

How Does ICT Contribute to Public Sector Innovation?



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About myself

- Associate Professor at VUC since 2002
- Academic background: Information Systems
- Research: Public Sector Innovation, e-Government, e-Participation
- Center for Innovation and Management
 - Multidisciplinary research team
- Citizen centricity, user centricity, customer centricity, through cc:eGov and NET-EUCEN



The answer..

- ICT is very important for public sector innovation.
- ICT is not always the answer, but in most cases ICT plays an important role.
- We will look at innovation, and something we call user centric innovation
- Then we will take a look at current eGovernment plans in Norway
- And finally, a few case examples



Innovation



Innovation

- New products
- New services
- New processes
- BUT new is not enough
- Value creation



The essence of innovation

➤ Use a new idea or method to create value



The purpose of innovation

- Better products, services, processes
- What is better?
 - Efficiency / cost reduction
 - Quality
 - Improved functionality
 - Ease of use / user satisfaction



What are the drivers?

- Cost-reduction-driven innovation
- Research-driven innovation
- User-driven innovation



- Most innovations fail
- And companies that don't innovate die

[Henry Chesbrough: Open Innovation, Harvard Business School Press]



Innovation

➤ Dimensions

➤ Closed Innovation

➤ Open Innovation

➤ Working with external partners

➤ Buy intellectual property

➤ Sell intellectual property



Open and closed innovation

Contrasting Principles of Closed and Open Innovation

Closed Innovation Principles	Open Innovation Principles
The smart people in our field work for us.	Not all the smart people work for us. We need to work with smart people inside and outside our company.
To profit from R&D, we must discover it, develop it, and ship it ourselves.	External R&D can create significant value; internal R&D is needed to claim some portion of that value.
If we discover it ourselves, we will get it to market first.	We don't have to originate the research to profit from it.
The company that gets an innovation to market first will win.	Building a better business model is better than getting to market first.
If we create the most and the best ideas in the industry, we will win.	If we make the best use of internal and external ideas, we will win.
We should control our IP, so that our competitors don't profit from our ideas.	We should profit from others' use of our IP and we should buy others' IP whenever it advances our own business model.

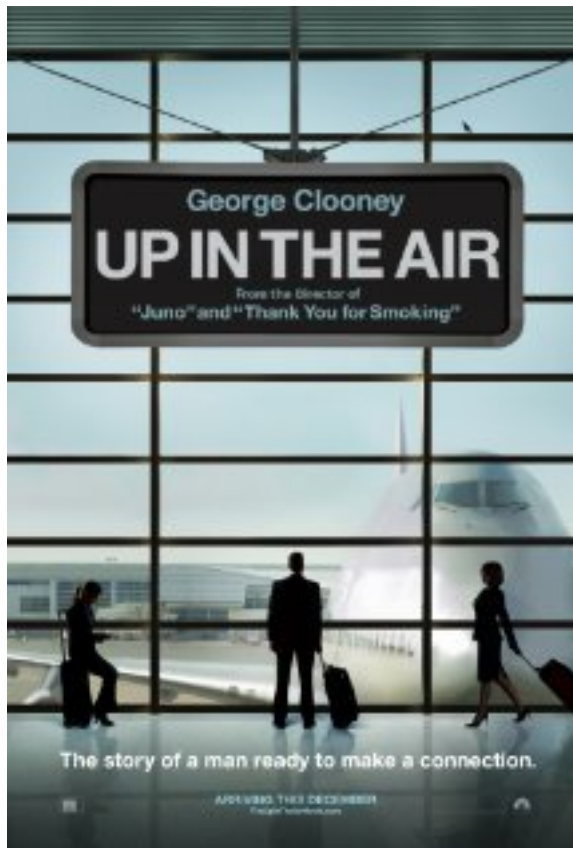


Innovation

- Radical or disruptive innovation
 - Changes the rules in a market
- Incremental innovation
 - Stepwise refinements



Incremental and disruptive innovation



➤ Example: Business trips



Other good examples

- Airline industry / tourism
- Music
- Retailing



User Innovation (UI)

- When user invent by themselves
- Examples of areas [Voss, 2010]:
 - Scientific Instruments and Machine Tools
 - Medical Instruments
 - Outdoor Sports Consumer Products
 - ICT`s and Digital Products and Tools
- Users that know how to program



User Innovation (UI)

- Modifying existing products
- Making new products and services
- Software: Lotus Notes, report generators
- Music: Take control over the value chain



User Centric Innovation



User Centric Innovation

- User innovation is not user centric innovation
- User centric innovation is when users are involved in the innovation process, preferably in all stages of the innovation process.



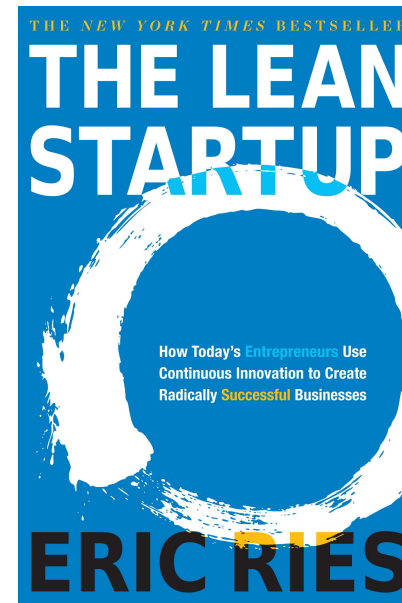
User Centric Innovation

- Systematic collection, collaboration, participation
- Users may be co-creators of the service
- Adding their wishes and expectations
- But also their competence
- Mindset



Lean Startup Methodology

- Eric Ries
- Startups as a learning process
- Based on Lean
- Experiment and validate

