BASIC ERP ARCHITECTURE

Skorkovský, KPH, ESF MU, Brno
Simplified schema of ERP usage

- ERP
- Partners
- DB
- ERP
- Enterprise
- Information
- Knowledge of methods applied for process management
- Decision
- Key decisions
- Key knowledge
- Information (trends)

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Methods

• Theory of constraint
• Critical chain
• DBR
• Ishikawa Fishbone Diagram
• Boston matrix and PLC
• Magic Matrix (Gartner)
• Use of ERP analytic tools
• Pareto
• SWOT (basic and advanced)
• MRP, MRP-II, CONWIP,
• Advanced Planning and scheduling
• ....
What could be controlled...
ERP

The main objective of Enterprise Resource Planning, or ERP, is to integrate all departments and functions across a company into a single system by using a common database, the value of which is to be able to have only one correct set of data.
Isolated Data Islands

- Accounting Island
- Production Island
- Quality Management Island
- Island of Deliveries
- Marketing & Sales Islands
- Sales Representatives
- Customer Orders
- Production Planning
- Inventory and Production
One Solution        One Database       All Microsoft

Management

Marketing

Inventory and Production

Customer support

Internal Sales

Accounting

Sales Representatives

Customers

Production Planning

Quality management

One Company Database

Steel Service Center Vertical
For example, records about inventory levels may be found in one database, while customer information may be found in its own separate database. Furthermore, these databases may be "island systems" (operating independently from each other and having no integration with other databases).
Architecture 2-tier (2-vrstvy)
Architecture 3-tier (3-vrstvy)

The second tier is the multithreaded middle tier. This is the service tier that is based on **Web services**.
From hell to paradise – ERP (see meaning)

You can change a business in order to copy rigid functions of the software ERP.

Parameter setup

Integrated ERP

You can change a software in order to support your business.
Technological pyramid
Integrated homogeneous solution
Unique architecture

Integrated Development Environment

GUI (Windows)

Zaměstnanci

Commerce Portal

Application Server

Zákazníci & obchodní partneři

Commerce Gateway (B2B)

Externí aplikace

Worldwide Generic Objects

Country-specific Objects

Customer-specific Objects

Vertical Solutions Objects

Database

Microsoft Navision Database Server

Microsoft SQL Server 2000

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Relations among tables I
Relations among tables II
One table and its relations I
One table (Sales Line) and its relations II

ERP NAV

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Microsoft Dynamics NAV Sweet Points

• Windows compatible (menu, command, mutual relations to MS Office,..)
• Security (ID, passwords, roles, protocols)
• Menu and basic modules
• Shorthand keys and HELP
• Multilanguage
• Navigate and calculation (flow) fields, finding the reason why any document was created
• Reports
• Entries, dimensions
Calculation: field and entries (transactions related to cards-tables)

- Invoice
- Credit Note
- Payment

Example: Field Amount =

Example: E.G. One million of entries

ERP
Main form (menu, toolbar, forms)
Main forms (card, list, form->sub-form)

<table>
<thead>
<tr>
<th>General</th>
<th>Communication</th>
<th>Invoicing</th>
<th>Payments</th>
<th>Shipping</th>
<th>Foreign Trade</th>
</tr>
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<tbody>
<tr>
<td>No.</td>
<td>01121212</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Spotsmeyer’s Furnishings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>512 South Sunset Drive</td>
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<td></td>
<td></td>
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<tr>
<td>Address 2</td>
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<td>Post Code/City</td>
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</tr>
<tr>
<td>Country/Region Code</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Phone No.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Contact No.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact</td>
<td>Mr. Mike Nash</td>
<td></td>
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</tbody>
</table>

Search Name: SPOTSMEYER’S FURNISHERS
Balance (LCY): 0,00
Credit Limit (LCY): 0,00
Salesperson Code: JIM
Responsibility Center:  
Service Zone Code: X
Blocked:  
Last Date Modified: 09.06.08
Main forms (card, **list**, form->sub-form)
Main forms (card, list, form->sub-form)

Partner

What
Table->Form principle

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
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</tr>
<tr>
<td>Code</td>
<td>50</td>
</tr>
<tr>
<td>Text</td>
<td>50</td>
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<tr>
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<td>Code</td>
<td>10</td>
</tr>
<tr>
<td>Code</td>
<td>10</td>
</tr>
</tbody>
</table>

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Table x->Table y relations

X = Customer
Y = Post Code
Business Case Principles

Sales Order
Header

Item Chair 4 pcs 30 EURO

Item Table 1 pcs 100 EURO

Item Table

Item Table

Availability, Costs,…

Balance, Payments,…

Customer table

Entries in General Ledger

Sales Entry in database
(Type Invoice)

Item Ledger Entries in database
(Types Sales)

F11 = posting, booking to G/L,…

F11
Thanks for your attention