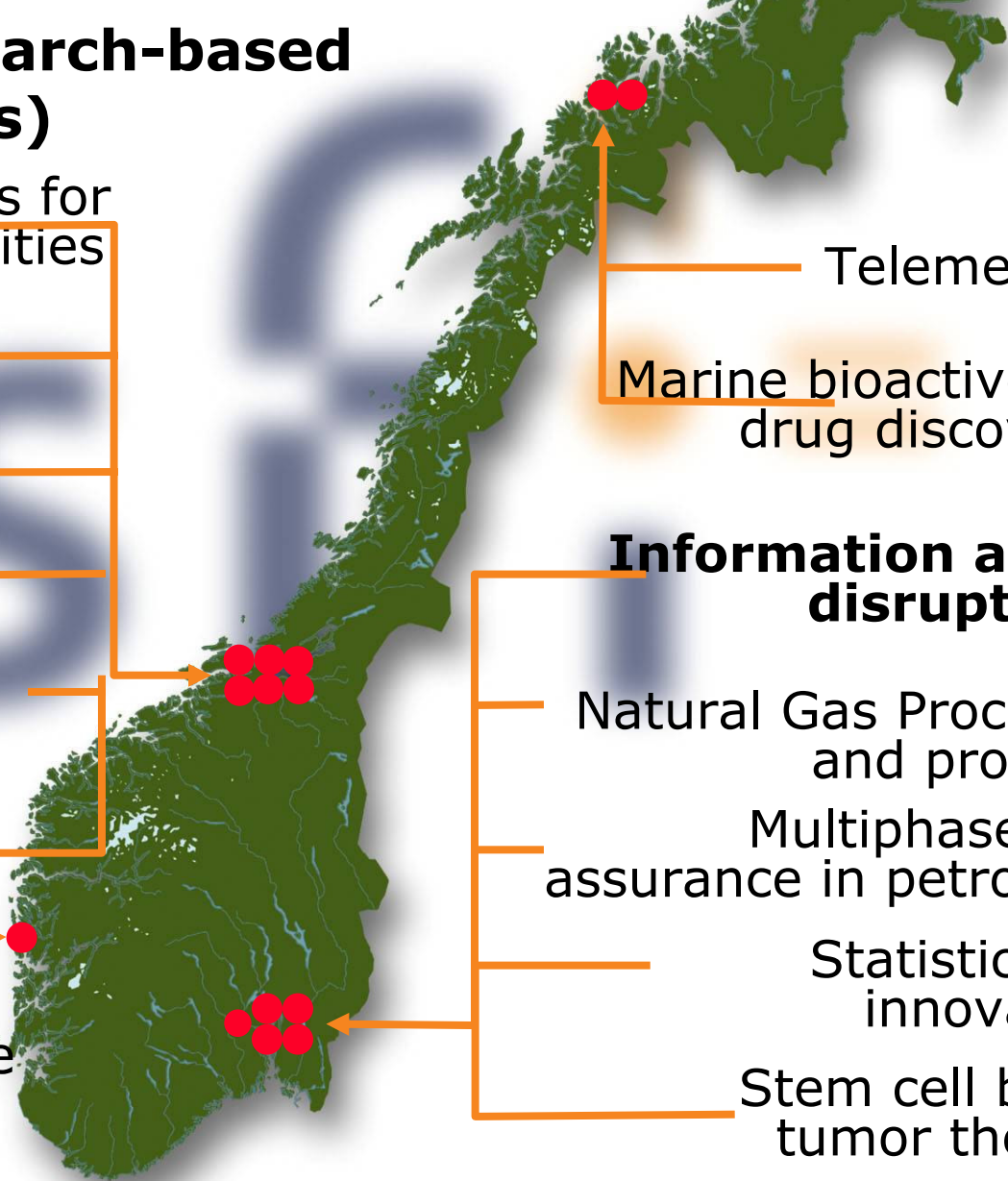
**Information acces
disruptions**

Natural Gas Processes
and products

Multiphase flow
assurance in petroleum

Statistics for
innovation

Stem cell based
tumor therapy



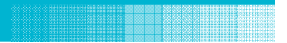
14 Norwegian Centres for Research-based Innovation

Name of centre	Host Institution	Thematic area
Marine bioactives and drug discovery	University of Tromsø	Bio-Science
Medical Imaging Laboratory for Innovative Future Healthcare	NTNU	Medicine
Stem Cell Based Tumor Therapy	Rikshospitalet -University hospital	Medicine
Tromsø Telemedicine Laboratory:	Univ. Hosp. North Norway	ICT/Medicine
Information Access Disruptions	Fast Search & Transfer ASA	ICT
The Michelsen Centre for Industrial Measurement Science and Technology	CMR	ICT
Statistics for Innovation	Norwegian Computing Centre	Services
CREATE - Centre for Research-based Innovation in Aquaculture Technology	SINTEF Fisheries and Aquaculture	Bioproduction
COIN - Concrete Innovation Centre	SINTEF	Materials
Norwegian Manufacturing Future	SINTEF	Productivity
Structural IMPact Laboratory	NTNU	Materials
Center for e-Field and Integrated Operations for Upstream Petroleum Act	NTNU	Petroleum
Innovative Natural Gas Processes and Prod.	University of Oslo	Process techn.
Multiphase Flow Assurance Centre	Institute for Energy Technology	Petroleum

Centres for Research-based Innovation

14 centres - but not 14 buildings

- A long-term binding partnership between research institutions and companies actively engaged in research with the companies in the driving seat
- Commitment and authority on the part of the Centres' leadership essential to success
- Collaboration between companies and research institutions places heavy demands on organization and leadership



CRIs - Criteria for success (1)

Research

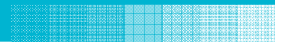
- Long-term industrial research of at a high international level in the field outlined in the project description,
- Doctoral degrees, scientific publications, papers at recognised international conferences
- A distinct research profile and successful at the international level, i.e. researchers win prizes or are invited to be keynote speakers at international conferences
- Researchers from the host institution and partners participate actively in the centre's research
- The centre's user partners have increased their research activities



CRI - Criteria for success (2)

Innovation and value creation

- The centre's research has engendered innovation and enhanced competitiveness among user partners and expectations about social ramifications
- The centre has achieved mutual mobility of personnel between the centre and the user partners.
- The centre has ensured that the competence and results achieved by the research are effectively transferred to the partners.
- The CRI paves the way for results that fall outside user partners' core areas to be commercialised by other means



CRIs - Criteria for success (3)

Internationalisation

- The centre is successful in international research cooperation, e.g. as a player in the EU's framework programme.
- The centre engages in active collaboration with international research groups and to the internationalisation of Norwegian research and industry.
- The centre attracts outstanding foreign researchers, including research fellows and senior staff as visiting foreign researchers

CRIs - Criteria for success (4)

Researcher training and recruitment

- The centre attends effectively to education of researchers
- The centre is actively engaged in education, especially at the masters level
- Improve recruitment to the centre's subject areas with particular emphasis on increased recruitment of women

Partners and funding

- The host institution and partners increase their funding to exceed the minimum requirements.
- Active efforts are made to attract new partners and the centre's partners also include small and medium-sized enterprises with a high technology and innovation profile.
- The centre has been successful in securing other external funding, i.e. EU funding