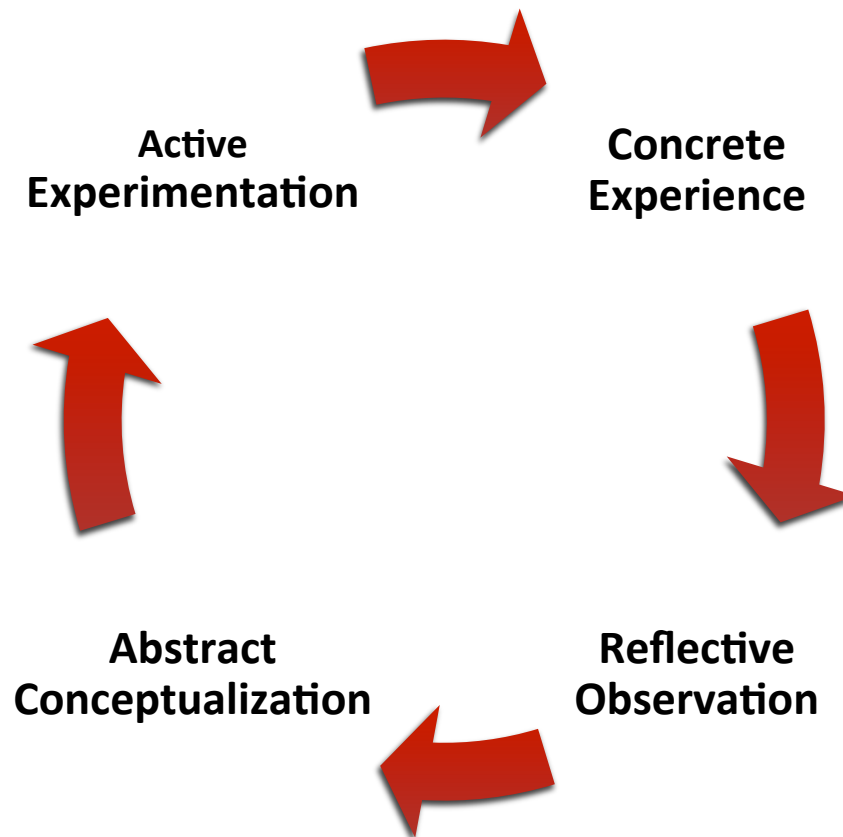


Lean Startup

- Key point: Validated learning
- Scientifically validated learning through frequent experiments where vision is tested
 - Minimum viable product
- Build-Measure-Learn (feedback loop)



Kolbs Learning Cycle



Users and innovation

- Vestfold University College has established an Innovatory. This is some kind of a laboratory, an arena where stakeholder can meet and innovate.
- Post conference: The Innovatory was officially opened on Thursday April 3rd, 2014, by the Minister of Local Government and Modernization Mr. Jan Tore Sanner.



Users and Innovation

- First phase: Focus on welfare technology
- Vendors and manufacturers
- Users
 - Employees
 - End users



METHODOLOGY



Methodology

- Observe real users in real situations in a real environment
- Use risk planning
- Validate all phases with real users
- Make systems to receive user feedback.



A Risk Based Approach

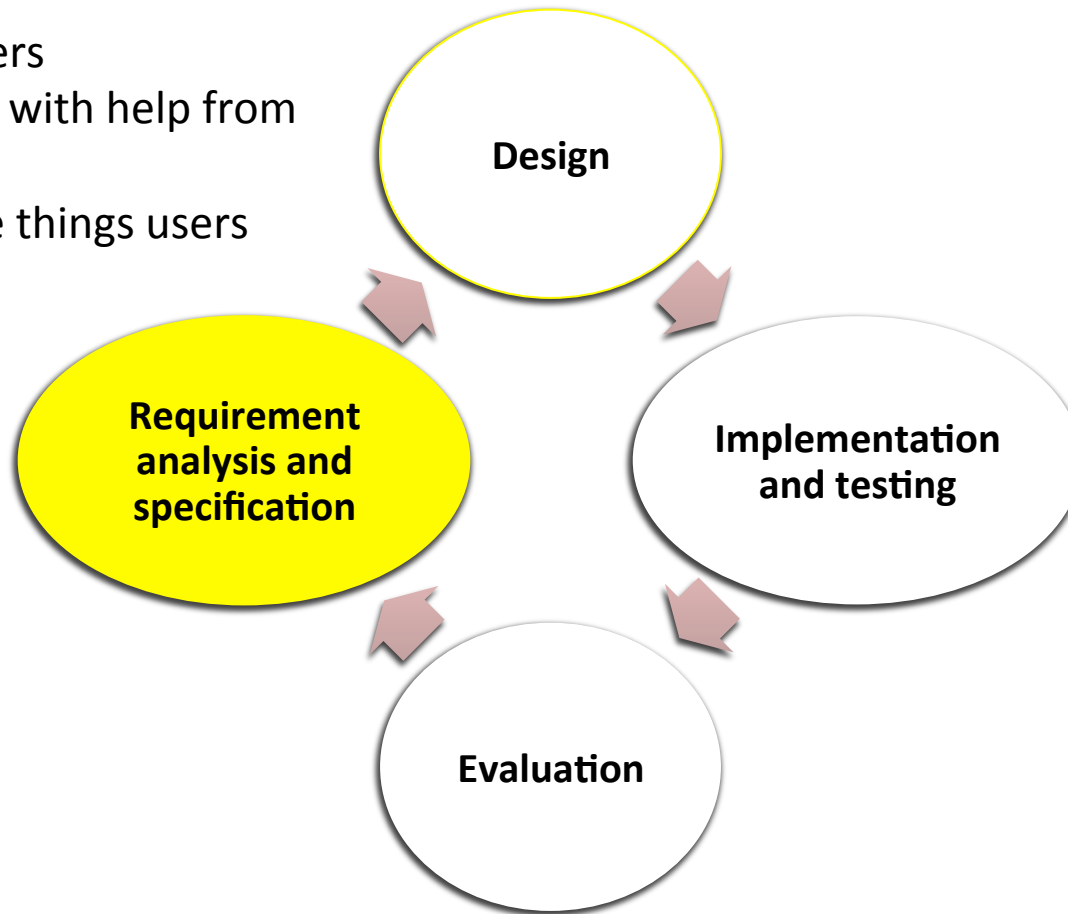
- List all risks (unprioritized, brainstorming)
- Assign weights to each risk factor
- Assign probability to each risk factor
- Multiply weight with probability
- Use these numbers to prioritize



User participation

Requirement analysis and specification

- 1) Identify the users
- 2) Build scenarios with help from the users
- 3) Use cases – the things users will do..



