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Business Development

Manager – Transport & Rail

Fichtner Consulting & IT AG

Deutsche Bahn AG

GeoXtension applications at German Rail – A Case Study

Fichtner Consulting & IT

- Management Consultancy and IT solution center in the FICHTNER group
- FICHTNER group offers engineering and consulting services with over 1,000 employees in more than 200 projects worldwide
- Focus sectors are utilities (energy, water, waste), transport and government

Deutsche Bahn AG

- The leading mobile and logistic service provider in Germany
- Key figures in 2003
 - Revenue of approx. 28.2 billion €
 - 243,700 employees
 - 1,681 million passengers travelling a total of 69,534 million passenger kilometers
 - 282.3 million tons of goods
 - 5,665 railway stations



DB Netz AG

- Infrastructure Manager of German Rail
- Responsible for safe operation and maintenance of the railway network
- Key figures
 - Revenue of approx. 3.8 billion €
 - 44,080 employees (2004)
 - 36,000 km of railway lines
 - 37,000 train movements per day (307 operators)



System Environment

- Typical heterogeneous environment with “all the typical challenges”
 - Several strategic IT Systems:
DaVIT, DB-GIS, SAP R/3 Netz, SAP R/2, etc.
 - Numerous specialist and local systems for analysis, planning, simulation, management, documentation, etc.
 - Different object understanding, levels of detail, context, keys, status, criteria of order, etc.

Complex Models

- Example: A bridge
 - Several geometries with numerous sets of attributes,
 - described in different level of detail,
 - exists in different models,
 - is based on track segments and linked to surrounding elements,
 - contains different lifecycles and planning variations, etc.



