

Nordic ICT Foresight

Minutes from

Workshop on Visions and Scenarios, 9-10 February 2006

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9 - 10 February 2006, 18 representatives from different organisations in the Nordic countries gathered at Aronsborg outside Stockholm for the first workshop in the project “ICT Foresight and Roadmap towards Innovative Applications in the Nordic Countries”. The workshop had two themes. The first one centred around visions of the adoption of ICT for increased productivity and the enhancement of social well-being. The second theme was to outline a draft set of external scenarios for the socio-technical environment around ICT in the Nordic region. The time horizon during the workshop was 10 years.

In the following, shorts notes are provide from the workshop. These notes will be used in further back-office work for developing the results of the workshop. The notes are given in chronological order according to the program of the workshop. The names and organisations of the participants as well as the program can be found in appendix.

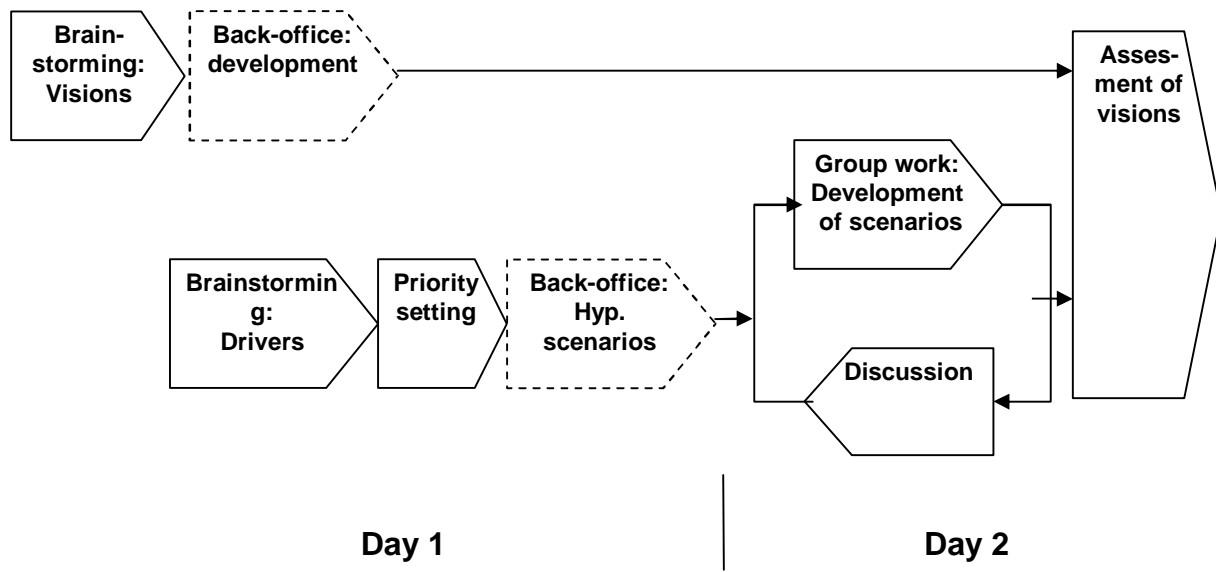
It should be noted that these minutes are nothing by notes. The final results from the workshop will be published in future reports in accordance with deliverables of WP 5 and 6.

Project Meeting and Introduction

A short presentation of each of the SWOTs carried out in the four countries was given. The hand-outs are provided as additional material from the workshop. For further details see each separate national SWOT report.

Jonas Svava Iversen gave a short presentation of the results of WP1. In this desk study the aim was to “To identify visions within the four countries related to the four focus area“. The hand-outs are included in the material from the workshop.

As an introduction to the core of the workshop, Henrik Carlsen presented the main ideas behind the method used and the work process, see figure below.



Brainstorming: Visions

The first brainstorm session aim at a broad collection of participants' ideas on visions for the "adoption of ICT for increased productivity and enhancement of social well-being." Below, the results are sorted according to the four focus areas of the project. They are presented in no particular order.