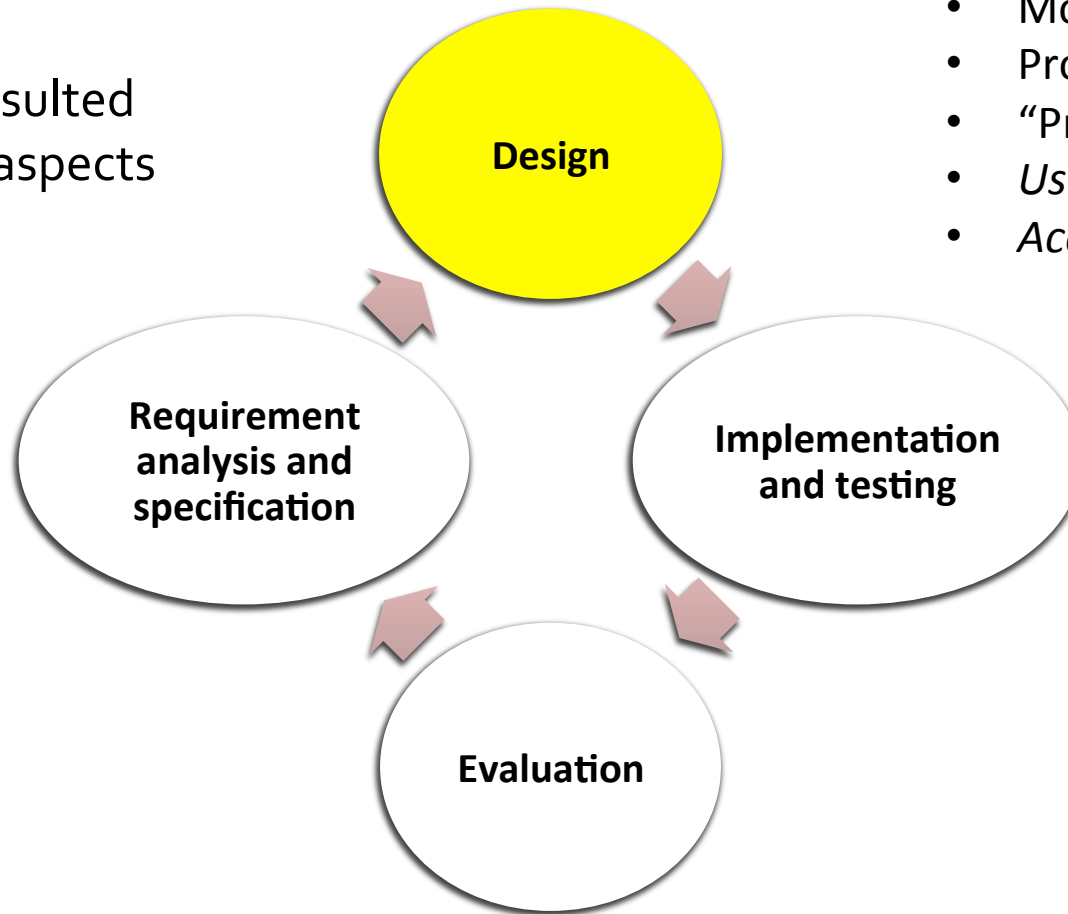
- Interviews
- Focus groups
- Observation
- Mock-ups



User participation

Design

Users are consulted
on all design aspects

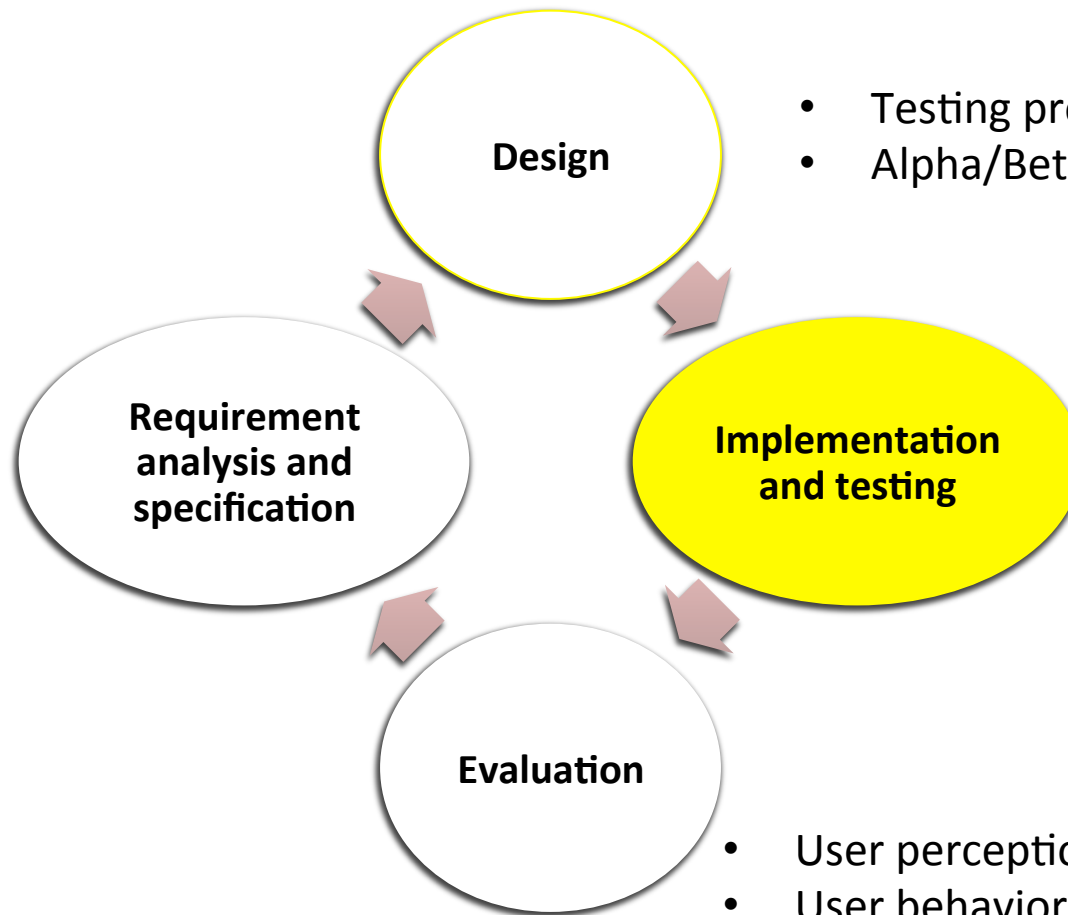


- Mock-ups
- Prototypes
- “Proof of concept”
- *Usability testing*
- *Accessibility testing*



User participation

Implementation and testing



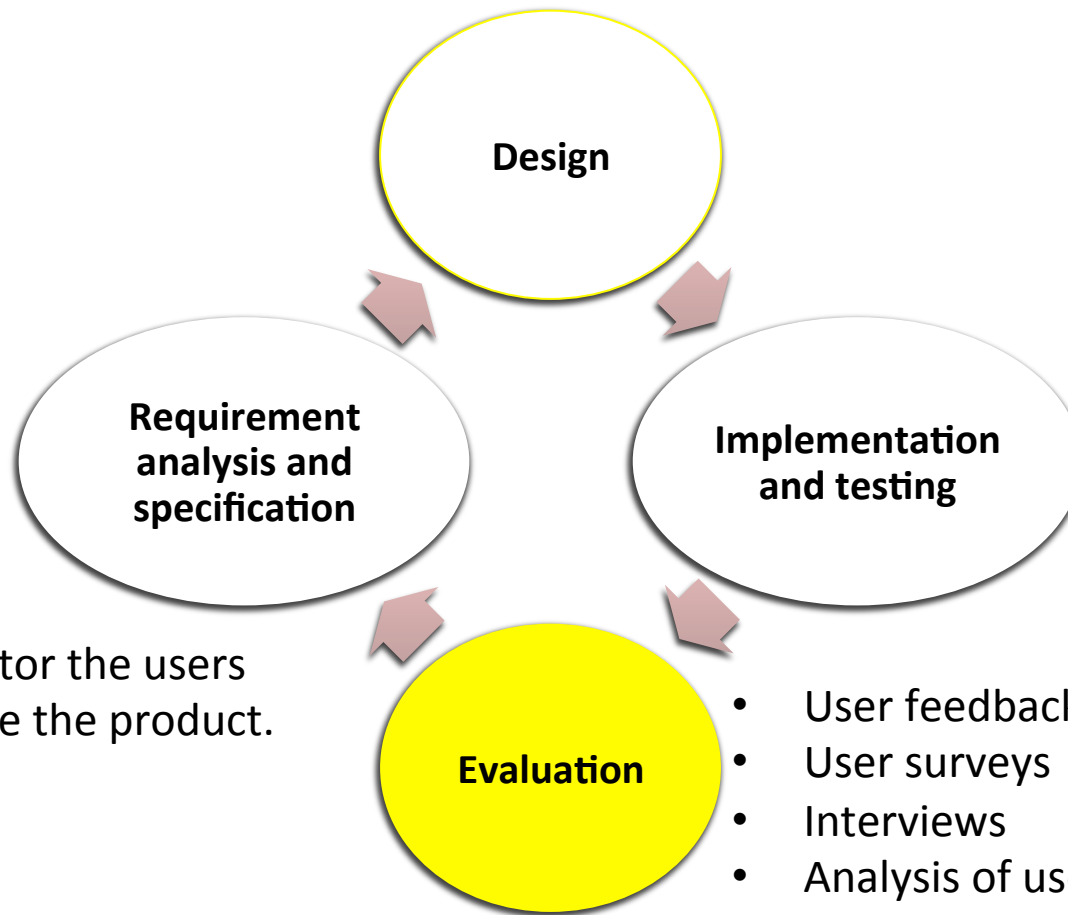
- Testing product with real users
- Alpha/Beta releases

