

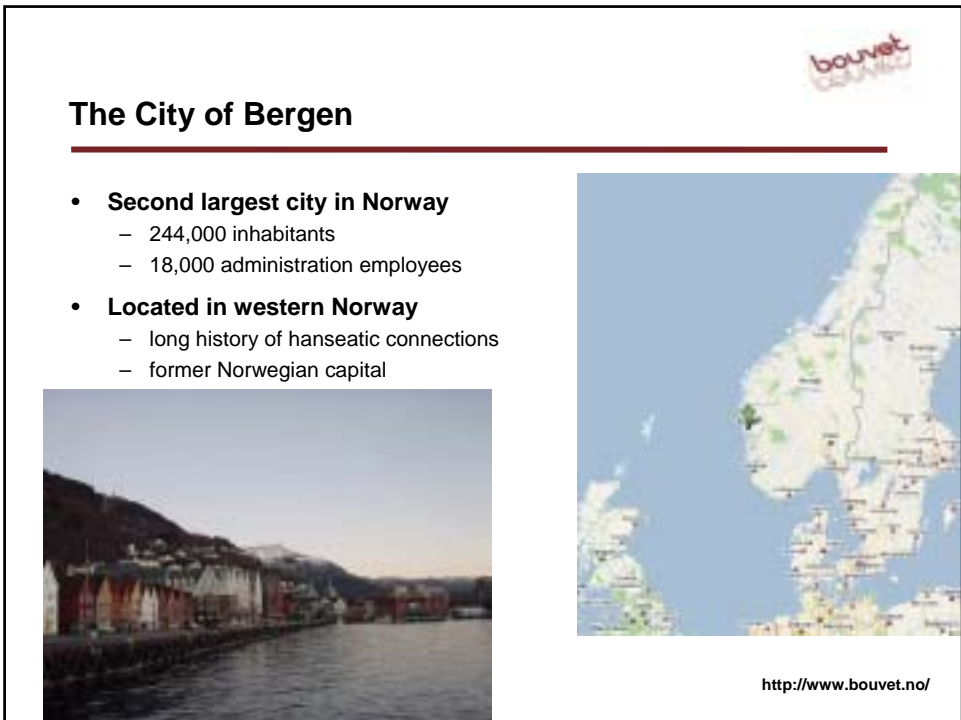
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A Citizen's Portal for the city of Bergen

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TMRA 2007
2007-10-11

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<http://www.bouvet.no/>



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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