Experience Economy

Flexible channels to involve citizens in digital media

ICT products without batteries

Personal area networks – media entertainment wherever you go

Nordic countries leading in context sensitivity services; marketing, games, tourism

ICT in support of foresight: new ways of visualising possible futures through games, simulations etc

"Smart dust" – temporary networks/devices

Support to flesh and virtual communities

Intelligent paper, images, videos, sound

Smart jogging tracks; mobile virtual coach, exergames to motivate

Products from E.E. used in education

Convergence Nordic design and ICT

Online sports measurements, i.e. golf, football, ski etc

Augmented, intelligent solutions -> virtual objects and holograms in real environments, travelling, games

Multisensory learning environments

Simultaneous translation and conversation between written and spoken text

Health

A single Nordic demand side for ICT in the health sector

ICT for de-medicalisation

Utilizing Nordic ICT solutions on global health programs

ICT in the education sector as support to the less capable individuals

Homecare by smart computers guides connected to your medical journal

Nordic countries strong on bio-sensors and integration to ICT systems

Homecare ICT applications that support meaningful human interaction and care (without stealing the attention to the ICT application themselves)

Personal fitness monitoring systems

ICT used to enhance learning and implementation of complete ICT systems

Nordic countries leading in reconstructing home-hospital balance

Personal health data card – drivers in IT security

One journal (EHR) accessible everywhere

Small detectors to detect illness (e.g. flu)

Production Economy

Smart RFID tags following goods and food

A transport system that brings cars in fast speed at rails (Sthlm-Gbg-Oslo)

ICT for oil and gas production in arctic areas

Broadening concepts of internet café to a “work-place-where-and-you-want” concept

Self-monitoring devices in production -> informs the operator? that “n and n” will break

Smart production via use of sensors

ICT systems to manage resources and processes in hospitals – tracking patients, doctors; treatment programs; actively steering

ICT tools to improve co-operation by/with regions (for SME:s)

Markets, competencies, funding

Local production plants – CAD/CAM -> ICT to own design

Human free automated car factories

Security and Safety

Nordic balance between integrity and security creates new business opportunities

Secure internet via incentives to users (club for careful)

Trust generators and fosterers

Distributed data storage -> real important information in different places than non-important

Services for dummies

Intelligent automatic visual surveillance in public places

RFID killer – privacy protection for consumers

Nanoscale crime implants – track criminals world wide

Augmented reality “invisible”/integrated glasses for security personnel – instructions
Neighbourhood security solutions with seamless ICT infrastructure
“Electronic passport” in order to enable E-democracy in Europe

General

Nanoelectronics -> non-heating devices, very fast devices, flexible devices
100% recyclable, low-energy ICT devices using renewable energy
Embedded systems with AI improve performance, with opt out option; privacy at home
Environment surveillance – public health monitoring
Nordic co-operation to develop global governance
Smart ICT solutions decreases energy demand radically
Real ? shoring between local authorities e.g. environmental
2012 peak oil: ICT to dematerialise production, immaterialise consumption
ICT used to create virtual organisations – “same goals”
Body area networks
Foldable (very small) mobile communication and deployable devices
Batteries (fuel cells) that must be loaded only once in a half or one year
E-government
Wearable computing adapting to temperature etc.
Ecological “balanced scorecard” on all regional natural resources
“Invisible” noiseless (non-humbling) wireless ICT applications (also wireless connection to power sources)
User interface must be simple
Hidden technology (speech recognition ??)
Feed-back loops cars-system decrease fuel consumption and traffic jams
For aquaculture: Identify illness among fish (river, sea, fish farming) from sensors/microchips
Intelligent fibre based materials
Packing (e.g. anti tamper), integrated publishing

Drivers: Brainstorming and priority setting

This session was the kick-off for the scenario work. The idea is to set the scene for possible future introduction of ICT solutions in the Nordic countries. This is achieved via a set of *external* scenarios, i.e. external with regard to... As a first step in the development of the scenario set, the brainstorming focused on the collection of drivers. Focus was set on *drivers* for the future socio-technical environment that may act as substantial barriers or carriers for the *adoption* of selected ICT solutions. All drivers were then grouped into 41 clusters and each of these was given a name.

In the next session, “priority setting”, the participants voted according to degree of *importance* and *uncertainty*. Each individual had twelve green votes for importance and twelve red votes for uncertainty to distribute among the clusters. More precisely red votes are interpreted as uncertain *and important*. The most relevant measure of importance, thus, is the sum of red and green votes.

Below follows all the drivers grouped according to the clustering. The total number of votes is given for each cluster.

1. Corporate social responsibility (2 green, 6 red)

CSR with respect to misuse prone internet services

Corporate social responsibility

New management paradigms -> e.g. decline of neo-liberalism, resurgence of rigid planning

2. Changing labour market (8 green, 4 red)

Personal insecurity

Project employment vs fulltime, long term employment

Unemployment in western world

Fewer people in the work force

3. US/Global economy (9 red)

US economy collapses?