- User perception
- User behavior



User participation

Evaluation



Frequently monitor the users and how they use the product.

- User feedback
- User surveys
- Interviews
- Analysis of use



eGovernment



Context: Responsibilities

- Most service production is done by municipalities
 - Care (nursing homes, home care)
 - Education (primary school, junior high)
 - Utilities (water, waste)
 - Local planning

- County
 - Secondary education
 - Regional planning
 - Infrastructure

- National government
 - Hospitals
 - Universities



Context: Internet use in Norway

- 82% of population uses Internet daily (Q2-2011)
 - Men: 86%, Women: 79%
 - Age group 65-74: 48%
 - Age group 25-34 98%
- The end of traditional digital divide?
 - Gender, age



Context: Internet use in Norway

- Full broadband coverage (>99%) in 2008
 - Government funded broadband program
 - (60 million Euro / 2006-2008)
- 2013: 88% of households have broadband connection



Use of e-Government

- Citizens that have been in contact with public sector through the last three months Q2-2011 (Q2-2010):
 - Seek information: 76% (67%)
 - Download forms: 57% (42%)
 - Submitted form electronically: 56% (37%)
 - Some kind of contact with public sector on Internet: 83% (74%)



Innovation in public sector

- I prefer to speak of innovation in public sector, instead of e-government
- Innovation may include ICT
- But the framing is better, you start with the real problem or challenge and try to find the best way to solve it. ICT may be part of the solution
- Too many failed projects started with the e- perspective.
Do not fall in that trap!



What is e-Government

- The use of ICT within government to provide better services to its citizens
- Improve government efficiency and quality
 - Externally
 - Internally



Early e-Government

- Provide electronic services for citizens 24 hours / 7 days a week
- Self-service
- Transactions through forms
 - Applying for Kindergarten
 - Tax return statements through Internet
- Technology, not organization



e-Government today

- Focus on backoffice integration
- Process engineering
- Multiple channel service delivery
- Portals and customization
- Organization, not technology



Plans and documents

- Online with the citizens, 2012
- National ICT strategy: eNorway 2009
- Government whitepaper on ICT-policies
- Municipal ICT strategy (The Digital Leap)
 - Norwegian Association of Local and Regional Authorities
- Report on government renewal effort (December 2007)



Major developments

- MinSide.no (MyPage.no)
 - One stop portal for citizens
 - Is now transferred to Altinn
- AltInn.no
 - One stop portal for businesses (and citizens)
- Regjeringen.no
 - Government information portal



Current standardization efforts:

- Reference catalog for open ICT-standards is established
- ICT standards for public administration partly developed
- eID is in place, but some controversies about ease of use.
- Accessibility (Universal design) legal requirement
- More rigorous requirements for public websites



Coordinating e-Government

- Agency for Public Management and eGovernment (DIFI) was established on January 1st 2008
- Coordination of e-government activities
- Annual assessment of public websites (stars)
 - Accessibility
 - Customization
 - Useful content
- Current discussion: Carrot or stick..
- Inspectorate function





ONLINE WITH THE CITIZENS

The Norwegian Government Digitalization Program (April 2012)



Online with the Citizens

- Important policy document (not many new ideas, but..)
- Part of a national digital agenda to be released later in 2012
- Government aims:
 - Online government, when possible
 - Net-based services as preferred channel of communication with citizens and companies
 - Better services through use of ICT
 - Transfer resources to areas where demand is high



Principles

- Digital communication as preferred channel
- All-encompassing and user friendly digital services
- Simple and secure login
- Mail delivered in secure digital post box
- Alerts through SMS and e-mail
- Help to find and use digital services
- Development of ICT should fit workflows and organization
- Focus on privacy and information security
- Coordination of common underlying services



Digital infrastructure

- Electronic ID
- Digital mail box
- Common registers (persons, properties, companies)

- Effective management and financing (**new**)
- Security and privacy

- Acts and regulations need adjustments



Efficiency and self service

- City of Copenhagen, Denmark
- Average costs of citizen contact:
 - Personal appearance: 10 Euro
 - Telephone: 5 Euro
 - Digital self-service: 40 Cent
- Note:
 - Investments is not calculated
 - User experience/satisfaction is not discussed



Challenges

1. The silos of public sector – freedom
2. The increasing amount of information
3. User demand



Constraints

- The digitalization program is for the national government
- Most of the service production is done at municipal level
- National government will provide common components and infrastructure
- No big promises of money – need to be measured against other important things.



Preferred channel of communication

- Normal, but not mandatory
- Examples of services:
 - Submission of applications
 - Electronic invoices
 - Schedule appointments
 - Access to decisions made by government
 - Reporting



One-stop service provision

- All-encompassing and user friendly digital services
- The idea of one-stop service provision was highlighted in earlier plans, but have been somewhat downplayed in the current program.
- Establishment of all-encompassing services will be done gradually.
- (Probably because of experience with MinSide)



Simple and secure login

- Electronic ID
- Used for login
- Different solutions
- Different levels



Mail delivered in secure digital post box

- Both for citizens and companies
- Mandatory for companies
- You have to log in with electronic ID to read the mail
- Can be used for secure communication



Alerts through SMS and e-mail

- To inform citizens when new content is put in the digital post box
- Can also be used for non-sensitive information, e.g. reminders



Help to find and use digital services

- Good services – less support
- Advisors (telephone and chat)
- Each organizational unit is responsible
- *(This is a change of policy, earlier plans discussed provision of 24 hour government ICT helpdesk)*



Processes and organization

- Development of ICT solutions should fit workflows and organization
- Potential for improvement, and also to find new ways of working and organizing public sector
- Process reengineering



Focus on privacy and information security

- Privacy
- Information security and uptime
- Important for citizen trust
- (Altinn episode: Tax statement for one person was visible to others)



Coordination of common services

- Important to achieve goals
- Infrastructure
- Common services



Preconditions

- eID is a precondition for simple and secure services
 - MinID (level 3) is already used by 2.7 million. Multiple vendors.
 - New ID-card with electronic ID. Half billion Euro over 10 years.
- Altinn is the common technical platform
 - 35 government institutions are using Altinn today.
- Digital secure mail box to all
- Common service for contact information
- Common government registries
 - Persons, properties, companies



Preconditions (cont.)

