The XML Company
Overview

- Short introduction to the company
- Short history of database and DBMS
- What is the next DBMS’s generation?
- Introduction to Tamino
Enterprise Transaction Suite

ADABAS
High-Performance Database Management System
Enterprise OLTP applications

NATURAL
High-Productivity Application Development System
Cross-platform deployment
The **Power Suite** for the Internet

The Power Database for the Internet

100 % pure XML

The Power Tool for the Internet

Java, XML and more ...

The Power Link to the Internet

Software integration across the enterprise
Global Presence

- 24 subsidiaries in 60+ countries
- 70+ offices
- 2,600+ employees
- Over 5,000 Corporate Users

**Directly served territories**

**Europe**
- Germany
- Denmark
- UK
- Benelux
- France
- Italy
- Spain
- Portugal
- Austria

**Asia**
- Singapore
- Hong Kong
- Malaysia
- Philippines
- Taiwan
- Thailand
- China
- Japan

**Middle East**
- GCC
- Jordan
- Egypt
- South Africa

**North America**
- USA
- Canada
- Mexico

**Australia**
- Australia

**Major Distributors**

- **SAGA Software**: Americas, Israel, Japan
- **SPL**: South Africa
- **Penta**: Korea
Database according to its Storage

- Hierarchical Database
  - ADABAS

- Relational Database
  - Oracle
  - DB2
  - MS SQL Server

- Object Oriented Database
  - ?

- Object Oriented Relational Database
  - Informix

- What else?
Theory of Relational Model

- Relational Algebra
- Entity-Relationship Concept
- Normalization
- Referential Integrity
- SQL (Structured Query Language)
Components and Features of a Relational DBMS

- Data Store Kernel
- SQL-Engine
- API
- Client - Server Architecture
- ODBC, JDBC Drivers
- Security
- Transaction and Isolation
- Multi User and Multi Session
**DDL (Data Definition Language)**

Create Statements
create user, create schema, create table, create view, create index, ...

Drop Statements
drop user, drop schema, drop table, drop view, drop index, ...

Alter Statements
alter user, alter table, ...

Constraints
not null, primary key, foreign key, check constraint, ...
DML (Data Manipulation Language)  SQL(3)

- Insert Statement
- Select Statement
- Update Statement
- Delete Statement
The status and limitation of current DBMS

- The Relational Database has reached its Peak
- No more new Vendors of large DBMS
- The current DBMS can only treat simple Data
- The Market needs new DBMS for complex data
- The Market needs Platform crossed and Web oriented DBMS
Graphics
Text
Compound docs.
Design data
Spatial data
Temporal data
Video
Images
Audio
Seismic data
Existing DBMSs
What is the next DBMS’s generation?

- **Gartner Group:**
  “Vendors that significantly resign their DBMS engine will be in the best position to support the next paradigm shift for complex and unstructured data type that applications of the 21st century will require.”

- **Michael Stonebraker:**
  “Object-relational DBMSs

  The next great Wave”
Stonebraker’s Estimation

<table>
<thead>
<tr>
<th>Query</th>
<th>Simple Data</th>
<th>Complex Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relational DBMS</td>
<td>100</td>
<td>Object-Relational DBMS</td>
</tr>
<tr>
<td>File System</td>
<td></td>
<td>Object-Oriented DBMS</td>
</tr>
</tbody>
</table>

Relative Size of DBMS Markets in Year 2005
The Query Language of a Object-Relational DBMS

- **OQL:** Based on OO Programming Languages like C++
- **SQL3 (Standard about 1500 pages):**
  - user defined type (for complex data type)
  - user defined functions
  - “Super Table” (Inherence)
Introducing the Information Server for Electronic Business
Product Overview
Tamino ...

- ... is the Information Server for Electronic Business
- ... is the world’s fastest XML Server
- ... turns any data source into Internet objects
Tamino ...

- is the Information Server for Electronic Business
  - is the *first native* XML DBMS
  - can store and manage any data
  - attaches directly to the Internet without programming

- turns any data source into Internet objects
  - can access and integrate any existing data source
  - supports XQL as well as SQL for relational data
  - supports NT, Unix and Mainframe systems
Tamino Technology Components

- Tamino SDK
- X-Port Technology
- X-Machine Technology
- X-Node Technology
- Tamino Manager

- Allows access to Tamino from XQL, SQL or OO applications
- Attaches Tamino to the internet without programming
- Provides native XML storage
- Provides Data Mapping and heterogeneous data access
- Provides Internet based administration
Tamino - XML goes native!

SQL Engines need XML mapping

Tamino Information Server vs. Bandwidth!

Band-Aid!
Information Server Application Types

- **Data Staging**
  - Caching WEB information for high performance

- **Data Integration**
  - Retrieval of heterogeneous data

- **Data Exchange**
  - Conversion and mapping of XML data
Architecture of Tamino

SQL Precompiler
SQL Application

inolnk

ODBC

X-Node

XPath

SQL Parser

SQL-engine

XPath

X-Mashine

XML Catalog

Kernel

SQL Catalog

Data Store

External Database

Web Browser
XML Application

http request

Web Server

SXS