Stable economy

State deficit brings US economy to its knees. China takes over

4. Challenges to SMEs in global economy (2 green)

SCM → Increased reqts on suppliers

Centralised public procurement

Consistent framework conditions for SME export

5. New ICT related health risks (7 green, 13 red)

Health risks of ICT use

Evidence of ICT health risks

6. IPR (4 green, 8 red)

One stop shop for world wide patents (IPR)

IPR (Patents) Global

Open source devt

IPR w/ Regard to climate change innovation

7. ICT Trust (11 green, 6 red)

Need for robust global comms in crises

Secure internet

Robust global comm/mobile

Need for security

8. *Free services* (8 green, 4 red)

Skypelike services

Fast, easy & cheap access to social service

Ad-hoc free of charge networks

New economy in scale-free networks

9. *Mass customisation* (10 green, 7 red)

Customisation/personalisation at low cost

Culturally adapt ad ICT via modularisation

AI in home appliances - a way to personalise

10. *User centred applications development* (10 green)

New medias

- Virtual reality

- Context aware applications

Easy-to-use ways to overcome info overload

Development of living labs to involve end users - a Nordic model?

11. *Ageing population* (11 green)

Ageing population

Expensive cures for deceases

Ageing rich

Generation gap

12. *Trust* (4 green, 2 red)

End of trust

Corruption

13. *Shortage of basic resources* (3 green, 6 red)

Global shortage of clean water

Rising prices for raw materials

Lack of energy resources

Russian gas blockade

14. *European ICT R&D policy* (1 green, 8 red)

Political will to utilise info soc programmes

Europe tries to deliver on Lisbon

Europe tries to compete w /US

15. *Challenges to SMCs in global innovation system* (3 green, 1 red)

Will there be Nordic (strong) players in generic technologies

Number of available techn. options explodes

(Business) Applications become more systemic

Who will lead the adoption?

One player holds smaller piece of the whole

16. *Global R&D market* (12 green, 6 red)

R&D sourcing of global companies

Globalisation of R&D work force

Countries > specialisation in R&D

Internationalisation of innovation systems

Global division of work

17. *Safe food* (5 green, 6 red)

Requirements for safe food

Need for “clean” and healthy food - seafood

Utilization of the coastal environment

18. *Return of protectionism* (7 red)

Protectionism & isolation

19. *Urban vs Rural* (1 green)

Urbanisation/population clusters in Nordic countries

20. *Nordic social model & values* (9 green, 8 red)

End of the Nordic model

New taxation paradigm (no VAT)

Wish to work less

Nordic countries cooperate in a organized way e.g. standards

Nordic countries attract R&D because they have a tradition of teamwork

21. *Terrorism* (2 green, 10 red)

Fear of terror

War & terrorism

22. *Pandemic* (2 green, 6 red)

Pandemic threats

23. *Organised crime* (3 green, 8 red)

Organized crime - internet an arena

Russian and Baltic mafia dominate Nordic economy?

Piracy

24. *ICT Legislation* (1 green, 2 red)

Supranational legislation on ICT (EU, NTO)

25. *Climate change* (6 green, 5 red)

Decreasing of rain forest increasing deserts → climatic change

Climate change

North Pole melts away

Natural catastrophes (cf. Tsunami)

26. *States run as corporations* (1 red)

States are coordinated more and more like enterprises → competition of states

27. *Mass migration* (1 green)

A country collapses like New Orleans

Mass migration to Europe from Africa?

28. *New professions* (3 green)

Possible new professions → e.g. bioelectronic designer, weak signal catcher, technology interface adviser

29. *Educational incentives* (10 green, 2 red)

Education system - lack of specialists

Lack of tech & sci interest among the young

30. *New power solutions* (5 green, 1 red)

New, lighter and more efficient batteries for mobile technologies

Electric cars become common

31. *E-Government* (2 red)

Transparent e-democracy (Nordic countries)

New democracy in scale-free networks

32. *Digital divide* (6 green, 7 red)

Cultural fragmentation - generations - subcultures

Gender gap

Media literacy - ability to use tech to keep up w / devt

33. *Asia rising* (13 green, 5 red)

Asian middle class > 1 bn

Language barriers

Mandarin & Hindi requirements for manufacturing

Rising wages in China → more ICT

34. *Reqs for flexibility* (0)

Volatility increases in terms of everything

35. *Space developments* (2 red)

Development of space travelling

Will there be a new age of space exploration? Colonise Mars?