- Common components
 - Altinn, id-portal, registries are important elements
- Robust and secure infrastructure and systems
- Regulations should use electronic mail as main rule
- Acts and regulations should be revised to fit digital government
- Collected information should be reused by other government institutions



Selected areas for digitalization

- Work and welfare
 - NAV: Simple, user-friendly, 24x7 services
- Health and care
 - ePrescriptions, national medical core journal, helsenorge.no, care technology. White-paper to be released. Helsennett.
- Police and justice
 - Online police station (27 900 crime reports in 2010)
- Tax
 - Electronic tax return statement
- Student loans and grants
 - Fully digitalized



Some Case studies



Health information portal

- Aim: To bridge the gap between the specialists and medical personnel working in the first line.
- The specialist hospital for rehabilitation.
- Content
 - Directory of facilities and services
 - Video lectures
 - Discussion forum



Health information portal

- Project was completed, but the hospital became part of a merger.
- The new ICT unit would take over, and we received a lot of positive comments.
- Since then, nothing has happened.
- So the project was a failure, due to organizational and political environment.



Webcasting



Webcasting project

- Webcasts of local government meetings
- Rationale: Transparent government
- User requirements:
 - No extra personell!
 - Inexpensive
 - Cross indexing / integration

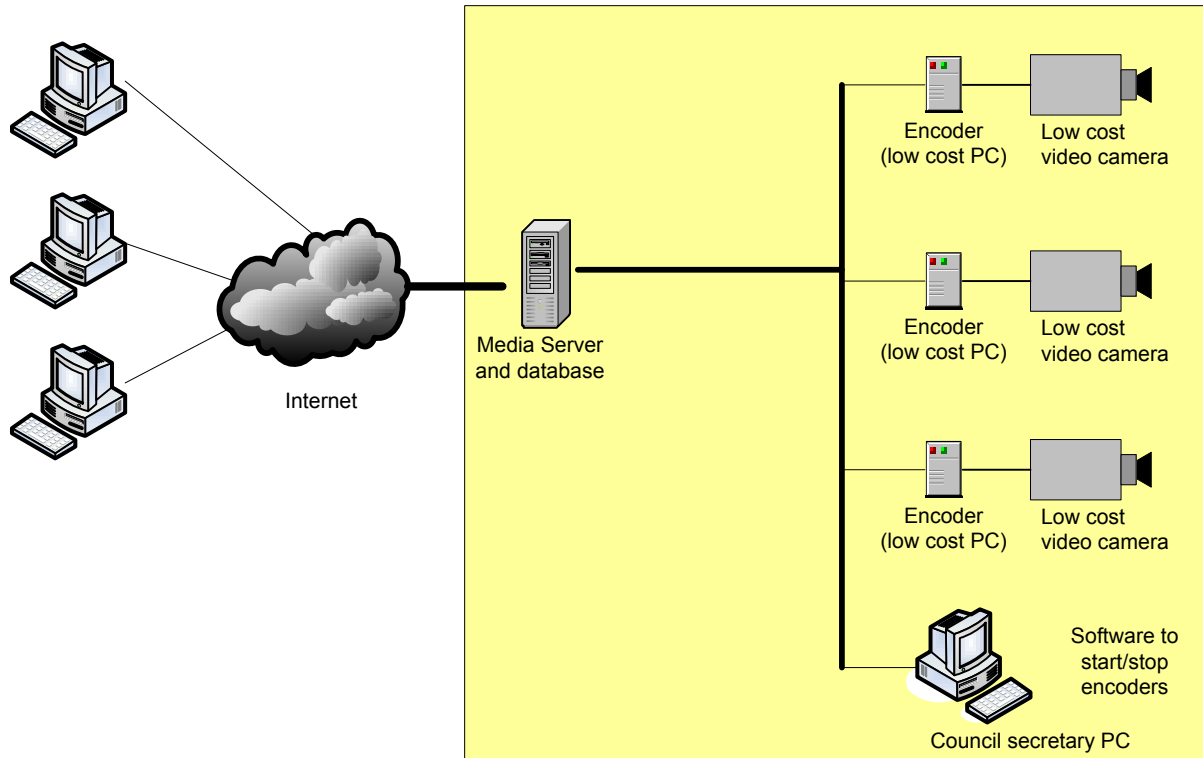


Webcasting of local council meetings

- The rationale for webcasting is to extend the possibility for citizens to follow the proceedings of local council meetings, and thereby increase the public awareness of the political decision making process.
- By providing archiving of meetings, it is possible for citizens to watch local council meetings independent of time and distance.



Technical solution



Technical solution

12k - Mediaavspiller - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites

Address http://12k.exss.no/multi_kamera.asp?kommune=8&kam1=Talerstol&kam2=Podiet&vis=Vis Go Norton AntiVirus

Ser Direktesending fra Talerstol



Playing: 448 K bits/second 02:45:16 / 02:51:14

Ser Direktesending fra Podiet



Playing: 448 K bits/second 02:45:15 / 02:51:14



Technical solution

12K - Streaming av kommunestyre møter - Levert av www.eXss.no - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://12k.ass.no/index2.asp?kde=147&uid=2758&arev=1&kommune=0

12-kommunesamarbeidet i Vestfold (12-k)


Møtearkiv | Direktesending | Søk

Kommune: Tønsberg

Bystyret

- 14.12.2005, 18:30
- 17.12.2005, 18:30
- Tolerstol
- Tønsberg Havnedistrikt
- Urtehaugen skole
- Tønsberg og Nøtterøy - samarbeid om skole
- Underskudd ved Middelalderfestivalen 2005
- Skjønkebøvilling for en enkelt anledning
- Næringsarealer i 9K
- Kommuneplanens arealdel 2004 - 2016
- Reguleringsplan for fortau langs Gårdbøveien
- Reguleringsplan for gang-/sykkelvei langs Nedre Bogenvei
- Reguleringsplan for kryssområdet Kilen øst
- VestfoldLAB AS - overdragelse av selskapet til de ansatte
- Forslag om endringer i kommuneloven - høring
- Jærslberg HV hus
- Interpellasjon fra Andreas Wahl
- Podiet

VestfoldLAB AS - overdragelse av selskapet til de ansatte.




