

# Evolution

- **Petra Schubert and Uwe Leimstoll, Extending ERP Systems in SMEs into Personalized E-Commerce Applications**
- **Andreas Voss, Research in Electronic Markets and the Legend of the Yeti: Will we ever find Best Practice in E-Commerce?**

# Extending ERP Systems in SMEs into Personalized E-Commerce Applications

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Leading House **E**cademy<sup>CH</sup>

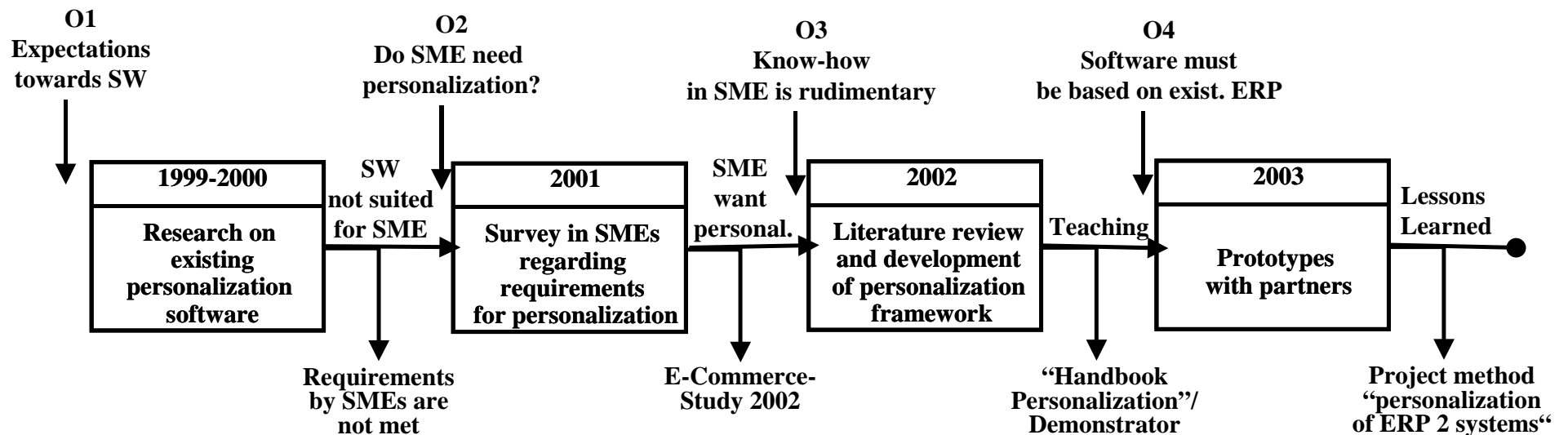
- **Motivation**
- **The research project**
- **Results of an empirical survey**
- **Personalization framework**
- **Finding a standard project method**
- **Conclusions**
- **Future Research**

- **Personalization starts AFTER THE LOGIN**
- **Targeted at the fulfillment of a special requirement of the user**
- **Aimed at people as well as organizational roles in companies (e.g. a purchasing agent)**
- **Personalization is context sensitive (regarding output for a certain user) and requires learning (by the system)**

- **Integrated software packages for personalization are available.**
- **Expensive applications (for use in large companies)**
- **Separate consideration of SMEs is meaningful because they differ from corporations in many respects.**
- **They are characterized by**
  - **limited financial resources**
  - **poor conceptual knowledge**
  - **limited IT resources and**
  - **low economies of scale and scope.**

- **Research project: Personalization of E-Commerce Applications**
  - **Start of project: June 2000**
  - **Government funding by soft[net] and KTI**
  - **Focus: Personalization in SMEs**
- **Starting position**
  - **Only a few SME-operated E-Commerce applications use personalization**
  - **Available standard software tools are not suited for SMEs**
  - **Competitive disadvantage for SMEs**