36. *Techno-mania* (7 green, 4 red)

“New is always better”

Entertainment non-stop

Band wagon/ me to effect

Moore's law & more than Moore

37. *ICT Techno opt out* (6 green, 3 red)

ICT opt outs

Big brother not accepted

38. *Acceptance of new techs – bio, nano* (2 green, 12 red)

Public acceptance or o/w to n-tech - too uncertain conseq.

Genetical “Deconstructions” - GM Food - GM Cures

Rapid changes in moral climate - e.g. biotech

39. *Strong basic values* (8 green, 11 red)

Muslim groups to restrict internet

Global religious movements

New global political parties' vs polarisation US/west–rest

Freedom & independence as increasing basic values - indiv. cev.

40. *New global E-communities* (3 green, 4 red)

Global, virtual clans → e.g. “doom players”, “Soap opera enthusiasts”

Increase of virtual organisat.

41. *Global tech lock-ins* (2 green, 6 red)

Global monopolise locks inn technological development

Microsoft & Google De facto-standard

Back-office work at the evening of February 9

With the result from the voting above, a further clustering was done. After each new “super cluster” name the total number of votes and the sum of the red votes are given.

Other technologies (8 total, 3 red)

30. New power solutions

35. Space development

ICT related values and trends (56 total, 30 red)

36. Techno mania

32. Digital di vide

37. ICT techno OPT out

5. New ICT rel. health risks

26. States run as corporations

- 31. E-Govt
- 34. Reqts for flexibility

ICT related innovation systems (73 total, 31 red)

- 6. IPR
- 14. Eurip. ICT RDT policy
- 2. CH. labour mkt
- 28. New professions
- 15. Challenges to SMCs
- 24. ICT legisl.
- 16. Glob R&D market
- 29. Educational incentives

ICT related emergent phenomena (71 total, 27 red)

- 8. Free services
- 9. Mass customisation
- 41. Global tech lock-ins
- 10. User centred application development
- 40. New global E-Communities
- 7. ICT Trust

General values & trends (62 total, 27 red)

- 39. Strong basic values
- 20. Nordic soc. model & values
- 1. Corporate social responsibility
- 12. Trust
- 11. Ageing population
- 19. Urban vs rural

Global economy (36 total, 21 red)

- 3. US/global economy
- 33. Asia rising
- 18. Return to protectionism
- 4. Challenges to SME/Glob economy

ICT external threats (77 total, 53 red)

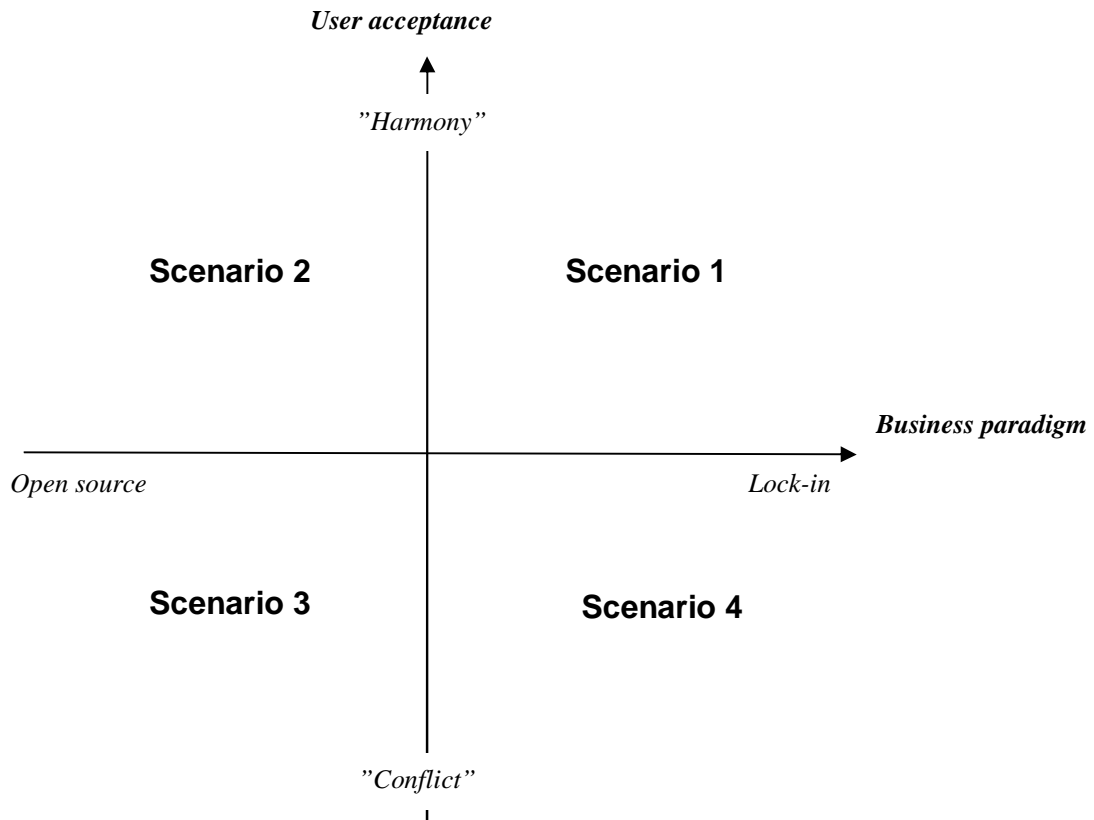
- 21. Terrorism
- 23. Org. crime
- 17. Safe food
- 22. Pandemic
- 38. Acceptance of new technologies – bio nano tech
- 13. Shortage of basil res.
- 27. Mass migration
- 25. Climate change