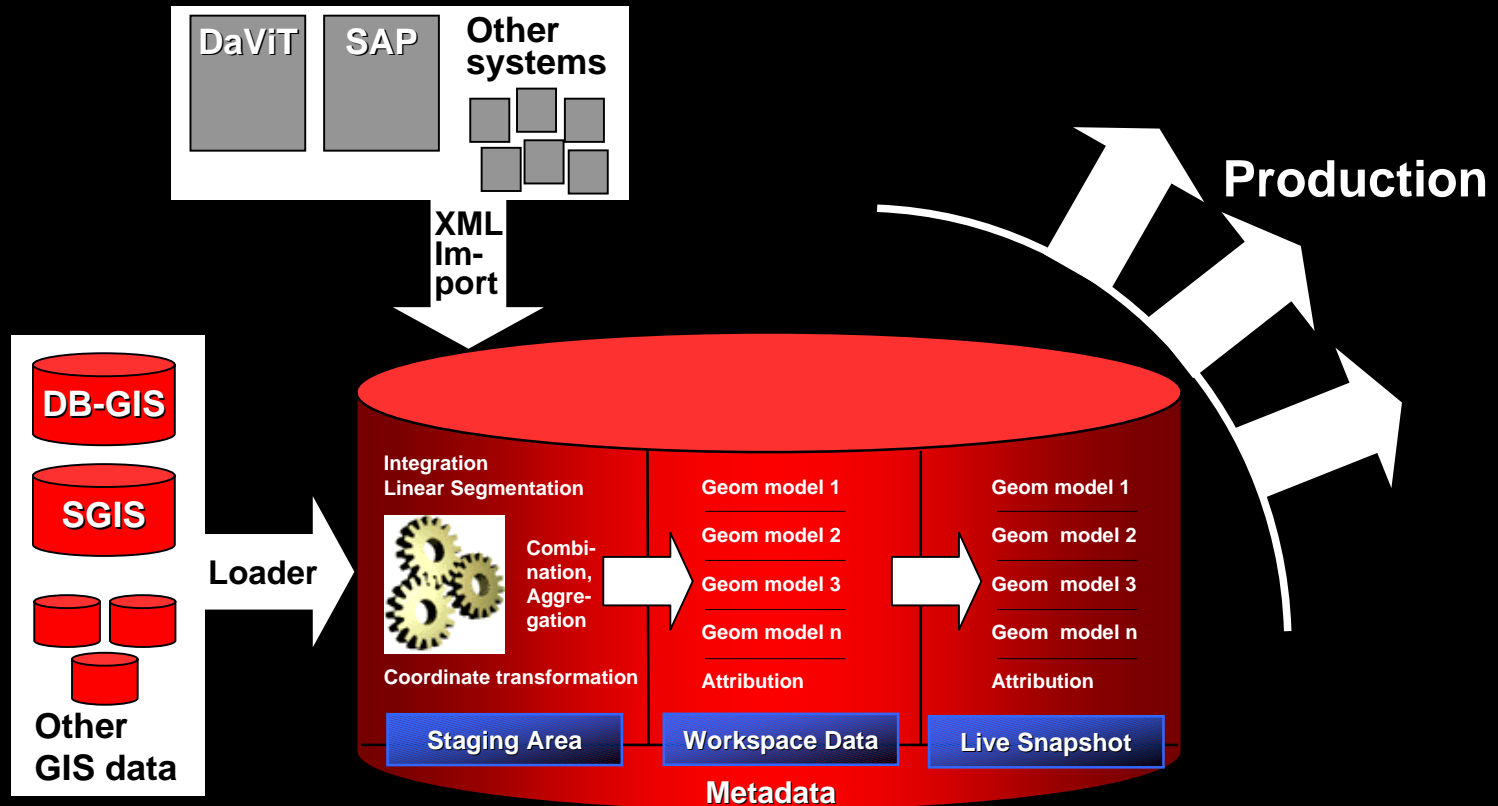
Problems With Geodata

- Geo data was managed in GIS systems only, requiring installation of client software
- Thematic mapping and analysis was done in GIS environment by specialists
- Most business processes were not taking advantage of integrated geodata
- Geodata usage was left to skilled personnel and not mainstream

