

Introduction Arbo Unie

Arbo Unie Activities

- Commercial Organization
- Employee health and safety support.

- Reintegration into the workforce
- Prevention
- Consultancy
 - Example : Regarding noise in the working environment, Arbo Unie provides medical assistance in case of hearing loss, prevention programs (measurements, research, best practices, more general advice on working conditions, etc.)

Market position

- 2.500 employees
- 25.000 customer organizations
- 2.6 million workers

- 26% market share

Workforce (knowledge intensive)

- 70% highly skilled

Professionals:

- 600 medical doctors
- 600 other prof. (fysio therapists, psychologists, tech.specialists)

Professional Support:

- 500 staff and management

Administrative Support:

- 700 administrative support

Market developments, company priorities

- **Emphasize operational excellence and cost reduction in traditional commodity-like primary process**
- **Focus on high added-value, knowledge intensive services**
- **Shorten time to market**

- **Add semantics to data**
- **Reuse existing IT infrastructure**

The Knowledge Management Project

The knowledge management project

- New approach on :
 - Document management
 - Intranet
 - Multiple databases
 - Connecting different knowledge portals for customers in a subject-centric way
- Two different Proof of Concept Projects

The need for a new architecture and approach

- The Department “Information Management” decides on generic methods and tools
- Reduce infrastructural complexity
- Strip functional redundancy
- Standardize (on open standards)
- Building block approach throughout the infrastructure
- Introduce Knowledge Management method and tooling
- Introduce federated search

Software/solution providers

- For the Proof of Concept regarding Knowledge Management:
 - Morpheus with Ontopia for Topic Maps
 - Iknow for smart indexing (bottom- up)
 - 2 Terabytes of documents
 - Intersystems with the Caché database for object-relational storage and retrieval and performance

Arbo Unie Knowledge

- In the organization a diversity of Expert Centers with persons, projects, customers etc. each concentrating on a particular domain
 - (e.g. Stress management, Pollution, Care, Chemical, Government, Sound)
 - Lot of overlap between subjects

Proof of Concept Expert Centres

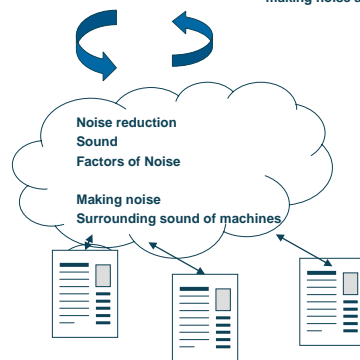
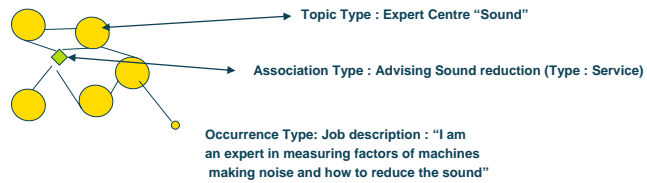
- 4 months to connect and integrate to prove the idea
- Used a diversity of mainly unstructured sources (scientific material, measurement data, earlier reports, external open sources)

- Generate metadata through IKnow semantic indexing
- Define:
 - metamodel/ontology and update process
 - indicators for knowledge objects identity to ensure reuse
 - Topic Maps based intranet solution in connection with CMS
 - data quality

- Implement: Ontopia Knowledge Suite (OKS), Caché, IKnow, CMS
 - Upconversion of datasources to topic maps
- Connect: Components to each other and datasources