These seven super clusters constituted the short list for dimensions in the scenario set. A set of four scenarios, hence two dimensions, was the working hypothesis of this work. However, the working group found three dimensions being particularly interesting. The three dimensions and their proposed names was

- User acceptance (*ICT related values and trends*)
- Business paradigm (*ICT related emergent phenomena and ICT related innovation systems*)
- Major value shift (*General values & trends and ICT external threats*)

Presentation and discussion

As a result of the three-dimensional analysis of feasibility/plausibility and challenge (e.g. that all scenarios be quite distinct from all the other), the scenario set that was presented was based on “User acceptance” and “Business paradigm” as the major defining dimensions. This is to say that these two dimensions span the two-dimensional scenarios space, as shown in the figure below.



In the figure the end points of each of the dimensions are given. For the third important dimensions, Major value shift, the end points were defined as “Strengthened Nordic values” and “External shock, Western homogenisation”. Here Scenario 1 was placed at the latter endpoint, Scenario 2 at the former, while Scenarios 3 and 4 were taken as intermediate, “business as usual” scenarios in this regard.

As an input to the group work, a few characteristics for each scenario were given. Below, * denotes an early proposal for a possible name for the scenario.

Scenario 1

- * ICT for security?
- External shock (terrorism etc.)
- Lock-in (“MS for security”)
- Harmony

Scenario 2

- * Nordic xtreme
- Strengthened Nordic values
- Open Source
- Harmony

Scenario 3

- “Business as usual”; external threats
- Open source
- Conflict (Digital divide)

Scenario 4

- * Lico lock-in consortia ltd.
- “Business as usual” Ext. threats
- Lock-in
- Conflict (Anti-Bill Hooligans)

The participants agreed that this was a good candidate for a scenarios set to test to develop further.

Group work: development of scenarios

The participants were divided into four smaller groups, each group focusing on one of the scenarios. The tasks for the work were 1) to “flesh out”, i.e. to further develop the scenario and 2) find a catchy name. The groups worked a bit differently compared to each other, and therefore the material is not presented in a coherent manner below.

Scenario 1

Storyline:

Organised Internet War reflecting religious and cultural tension; Restrictions in travelling, Internet closed down (at least temporarily); Confusion, isolation, political debate; A world of standard ICT + protected networks; Nordic companies initiate sustainable, safe Internet platform

General values and trends

“Colonisation of mars” – safe areas
Safe communities virtually & reality
Immigration to Nordic countries from southern Europe
Cultural values need to be protected
Safe haven /”Fortress”

ICT related phenomena

Company image build on security
NGO:s Free security (B.G. donation)
Tech. solutions for data mining (customization)
A world of standard ICT-production + protected networks
Products attractive for companies rather than end users
Business to business networks
New ways of doing business - new definition of users

ICT related innovation system

Early adopters new solutions for security
Also meaning risk
Also understanding of use of ICT (test bed)
Nordic companies social responsibilities
Security ICT/programmes EU-level
Incentives for public and private initiatives
Demand for security solutions
New opportunities for solutions
All solutions build on “Microsoft”
Nordic companies initiate sustainable safe internet platform