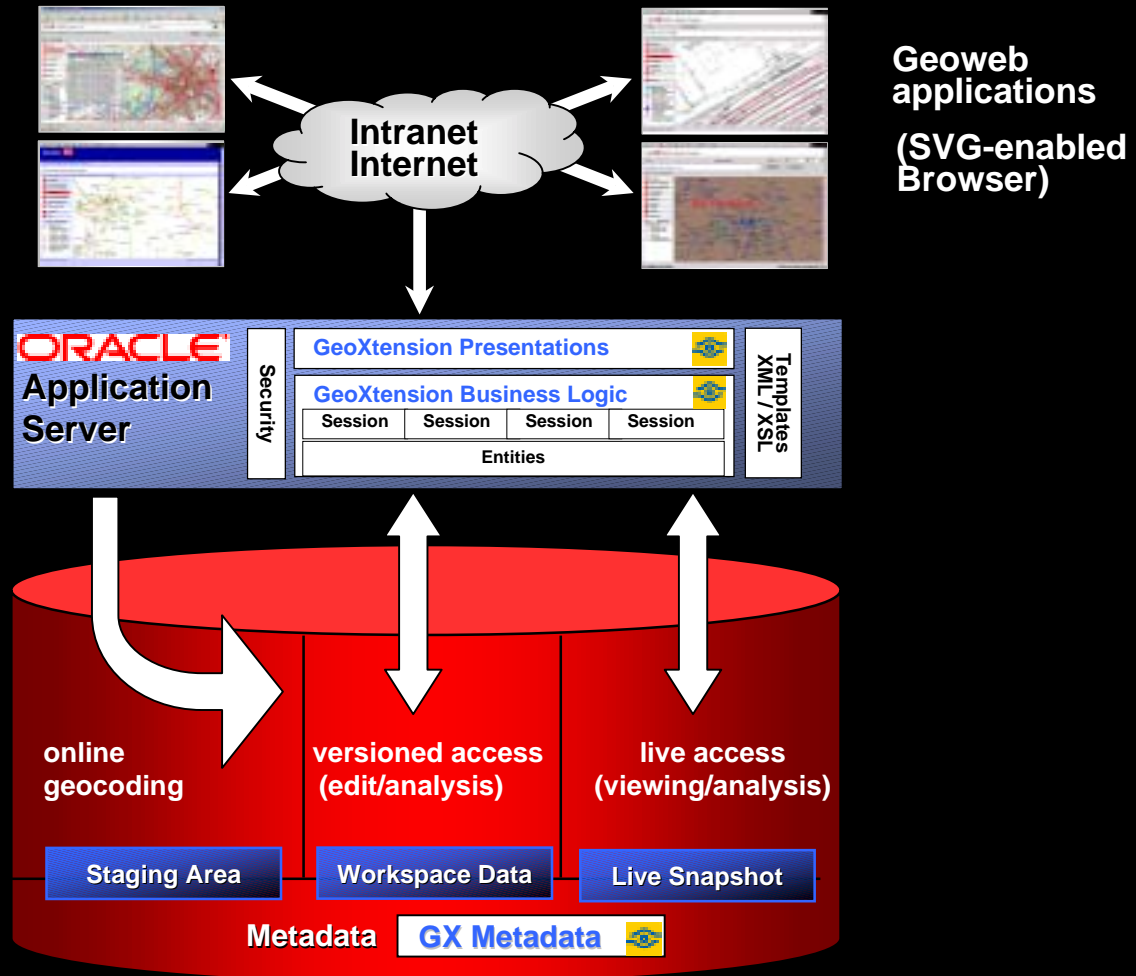
The Solution

- Use standard IT infrastructure taking full advantage of Oracle's spatial technologies and other modules to solve challenges
- Apply Oracle's Application Server (using a 3 tier J2EE architecture) to create a secure and scalable solution
- Use FCIT's GeoXtension to provide end users with tailored, interactive SVG applications requiring no client installations

