ICT Research in Norway – The road ahead

Till Christopher Lech

The Research Council of Norway

The remainder of this presentation:

- The view back
- The view on the present
- The view forward

Public investments in ICT R&D in Norway

Governmental investments in ICT Research

Basic founding to UoH sector

- education
- competence building
- recruitment

Strategic/targeted investments

- social challanges
- value creation
- benefits for society

- Research Council of Norway (RCN)
- Innovation Norway
- EU

Tax deduction scheme

- enhance innovation
- R&D motivation
- R&D culture in industry

SkatteFunn

Strategic/targeted investments - RCN

The Research Council	2005	2006	2007	2008	2009	2010
M NOK	482	557	628	680	825	821
M Euro	*60*	*69*	*78*	*85*	*103*	*102*

Who receives the founding from the Research Council (contract partner)?

	2009	2010
TOTAL INVESTMENT (MNOK)	**825**	**821**
Research institutes	*254*	*270*
Universities	*212*	*228*
Industry	*295*	*264*
Other	*64*	*59*

Strategic/targeted investments - RCN

The most important RCN programs for founding ICT research are:

General schemes

BIA

- Open arena
- Industrial needs
- Research based innovation
- Value creation

FRITEK

- Open arena
- Fundamental research
- Scientific quality

Dedicated program

VERDIKT

- Thematic priorities
- ICT research only
- Different application forms
- Industry and society needs

<u>VERDIKT</u> is the program that has the highest strategic impact on ICT research in Norway!

VERDIKT

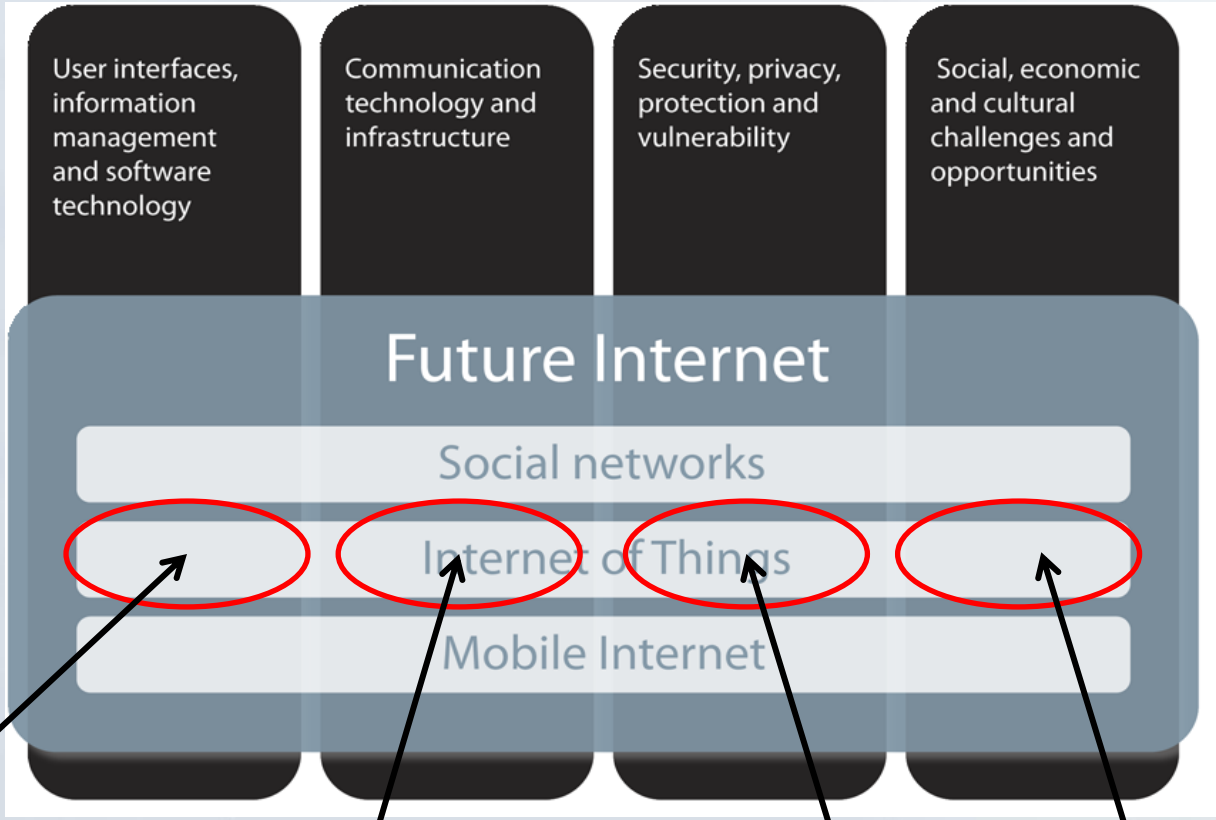
National strategic ICT-research programme (2005 – 2014)