Basic Logic

ICT a compensation for chaos
Restriction of speech self-censuring
New global norms/laws
Restrictions on travel?
Feel fear in the west – transparency decreases in society
B.G. - companies “restrict” to save their business
Pandemic – less trust o other regions
Racism
Big brother society → big sister

Scenario 2

Asia

Positive attitude towards globalisation
Two-side view of China/India, pro/cons
China exists as one whole nation
Small steps towards better HR in China
New market for the Nordic countries
Directed investments to the East
Nordic companies find niches in environmental tech
Edu/business R&D-strong links
Independence from the US

IPR

The Nordic challenge - balance in life

ICT trends

Hidden tech; wireless access everywhere
Easy to-use devices; Nordic spec.

Educational system

Whole chain from tech transfer offices to financing
Not in all subjects must be more entrepreneurial... arts, design,..
Create new demand for new skills
Entrepreneurship integrated in education
Increased flexibility in educational system
OS-thinking in education

Innovation

Reasons: Small players have a role – Governmental R&D spendings
Nordic Reg. attractive for R&D
Environment /biotech/niches in ICT
Team entrepr.ship instead of industrial
Complementary competencies
Governmental initiates for boosting OS-business
Attractive innovation system for ext. partners; innov, tech, institutional setting, financing, entr.

Social model

Balance in life
Workforce mobility and flexibility
Safe to move instead of forced to
OS thinking suits the Nordic mind
More people work less hour each
Same income distribution as 2006

Global economy

Stable

Small slow down in US, no crash

New business opportunities

Design – logistics business models

Nordic combination of design & tech produce new services

Natural resources & special competencies → new services

New business models around OS

Nordic official agencies big costumers for OS

ICT & Logistics

Scenario 3

Storyline:

SW Patents accepted; Incumbent players try to cash out; Hostility increases

Developer communities fight back; MS and other incumbents focus on niche markets

Storyline:

SW-patents in USA; Rejected; MS goes open source; MS Publishes their source code; MS becomes the “IKEA”; SMEs attack niche markets

Mainstream developer communities emerge

The ICT Jungle

- Elite users’ paradise
- Business fragmented
- The ICT jungle
- Business in helping people in the jungle
- Retail structure fragmented “Bike repair shops”
- SME & entrepreneurs
- Standardisation cooption
- Some strong de facto - standards - often old
- Many ICT non users
- ICT elite hobby

The external threats

- The weak are very weak – to afraid to use the net
- Good possibilities for org. crime & terrorists to coordinate over the net
- New bill rising? Prevented by lack of IPR? Some IKEA concepts? Big low cost chains cater to the weak
- IPR irrelevant – quick mkt entry?
- OS: Elite social movement
- Communities/ subcultures
- ‘Bike shop’ customisation (not quite ‘mass’)
- Big still ‘platform’ providers e.g. key hardware comp.

- 'Egoistic altruism' - IKEA, wrt the weak - OS Developers to win approv??
- New role for unions? Social movement for the weak?
- ?? in court
- Becomes the "IKEA"
- Publishes source code
- Mainstream development hosted by/around MS
- The ICT jungle

Scenario 4

LICO – Lock-In Consortia UnLtd.

ICT related values and trends: The future of business-as-usual scenario is dependent on ratio between drop-outs and survivors. In Nordic countries < 10, Latin America > 80

Storylines

Developed world is divided by largest lock-in players: China telecom, Nokia & Vodafone, Microsoft, Google & eBay (Europe, USA). The Nordic players (TeliaSonera, Telenor) may be strategic in the blocks to survive. These blocks have shared the world. There are open source hackers that disturb the system by attacking the large players. There are several "Undernets", which are based on different kinds of hacker ethics (open source), but also to the logic of lock-in blocks. The social model is decided upon its ratio of survivors and drop-outs. In Nordic country the tolerance of drop-outs is less than 10 %, in Latin America it might be even over 80 %.

The products are locked-in (global mass-customized products). The power is concentrated to very few people. The people are kept happy via "tittytainment", standardized entertainment. The development produces happy silent majority for whom the most of the services are provided.

The silent majority of the people use standardized "Internet". It is opposed by glocal "Undernets" that are run by open source hackers, the "anti-Bill hooligans". They are open, free-source nomadic hackers that are dispersed like al-Qaida: there are no leaders to fight against. There are lot revolutionary, underground movements that are networking in many ways. New "underground innovation systems" are emerging, flourishing on the basis of hacker and open source community activities. These movements are run by prophetic figures. These networks could be in competitive situation against each other (GNU's, Linuxes).