The Topic Maps solution and IKnow

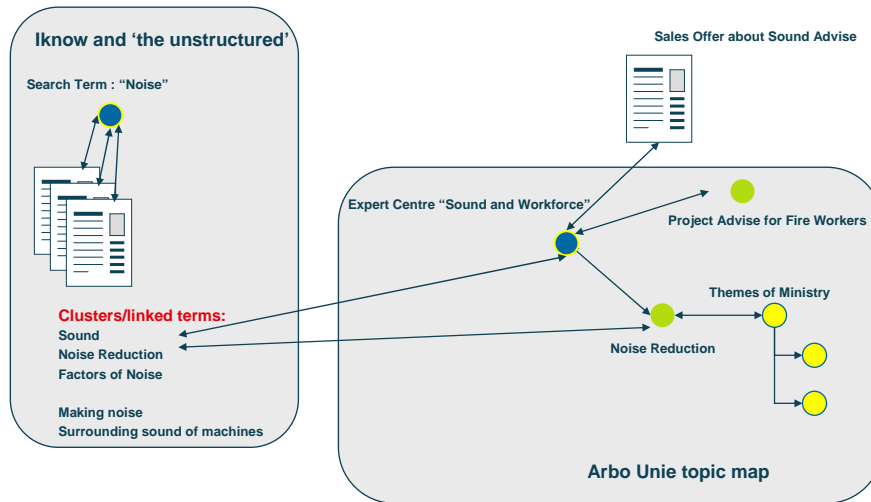
Top-down and bottom-up idea of “iknow topic maps”



Short demo

- Iknow on the National Library of Medicine's database. PubMed.

'Subjects' in unstructured dataset & in the topic map



Lessons learned from other projects

- In other projects Morpheus also needed a solution to generate keywords (bottom up). For instance at Dutch Police. We used the sample open content data from Wikipedia and Mindswap (see presentation Hopmans at TM2007) and scanned this with Iknow.
 - Next slides shows the Iknow output

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Know Output on Police Content Sample linked with the topic map

} Triples Clustered on the fly

Small piece of Iknow output with PSI's

```
<Concept>
  <Index>2001 attacks</Index>
  <Literal>2001 attacks.</Literal>
</Concept>
<CRCPatterns>
<CRC>1974 was accused of being member</CRC>
<Concept>
  <Index>member of al-qaida</Index>
  <Literal>member of al-qaida</Literal>
<ExactMatch>
  <OntoConcept>TopicsMap</OntoConcept>
  <OntoLink>http://psi.mssm.nl/terror/al-qaida</OntoLink>
</ExactMatch>
</Concept>
<CRC>al-qaida and of assisting of organizers</CRC>
<CRC>organizers of september 11</CRC>
</CRCPatterns>
```

If Match with subject
in topic map:

Use the indicator to link
to the structured world

Thus:
Go from 'any Subject' in a
Subcentric way to the
topic map

Improvement Information Management

- When editing in projects provide only the subjects that are centred around the relevant items

A bit of Ontology

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Proof of Concept Production Systems

- Define set of data sources, reports and transactions
- Focus on real time Management Information
- Define indicators for knowledge objects identity to ensure reuse
- Define metamodel / Topic Map for production system data
- Implement Enterprise Service Bus
- Connect Datasources to Service Bus

Declaratie Informatie Systeem
Medewerker view

Medewerker 2462 Classic

Info		Verlof		Projecten onder beheer	
Team	2100	Recht	194.0	Aantal	0
Discipline	BA	OCA	0	meer...	
FTE	90%	Opgenomen	165		
Makttarif	140	Saldo	29.0		
Intertarif	90	Ziekte	0		
Functioneringgesprek	nee	Refresh			

IUP		Volledigheid		Declaratie info	
Norm	1200	Norm	0		
FTE	90%	Realisatie	0		
Vrijstelling	-40	Verschil	0		
Profiel	1040				
Profielperiode	280				
Realisatie	156				
Verschil	104				
59.84 %					

per klant		per project	
156.58	ROC/SEB/MBC	1676.17	AUBUD zonder zie
meer...		meer...	

Uren geschreven

Next steps/conclusions

Choices after Proofs of Concept:

<u>Item:</u>	<u>Choice(s):</u>	<u>Candidate(s):</u>
Database	Object relational	Caché
Integration	SOA	Intersystems Ensemble or Progress Sonic / Apama
Content Management	Dynamic, Topic Maps controlled	XML-Native CMS
Semantics	Dynamic Metadata, Typology Deduction	i.Know
Knowledge Management	Topic Maps	Ontopia

Road ahead (Arbo Unie)

- Connect both PoC environments into one knowledge structure
- Define and implement hardware infrastructure
- Consolidate existing Internet, Extranet and Intranet environments into one
- Implement identity management policies
- Develop dedicated functionality, webservices and widgets to cater for business needs
- Company wide roll out during first three quarters of 2008