Annual budget (2011): 170 mill NOK (29 mill USD, 22 mill Euro)

Since 2009 the selection of thematic research topics in VERDIKT has been motivated by the identification of three important drivers for the research, development and use of Future Internet:

- Social Networks
- Internet of Things
- Mobile Internet

VERDIKT – research challenges in the cross section between research areas and topics



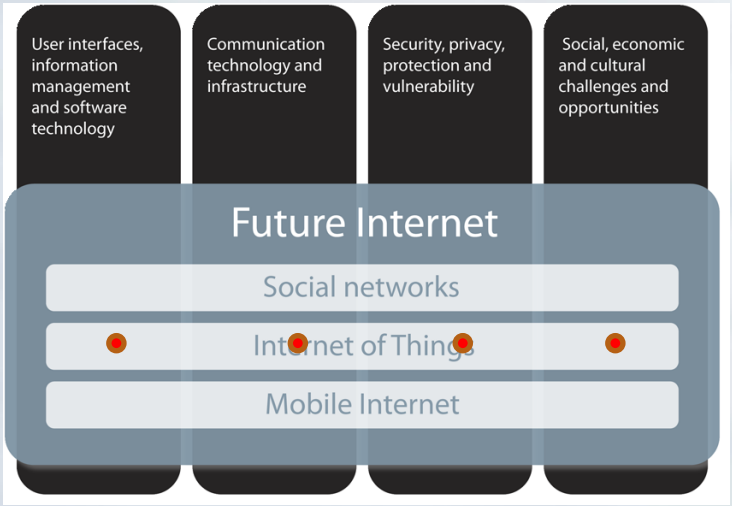
- interaction and user experience with pervasive technology/systems
- platforms and tools for IoT application development
- autonome, self-configurative and smart systems

- sensor an sensor networks – bi directional communication
- techniques for wireless communication (radio, NFC)
- interoperability

- cryptography – secure date transfer
- personal security issues – IoT opportunities and threats
- monitoring and surveillance alarm systems/error detection

- social security and safety vs. monitoring and control
- benefits for public sector
- effects on health and environment
- new business possibilities