There are public universities and private universities. The best brains go through private universities, but most of the people go through a public university. The university system is broken into projects - professors run for money and try to find funds for basic activities.

The university is run like business, it should make direct profits and direct contributions to society (compared to the paradigm of basic research). This business logic is also permeating the whole society: all the functions of the nation state are to run in market principles, based on business qualifications.

The monopolistic companies are selling safe life, ecological alternatives and safe food etc. whatever you want. You can't decide freely; the products are sold via "concepts of freedom", but actually all the products rigidly planned and programmed.

Trends in the business-as-usual scenario might be nanotechnology and biometric systems. Nano is more like conceptual driver, not actually technology that could really produce something in ten years. However, it is concept that is leading the development and efforts.

Presentation of elaborated scenarios

After the group work, the key characteristics of each scenario was summarised as follows:

Scenario 1

- * Big sister?
- * The global fortress?
 - Valued based global conflicts also affects Nordic countries
 - Nordic countries parts of uniform western world
 - Big brands (like ms) symbols of security (safe havens?)

Scenario 2

- * The Nordic challenge - balance in life
 - Balance in life → rejection of US business model & ends to unemployment
 - Nordic innovation policies: Open source, open mind and open to foreign investors
 - Strong links Asia-Nordic countries
 - Nordic strengths: Marine, design, logistics, forestry, oil & gas etc.

Scenario 3

- * Elite users' paradise
- * ICT Jungle
 - Open source and ICT SMEs ('Bike shops' customisation) become establishment
 - The Bill Gates-heroes of the poor and weak (cf. Ingvar Kamprad!)
 - Good opportunities for crime and terror in heterogeneous internet
 - Limited room for E-solutions due to lack of accepted standard etc.

Scenario 4

- * Lico lock-in consortia ltd.
 - The Bill Gates establishment
 - Open source and SMEs under net actors

- Most people accept E-services - would-be mass customised
- Global big business rules
- Crime & terror thrive in the under nets

Presentation of visions and priority setting

The visions collected during the first brainstorming were clustered and further developed back-office between the first and second day of the workshop. The “Elaborated visions” are grouped according to the four focus themes below, and a few explanatory sentences support each vision.

Experience Economy

1. Smart training

- Home exercise equipment
- Virtual interface gives motivation via games
- Virtual runner, run in the landscape

2. Intelligent paper

- Successful co-operation between ITC companies and paper industry
- Instant transfer of data (text, images, sound?, video) from e.g. the PC or the mobile phone to a paper
- A constantly updated newspaper

3. Enhanced reality games

- Add virtual elements in a real physical environment
- Mixed virtual/real world
- WWII with all the equipment and a whole battalion of soldiers.
- Fight with a lion in Coliseum

4. All-sensors sports events

- A lot sensors are places at various strategic places in a sports event, e.g. football (the ball, the shoes, around arena), Formula 1, hockey (camera in the walls, the helmets, the goal),..
- Create innovative online games based on sensor information; betting markets
- Create new visual services

Health

5. The personal health card

- Everybody has a smartcard in the wallet with all medical data
- When in need of health care, individuals show there card to whatever hospital or other health agency

- Activated via biometric identification
- Valid in the whole Nordic Region
- The card is available only to health care institutions accredited by the state, not for insurance companies or employers.

6. Early warning system for elderly at home

- Wearables with sensors attached to an individual
- If e.g. blood pressure is too low, a signal is sent to the hospital
- Both applicable at home and outside
- Even other diseases can be measured, e.g. eye movement for dementia and Alzheimer's. It measures the level of consciousness.

