


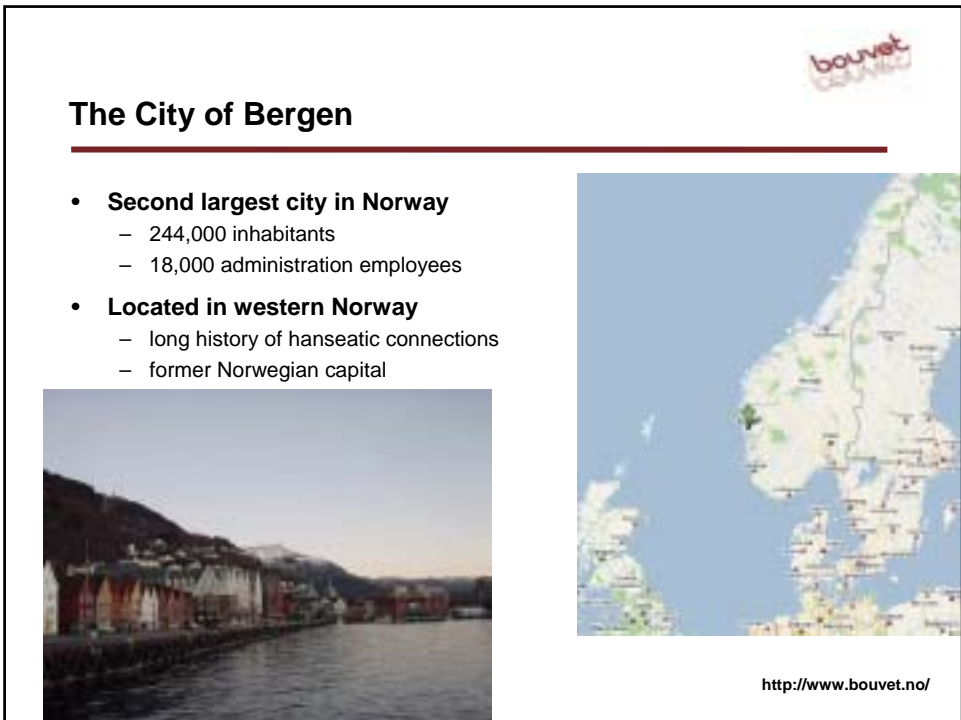
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## A Citizen's Portal for the city of Bergen

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TMRA 2007  
2007-10-11

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## The City of Bergen

- **Second largest city in Norway**
  - 244,000 inhabitants
  - 18,000 administration employees
- **Located in western Norway**
  - long history of hanseatic connections
  - former Norwegian capital

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## The project

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- **A new citizen's portal for the city administration**
  - strategic decision to make portal main interface for interaction with citizens
  - as many services as possible are to be moved online
- **Big project**
  - started in late 2004, to continue at least into 2008
  - ~5 million Euro spent by launch date
  - 1.7 million Euro budgeted for 2007
  - Topic Maps development is a fraction of this (less than 25%)
- **Many companies involved**
  - Bouvet/Ontopia
  - Avenir
  - KPMG
  - Karabin
  - Escenic



## Customer goals

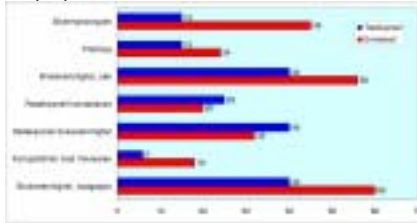
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- **Portal must**
  - be easy for citizens to navigate,
  - have effective search, and
  - have flexible components for building pages
- **Content to be organized by subject**
  - not by internal organizational structure
- **Data integration a key point**
  - need to collect data from many sources
  - avoid manual entry of data where possible
  - must be flexible