VERDIKT- Examples of IoT projects



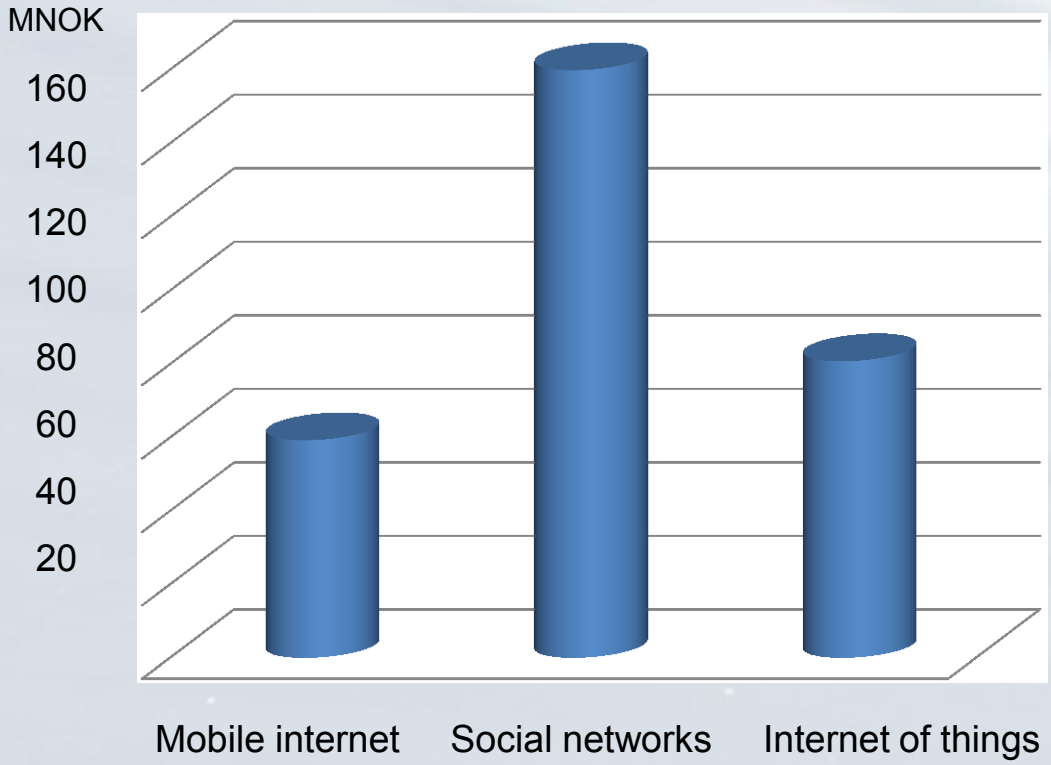
1) 201406 “Tidal News: a Middleware Platform for Adaptive and Dependable Data Dissemination in the Internet of Systems” – University of Oslo

2) 201376 “Real-time wireless communication for process control” – ABB

3) 213131 “Adaptive Security for Smart Internet of Things in eHealth” - Norwegian Computing Centre

4) 201623 “RFID in Society - Preparing for the Internet of things Researching opportunities and obstacles in RFID innovation” – Statens institutt for forbruksforskning

Amount invested as a result of the three calls in 2010 and 2011



Situation – future ICT research strategy in Norway

- The VERDIKT program is in its final stage (finish 2014)
- The Norwegian government has started the process to create a national ICT research strategy – ~~autumn 2012~~ June 2013?
- The RCN has started the planning of a new large ICT program for the period 2015-2025.
- The thematic priorities, choice of instruments, guidelines for the new program etc. have to be decided.
- Norwegian research environments, governmental institutions and industry will be involved in this process.

The road ahead for ICT research funding in Norway

ICT 2025

The starting point: Research questions ICT, Societal Challenges

Research Areas	Societal Challenges						Future and new technologies

Process and State of Play

- **Working group** – across divisions and depts in RCN
- **Stakeholder dialogue meetings and interviews** – R&D, industry, ministries, user organisations etc
- **Workshops** with stakeholders on industries, education, health and welfare, environment
- **Questionnaire** – lots of feedback from R&D
- **Report draft**: Presented at conference Nov.29th, downloadable from RCN web pages

Research themes ICT – Societal challenges meet research areas

Research Areas	Societal Challenges: Enviroment and Climate	Health and welfare	Public administ-ration	Security	Culture and Education	Strategic industries	Future and new technologies
1. Components and systems							
2. Robotics, automatisation and smart spaces							
3. Next generation of systems							
4. Communication infrastructures and technologies							
5. Technologies for digital content							
6. Software and services							
7. Society and technology							