Full skjerm

(Fullskjerm avsluttes ved å trykke på Esc knappen på tastaturet.)

Møteinformasjon

Utvalg: Bystyret
Møtedato: 07.12.2005
Møtetid: 18:30
Sted: Bystyresalen


System og utstyr levert av:



Saksinformasjon

Sakstittel: VestfoldLAB AS - overdragelse av selskapet til de ansatte.
Saksnr: 178
Tilhørende saksdokumenter: 178/05

Utviklet i samarbeid med:



Sustainable innovation

- www.aventia.no
- Project has shown sustainability. The company eXss (later Aventia) was started by two of my students and have now been in business for several years.
- 64 municipalities (including Oslo/Bergen)
- 4 counties





Common Portal Information Structure



Common Portal Information Structure

- Every municipality has its own portal
- Vestfold is densely populated area, five cities close to each other
- But citizens live in one, work in another, and use the cultural offerings of the third
- Project to establish a common information infrastructure



Common Portal Information Structure

- Collaboration brings better opportunities to use research methods in the design process
 - Click analysis
 - Search keywords
 - Exit interviews
 - Usability experts



Other effects

- A group of website managers / editors have regular meetings to discuss common problems
- Current focus is on making sites more visible in search engines
- Other areas of collaboration is:
 - Foreign language content (what and how)
 - Content improvement
 - Social media use (more on that later)



Recent work

- New, simpler home page
- Focus on search
 - Internal
 - External
- The vision of “How can I help you”..



Digital Planning Dialog



The Project

- Grant from Høykom (Norwegian Research Council)
- Partners:
 - 12K
 - Vestfold County Municipality
 - The County Governors' office,
 - Vestfold University College
 - Norwegian Mapping and Cadastre Authority
- Project organization



The Planning and Building Act

- Municipal planning is regulated by the Norwegian Planning and Building Act (Planning and Building Act 1985). The stated purpose of this act is to:
- *Facilitate coordination of national, county and municipal activity and provide a basis for decisions concerning the use and protection of resources and concerning development and to safeguard aesthetic considerations.*
- *By means of planning, and through special requirements concerning individual building projects, the Act shall promote a situation where the use of land and the buildings thereon will be of greatest possible benefit to the individual and to society.*



The Zoning Plan

- The zoning plan gives more details on the utilization of certain geographical areas. In particular, the zoning plan identifies different kinds of land-use:
- Building areas including areas for dwellings with associated facilities, shops, offices, industry, buildings for leisure purposes (leisure cabins with connected outhouses), as well as sites for public (State, county and municipal) buildings with a specified purpose, other buildings of specifically defined use to the general public, hostels and catering establishments, garages and petrol stations.
- Agricultural areas
- Public traffic areas including roads, railways, harbors, airports, parking areas.

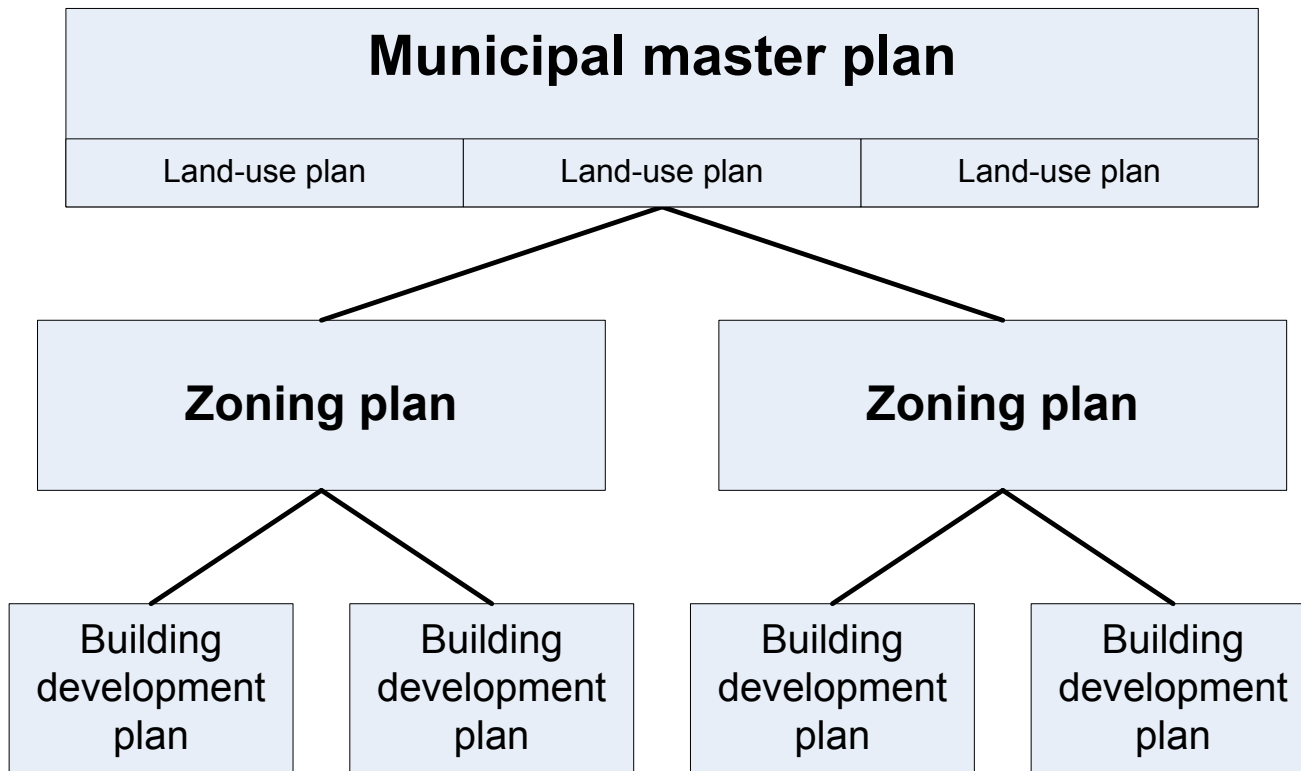


The Zoning Plan

- Public outdoor recreation areas, including parks and areas used for play and sport.
- Danger areas, including installations which may represent hazard to the public, e.g. high voltage installations.
- Special areas, including buildings and installations to be preserved based on historical value, green belts in industrial areas, nature conservation areas and many others.
- Common areas including parking areas, playgrounds and other areas common to several properties.
- Areas for renewal



The Plan Hierarchy



Stakeholders

- The Planning and Building Act identifies different stakeholders that have their right to submit comments on a zoning proposal. Examples of stakeholders are:
- The county government, with a responsibility for coordinating regional planning.
- The county governors' office has responsibilities regarding environmental issues, agricultural issues, and the preservation of historical valuables.
- The public road administration and the railway administration have responsibilities to take care of future public transport needs
- Property owners
- Existing users of properties
- Civic organizations
- General public