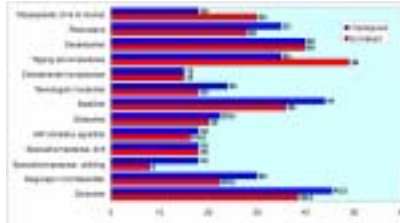


# Decision to use Topic Maps

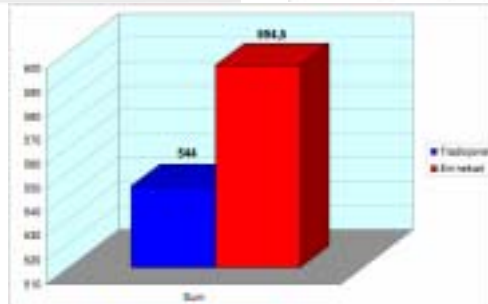
User perspective



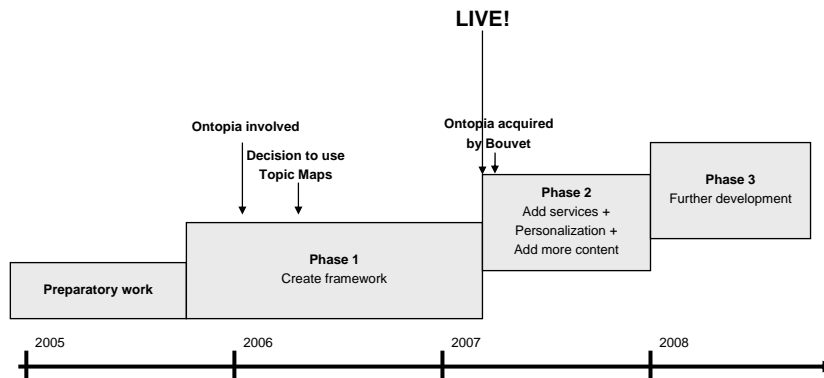
Technical considerations



## Summary



# Timeline



## Phase 1

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- **Create solution concept**
  - done by Ontopia and Bouvet, with assistance from customer
  - ontology,
  - data flow design,
  - administrative interface design
  - overall solution proposal
- **Update interaction design**
  - mainly Bouvet, with Ontopia, Avenir, and customer
- **Implement portal and data integration**
  - mainly Bouvet, with support from Ontopia, Avenir, and customer
- **Testing, content creation**
  - mainly Bergen, also Bouvet

## Phase 1, product development

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- **Escenic**
  - integration of OKS with Escenic CMS
- **DB2TM**
  - new OKS module for RDBMS-to-TM conversions
  - also does data synchronization
- **Ontopoly**
  - user interface improvements to meet user requirements

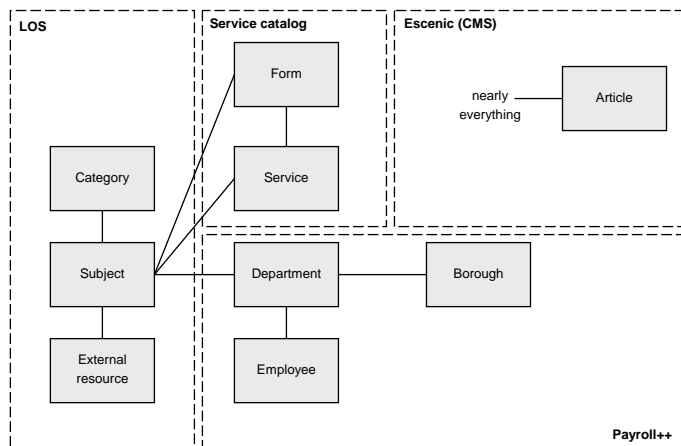
## Phase 2

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- **Add services**
  - going to add more services into the portal
  - team of consultants reviewing administrative processes for suitability
  - major task to implement in the organization afterwards
- **Personalization**
  - each citizen to get an account in the system
  - used for authentication with services
  - users get personal page to review status of applications etc
- **Add content**
  - move content of organizational units from old solutions to the portal
  - training of editors and authors
  - process made more difficult by subject-based organization of content