<http://www.bouvet.no/>

The project

- **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



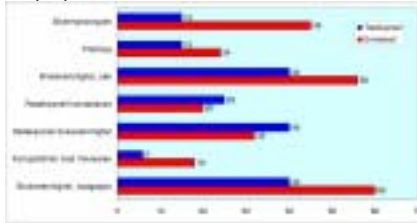
Customer goals

- **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

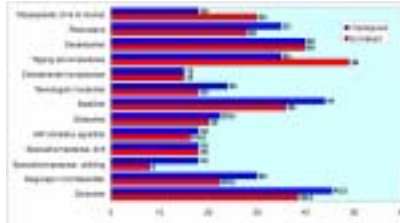


Decision to use Topic Maps

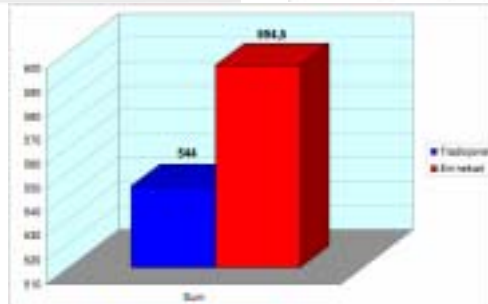
User perspective



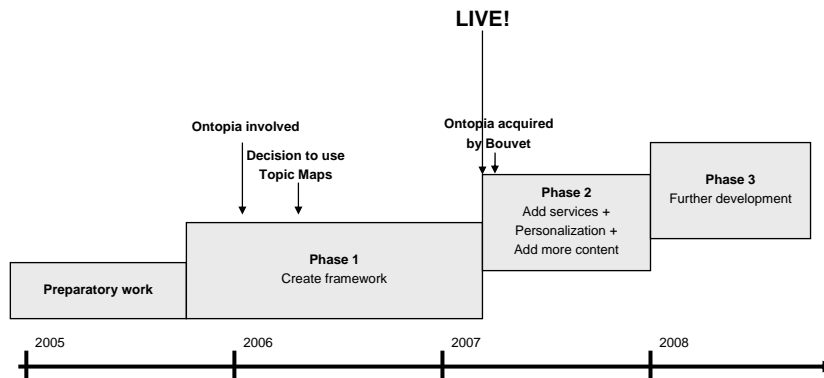
Technical considerations



Summary



Timeline



Phase 1

- **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

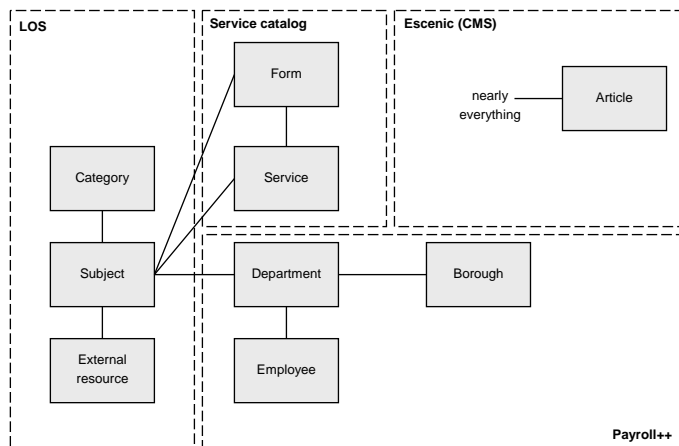
Phase 1, product development

- **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

- **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



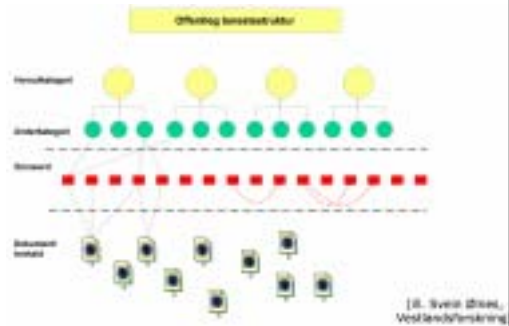
LOS

- **Common categorization for municipal administrations**

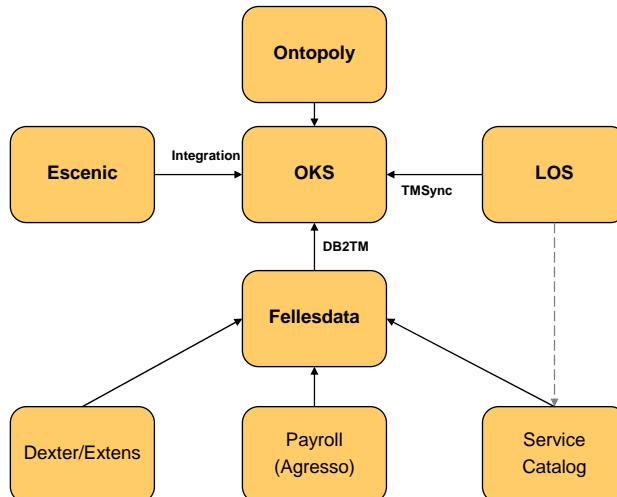
- long-running project with changing names (and owners)
- published as a PSI in XTM set by Norge.no (Norway.no)
- <http://www.norge.no/los/>

- **Contents**

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



Data flow



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

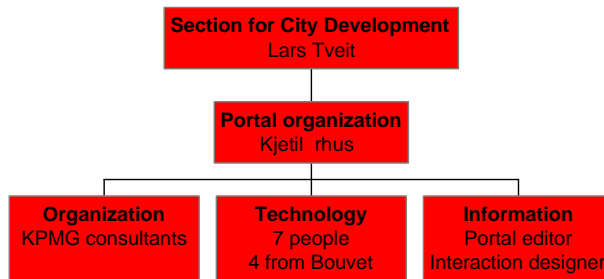
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Filtered by “Laksevåg” borough



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

Portal organization



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

The Escenic CMS

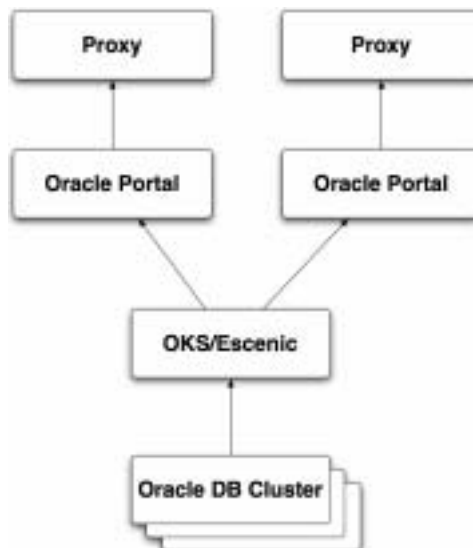
- **Norwegian product**
 - has 95% of the media market in Norway
 - good international presence: The Times, de Telegraaf, The Independent, ...
- **Java-based**
 - both web interface and desktop interface
 - Bergen uses only the web interface
- **The integration**
 - articles and sections from the CMS 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

- **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



Good parts

- **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

- **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

- **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