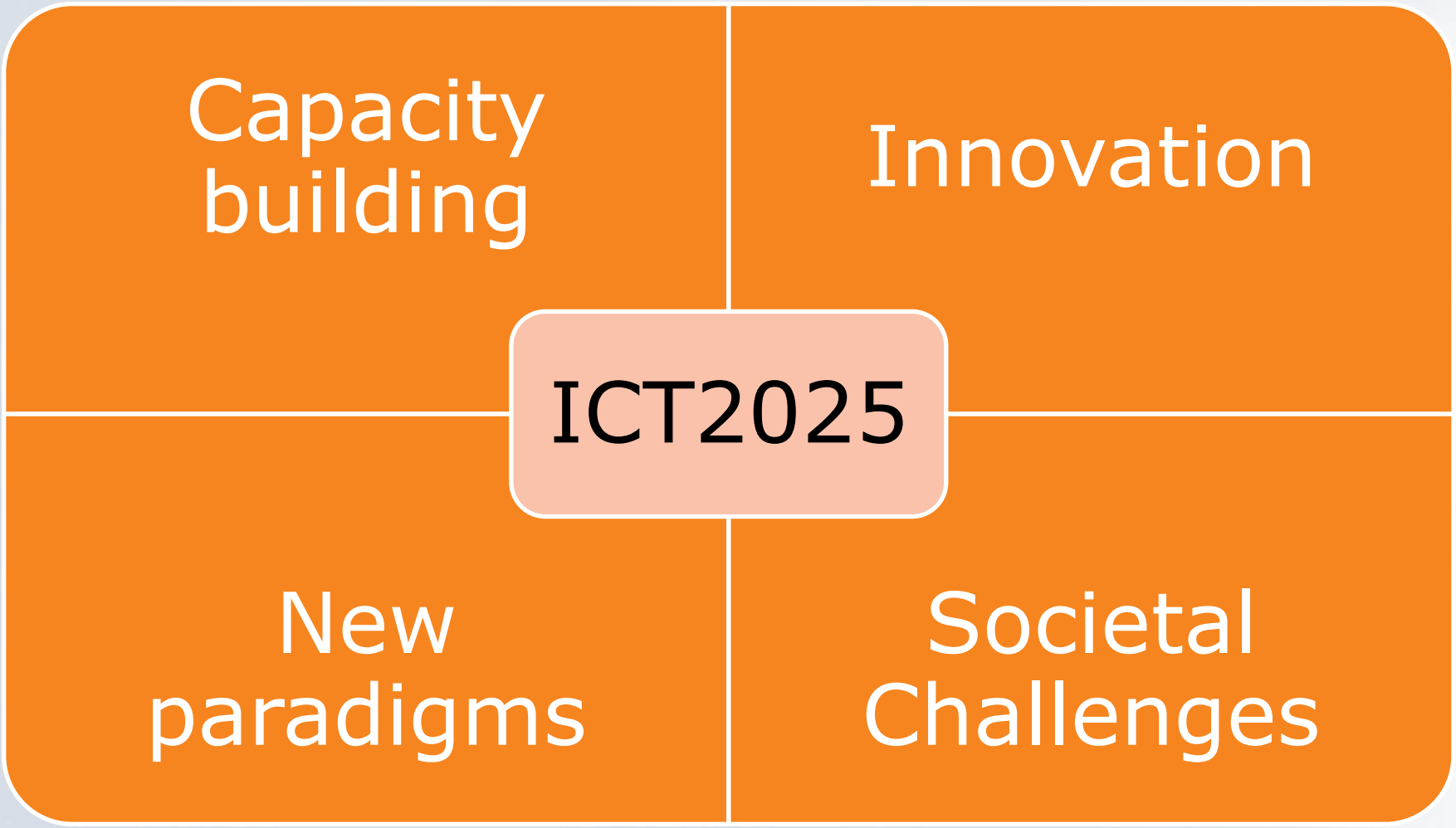
Research Priorities

- **Complexity and robustness** in human-machine and machine2machine interaction, and in the interface between technology and society
- **Data and services everwhere**: availability ov services and content anywhere, anytime
- **A safe and secure information society**: Privacy, security, vulnerability, critical infrastructures
- **ICT at crossroads**: Realising the potential in the interface between ICT and other KETs.

Requirements towards a new ICT programme

- Internationalisation
- Contribution to socio-economic goals
- Building of capacity and compentency
- Address the knowledge triangle
- Stimulation of cooperation and interdisciplinarity
- Research infrastructures

ICT2015 - Goals



ICT 2025 in a wider context: Building a coherent portfolio

BIA

JTI

FRIPRO

SFI

...

Capacity building	Innovation
ICT2025	
New paradigms	Societal Challenges

SFF

The Road Ahead

- Now: Input to RCN’s budget proposal for 2015
- Spring 2013: RCN’s budget proposal 2015 submitted
- ??????
- Autumn 2014 First calls for proposals?