7. A single Nordic demand side for ICT in the health sector

- There exist common standards for ICT systems in the health sector.
- A single market which is of critical size for being commercially interesting
- Better competition between companies.
- One system for electronic health records – electronic health record

Production Economy

8. Self-monitoring and robust production lines

- Modularity; if the system detects a fault it warns (everywhere) the operator before it happens and also reroute the production line
- We can always deliver on time, fault-tolerant production

9. Control system for efficient energy use

- A control system for e.g. efficient heating of buildings
- Combination of sensors and optimisation algorithms decreases the energy need radically

Security and Safety

10. A close safe internet

- Only accredited modules are allowed to attach
- Applications typically in health sector, E-banking, contacts with authorities

11. Security system for local neighbourhoods

- Result of convergence between security services industry and ICT industry
- Intelligent system for surveillances of a local area
- Alternative to gated communities
- Sound balance between integrity and security

General

12. Dual online-offline spontaneous networks

- A trustworthy system that permit people to be online everywhere, and to log in and log out instantaneously
- It is ensured that when you log out, you can't be traced or eavesdropped
- When you're in, you're part of the global system

13. Intelligent distributed data storage

- To be utilized in the ad hoc, device independent mobile networks; accessible everywhere
- Trustable e-Identity (via bioinformatics) is a key element in the system.
- System makes a profile of the user and recognizes semi-automatically the data that should be recorded, and records it to a safe "storage space"
- The data could be files or spontaneous notes made by user via speech recognition.
- Makes continuous separations between important data in the user-profile, not-so-important data and threats/viruses.

The participants were then asked to vote on how well these visions support the aim of the project, i.e. "...to increase the welfare in the Nordic countries and also in other parts of the world", in each of the four scenarios (green votes). If a vision is counter productive for this aim in a scenario, red votes were given. The table below summarise the result from the voting.

	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Total Green	Total Red
	Green	Red	Green	Red	Green	Red	Green	Red		
Vision 1	5	0	13	0	8	0	5	2	31	2
2	2	1	13	0	3	1	5	2	23	4
3	5	1	4	2	4	0	12	1	25	4
4	4	1	3	3	4	1	10	0	21	5
5	11	1	16	1	4	4	7	4	38	10
6	7	1	17	0	3	2	4	2	31	5
7	6	0	18	0	3	2	8	3	35	5
8	4	0	9	0	4	1	6	0	23	1
9	3	0	7	0	1	2	4	1	15	3
10	11	0	5	0	0	3	8	1	24	4
11	8	0	6	0	5	1	3	3	22	4
12	1	7	10	1	6	0	3	6	20	14
13	7	2	6	1	5	1	8	1	26	5

Participants

Toni Ahlqvist	VTT
Björn Andvig	SINTEF
Henrik Carlsen	FOI
Jan Dietz	The Research Council of Norway
Annele Eerola	VTT
E. Anders Eriksson	FOI
Jóannes J. Gaard	Ingeniørforeningen i Danmark
Pål Gretland	Norges Närings- og handelsdepartement
Jonas Svava Iversen	DTI
Sonja Kangas	VTT
Ernst Kristiansen	SINTEF
Birgitta Lewerentz	FOI
Matti Penttilä	VTT
Antti Pirttimäki	VTT
Pekka Salmi	Sitra Industry Ventures, Finland
Patrik Sandgren	Vinnova – Swedish Agency for Innovation Systems
Svein Vefall	LO, Norge
Joakim Wikland	The Sahlgrenska Academy at Göteborg University
Kristin Woje Ellingsen	SIVA - Selskapet for industrivekst, Norge

Program

Day 1, February 9

11:00	Project Meeting Welcome Introduction of participants Status of project	T. Ahlqvist, VTT
13:00	LUNCH	
14:00	Introduction to Workshop Explanation of purpose and work process Practical details	H. Carlsen, FOI
14:30	Brainstorming: Visions “Visions of the adoption of ICT for increased productivity and the enhancement of social well-being.” Broad collection of participants’ ideas. Time horizon 10 yrs.	E.A. Eriksson, FOI
15:30	Coffee and fruit	
16:00	Brainstorming: Drivers Focus is set on drivers for the future socio-technical environment that may act as substantial barriers or carriers for the adoption of ICT solutions	E.A. Eriksson, FOI
18:00	BREAK	
19:00	Priority setting: Drivers Voting on uncertainty and importance	B. Lewerentz, FOI
20:00	DINNER	

Day 2, February 10

8:00	Presentation and discussion A draft scenario set is presented and discussed in plenum.	E.A. Eriksson, FOI
9:00	Group work w/ tea and coffee Further development of the draft scenarios	
10:30	Presentation of group work	group leaders
11:30	LUNCH	
12:20	Presentation of scenario set Elaborated scenarios are discussed.	E.A. Eriksson, FOI
13:00	Presentation of visions Discussions	H. Carlsen, FOI
13:30	Priority setting w/ tea and coffee	H. Carlsen, FOI
14:00	Conclusions	T. Ahlqvist, VTT
14:30	END	