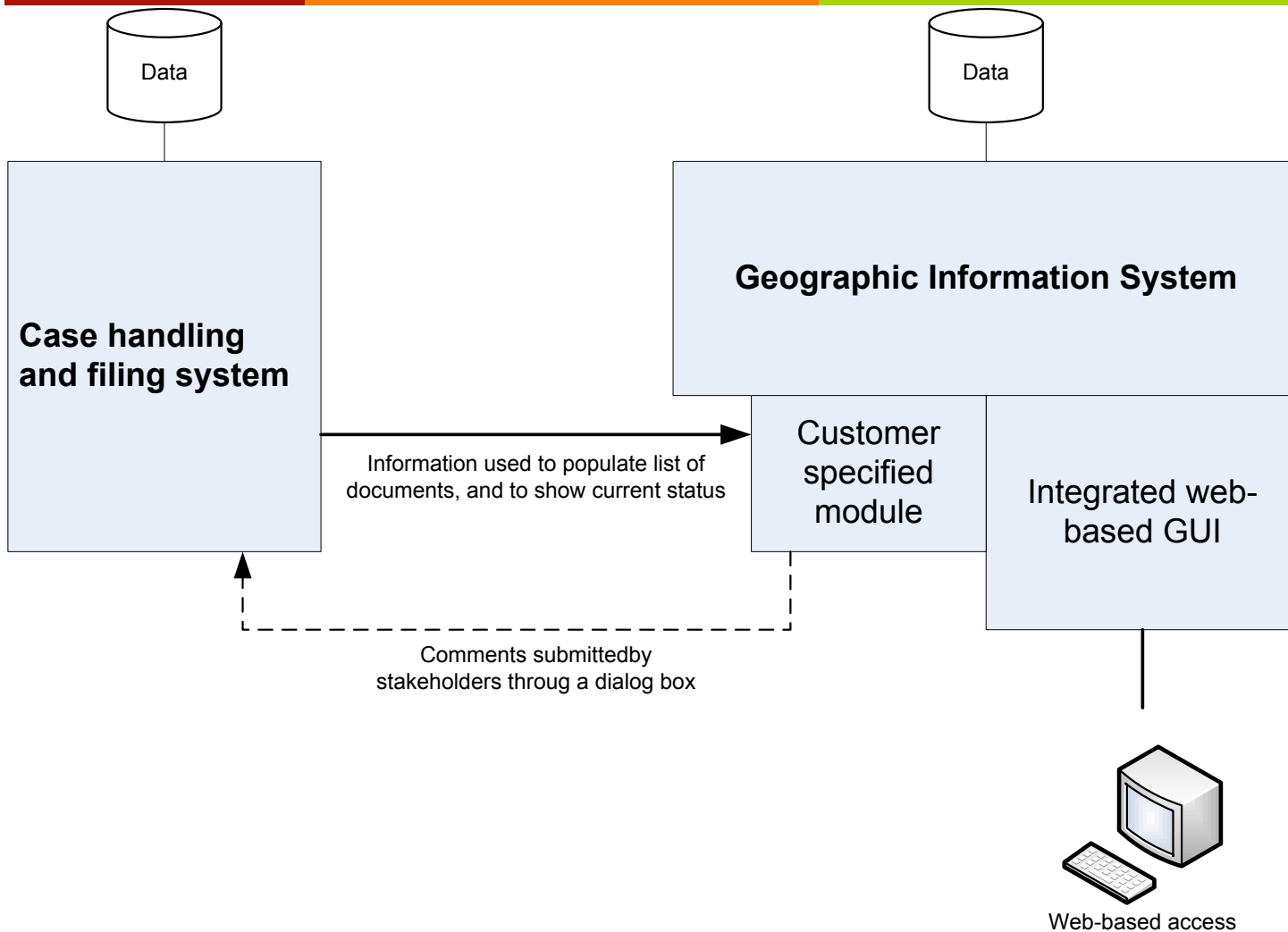


Project aims

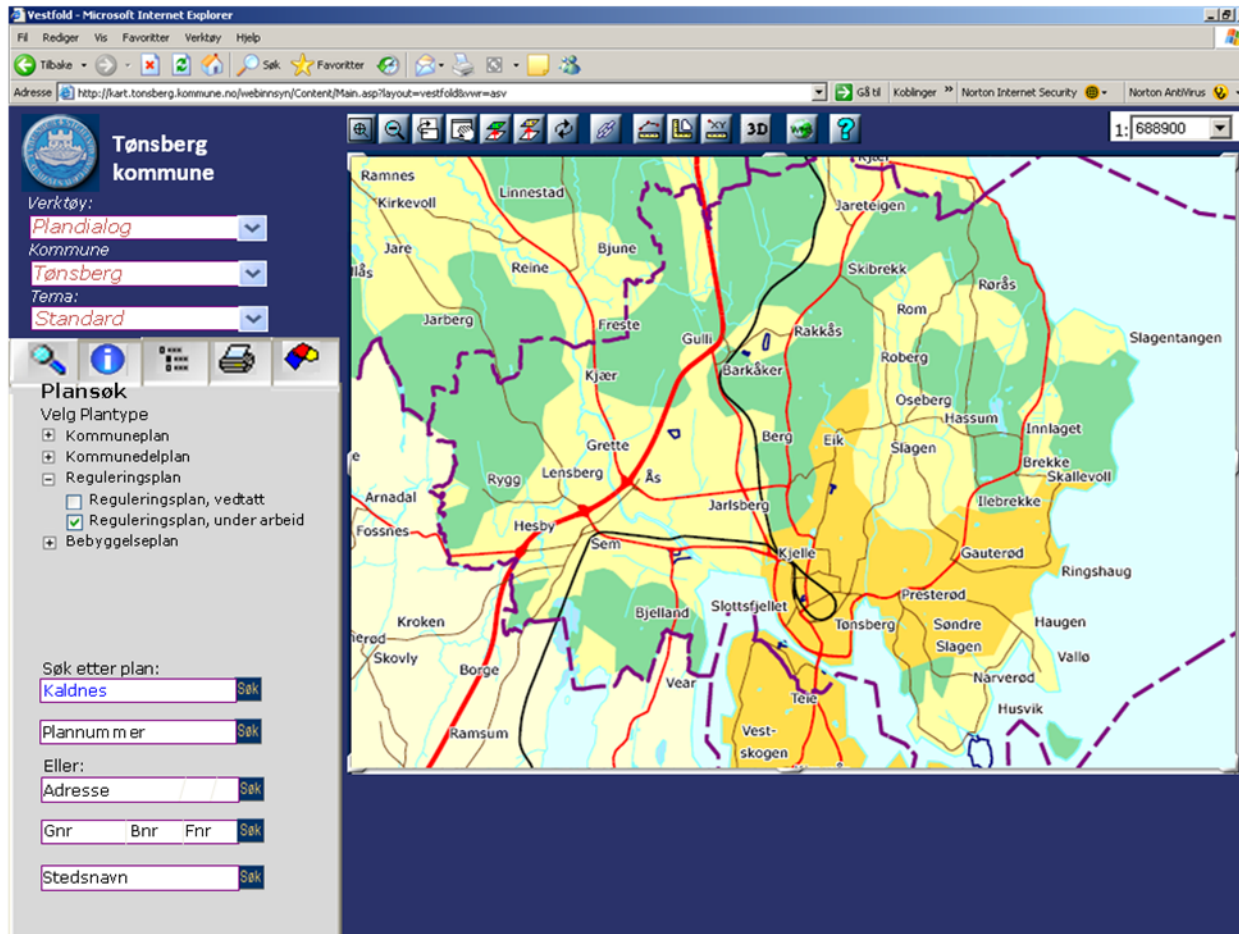
- The scope of the “Digital Planning Dialog” is to improve development of zoning plans by use of information and communication technology.
- The development of zoning plans is a complex process which includes high amounts of document interchange between stakeholders and the municipality.