## Simplified original ontology

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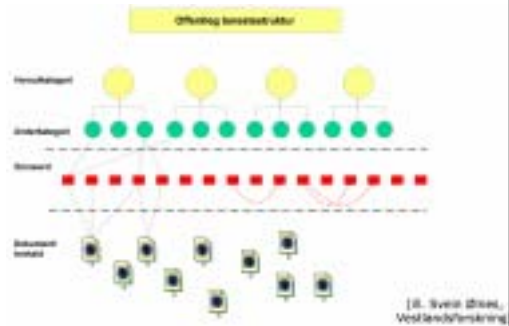
# LOS

- **Common categorization for municipal administrations**

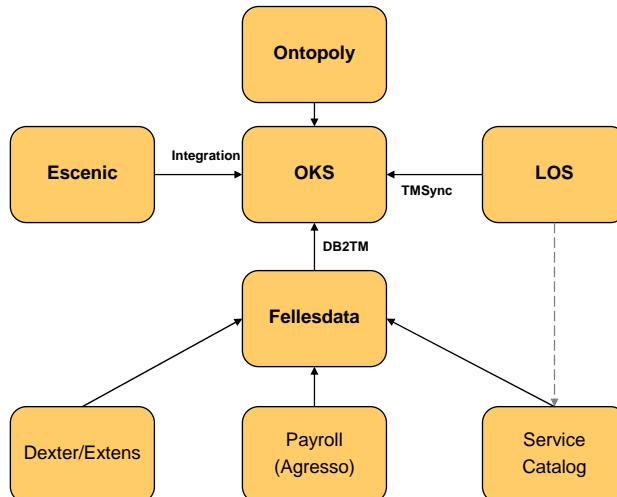
- long-running project with changing names (and owners)
- published as a PSI in XTM set by Norge.no (Norway.no)
- <http://www.norge.no/los/>

- **Contents**

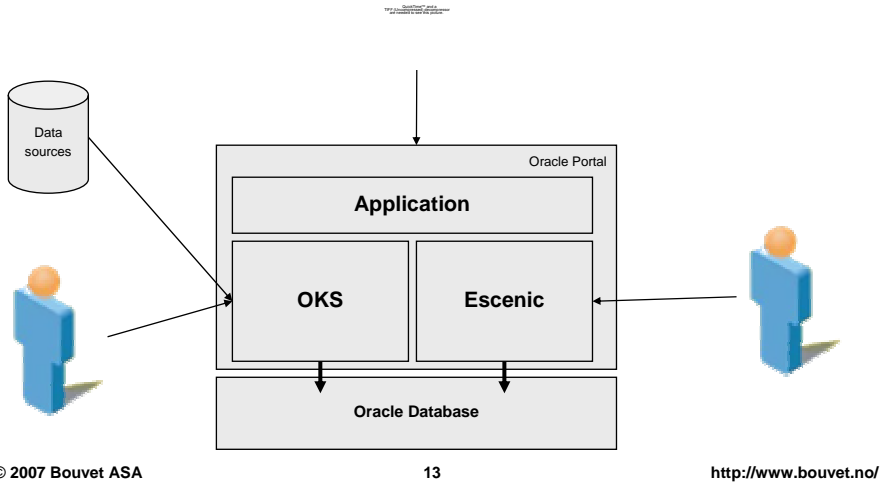
- a taxonomy of keywords
- a set of categorized resources
- a set of organizations
- a hierarchy of geographical locations



# Data flow



# Conceptual architecture



# The portal

The screenshot shows the homepage of the Bouvet ASA portal. The layout includes a header with the company logo and navigation links. Below the header is a search bar and a main content area with several sections:

- Stener A-B:** A calendar or list of dates.
- Arkiv:** A list of historical documents or records.
- Søk og finn:** A search bar with a search button.
- Om oss:** Information about the company, including 'Kontakt', 'Historie', and 'Verdier'.
- Arbeidstiltak:** Information about employment opportunities.
- Arrangementer:** Details about upcoming events, such as 'Arrangementer Lagvekstkonferansen i Bergen'.
- Medie:nytt:** News and updates from the company.
- Valgliste:** Information about elections and candidates.
- Nytt og spennende:** A section for interesting news and updates.