Integration Environment



Production Environment





D E M O N S T R A T I O N

German Rail

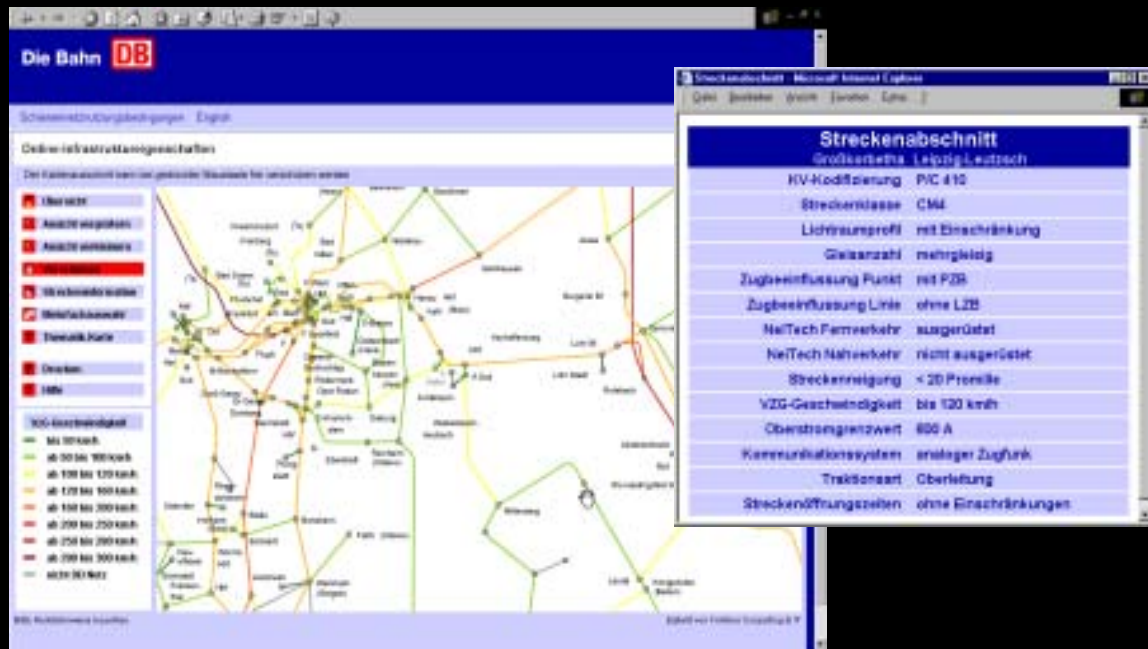
Other application samples

- Hotspot analysis of SAP elements and projects



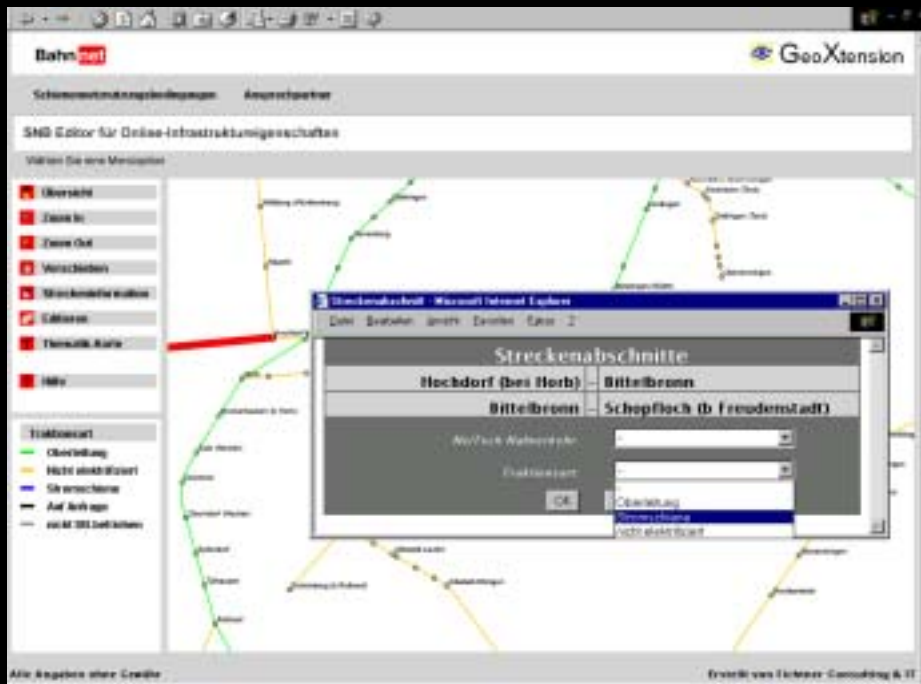
Other application samples

- Internet Publication of Network Statements







Other application samples

- Review and edit of infrastructure data



Summary: Problems solved !

Problem	Solution
Fast storage and retrieval of geodata	Oracle 10g Locator
Analysis and complex calculations	Oracle Spatial 10g
Long term transactions and variants	Oracle 10g Workspace Manager
Scalability of server environment	Oracle Application Server 9.0.4
Easy deployment of geoweb applications	GeoXtension 4.0 
Intuitive, tailored SVG web front end	GeoXtension 4.0 
Low administration cost	Oracle + GeoXtension 
Metadata management for complex models	HTML DB 1.5 + GeoXtension 

Summary: Productivity up

- Business work-flows at German Rail are enhanced in quality and speed
- Benefits arise in different departments of German Rail and outside via internet
- User acceptance is great
- German Rail is able to deploy tailored geoweb applications extremely fast
- Number of application is growing steadily (8 new application in 2004)

Next steps

Problem	Solution
Storage and retrieval of raster data	Oracle Spatial 10g Georaster
SVG-based map generation including labels, business graphics and georaster	Oracle Application Server 10g MapViewer

**“Oracle Database 10g and GeoXtension
have evolved into our strategic platform
for geoenabled business process support
and allowed us to
maximize efficiency and quality
in our workflows”**

**Detlev Glowinski
Manager N.VII 4: Infrastructure Systems,
DB Netz AG**

More information

Fichtner Consulting & IT AG

www.fcit.fichtner.de

GeoXtension

www.geoxtension.com

German Rail

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