Integration of systems



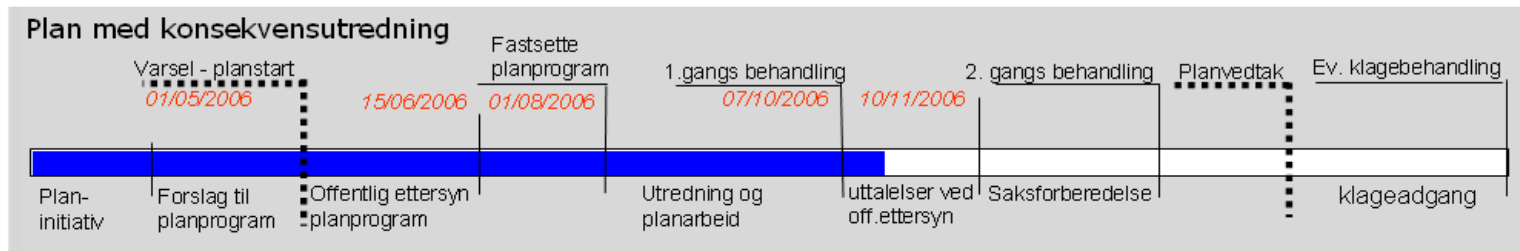
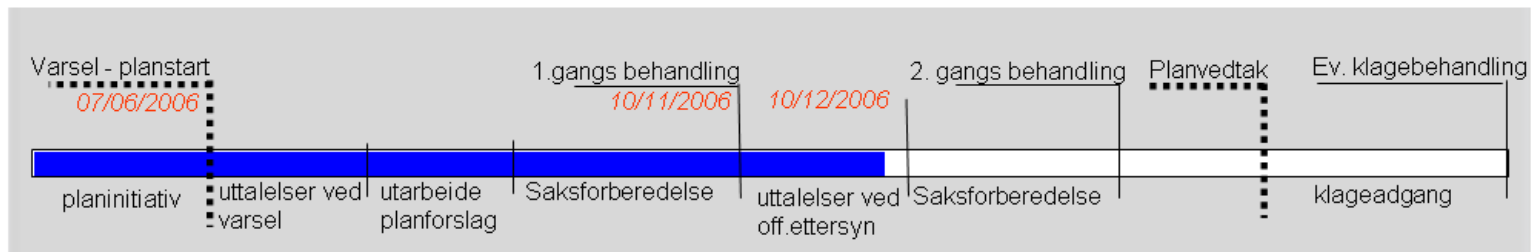
User interface



GIS is used to provide user interface



Timeline



User interface

Vestfold - Microsoft Internet Explorer

Adresse <http://kart.tonsberg.kommune.no/webbrowsersyn/Content/Main.asp?layout=vestfoldbivw.asp>

Tønsberg kommune

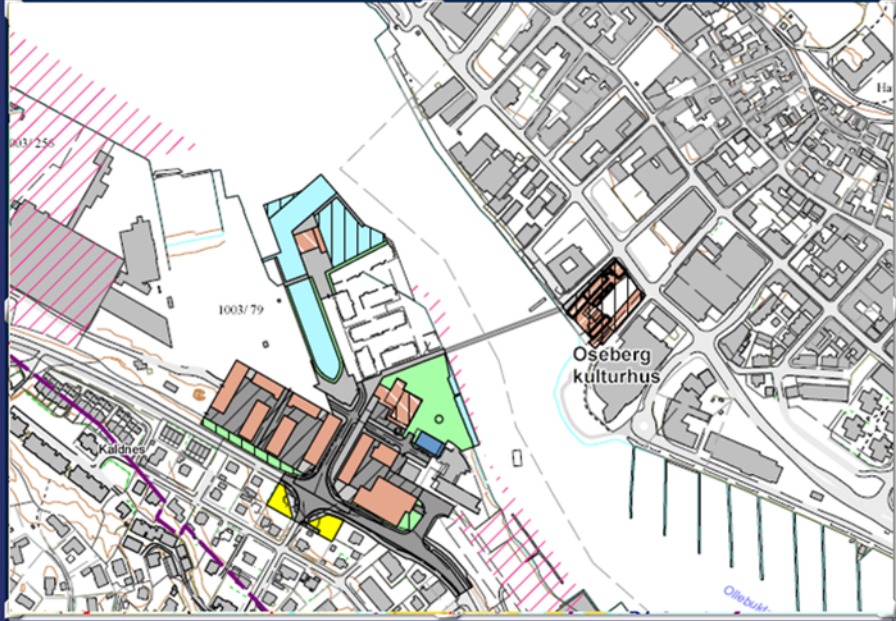
Verktøy:
Plandialog
Kommune: Tønsberg
Tema: Standard

Planinformasjon
Reguleringsplan
Kaldnes industriområde
Status i saksbehandling:
Offentlig ettersyn
Frist for uttalelser
10.12.2006
Gjennom skinnelig plan
0% 100%

[Reg. bestemmelser](#)
[Plankart \(PDF\)](#)
[Illustrasjoner](#)
[Saksframlegg](#)

Andre Saksdokumenter
Innkommne uttalelser
Nabo 1
Statens vegvesen
Fylkesmannen

Tidligere saksdokumenter



1: 4070

Varsel - planstart 07/06/2006

1. gangsbehandling 10/11/2006

2. gangsbehandling 10/12/2006

Planvedtak

Ev. klagebehandling

planinitiativ uttalelser ved varsel utarbeide planforslag Saksforberedelse uttalelser ved off. ettersyn Saksforberedelse klageadgang



Conclusion

- ICT-based application for municipal zone planning.
- The aim of the project is to make the planning process more transparent to all stakeholders, facilitate participation and improve administrative efficiency.
- Digital Planning Dialog is a practical example on integration of e-government application, and uses an innovative user interface including a timeline to show progress of zone plan development.
- The project also includes a democratic dimension



Conclusion

- ICT often plays an important role for public sector innovation.
- Some practical examples have been presented to show how ICT can help build efficient and transparent solutions.



Thank you for listening!