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## Search for “school”



- **Search results on the right**
  - with descriptions
- **Filters on the left**
  - by topic type
  - by taxonomy category (LOS)
  - by borough
- **Tunable search**
  - promote/demote by topic type
  - also by individual topic
  - this just implemented

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## Filtered by “Laksevåg” borough

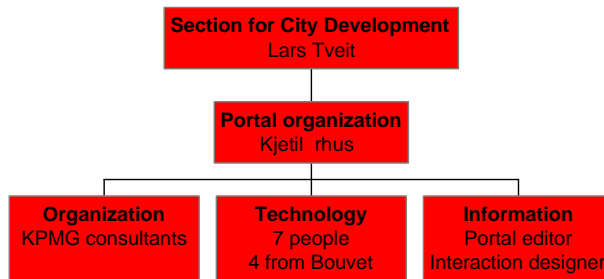


- **Search here filtered by borough**
- **Now shows**
  - schools in the borough
  - some units in the borough



## Portal organization

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In addition, ~45 editors and authors in the various units are responsible for content in various parts of the portal.

## The Escenic CMS

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- **Norwegian product**
  - has 95% of the media market in Norway
  - good international presence: The Times, de Telegraaf, The Independent, ...
- **Java-based**
  - both web interface and desktop interface
  - Bergen uses only the web interface
- **The integration**
  - articles and sections from the CMS represented as topics in the topic map
  - Ontopoly editor integrated into the web interface
  - authors/editors write articles in Escenic
  - then add associations into the topic map, also (seemingly) in Escenic
  - full-text search from the topic map also uses text in the CMS



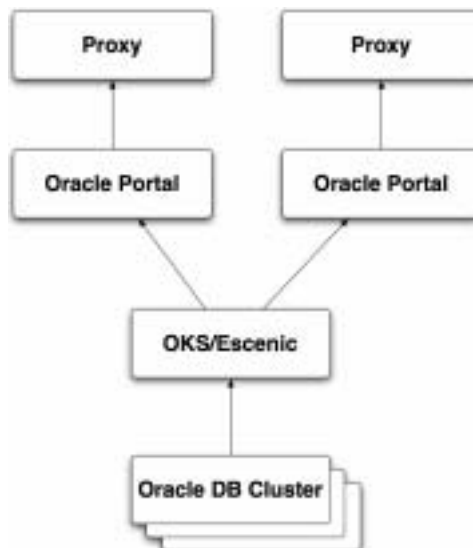
## Performance

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- **Traffic**
  - Requests February - May 2007: 21,691,054
  - Average requests/day: 189,000
  - Average requests/second: 2.2
- **Data size**
  - Topics 7182
  - Associations 16311
  - Occurrences 16859
  - Articles 1140
- **Time to service requests**
  - 0 seconds 55 %
  - 0.01 seconds - 0.1 seconds 28 %
  - 0.1 seconds - 1 seconds 12 %

## Technical architecture

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## Good parts

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- **Met the customer's goals**
  - easy to find information etc
  - flexible solution for portal design, data integration etc
  - data integration really works
- **Developers liked it**
  - more intuitive way of working with data
  - “fun to work with Topic Maps”
- **Editors like the system**
  - great deal of control over presentation
  - good “toolbox”
  - can tune search and other aspects

## Not so good parts

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- **Feeling of being “First people on the moon”**
  - steep learning curve
  - little information on the web
- **Immature technology**
  - some components developed for the project
  - tools don't support everything
- **Interaction design problems**
  - interaction design developed before TMs considered
  - not enough time set aside to rework interaction design
- **Missing content**
  - content in portal not the content users seek
  - big project to solve this

## Lessons learned

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- **Editors need finer distinctions than users do**
  - “everything about” vs “interest area” vs “theme” vs “subject”
  - important to the editors
  - incomprehensible to the users!
- **Maintaining the user’s perspective is very hard**
  - who knows what the users really want and need?
  - search logs are crucial
- **Training of editors/authors is key**
  - most people don’t understand categorization
- **Information design is more than interaction design and ontology**
  - it’s also a question of how content is broken up and presented