# Research Steps

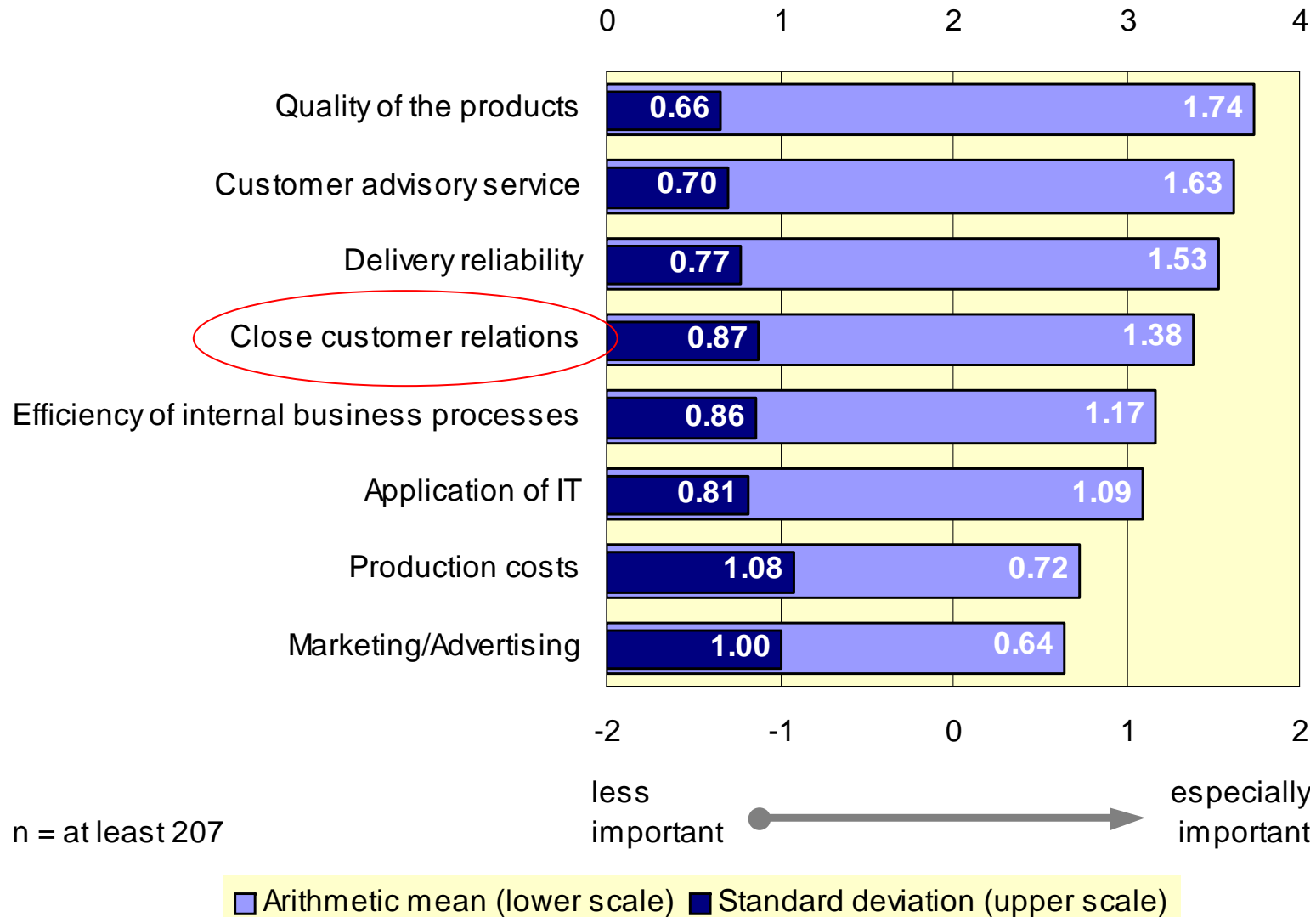


# Results of an empirical survey

<b>Time</b>	<b>August/September 2001</b>
<b>Region</b>	<b>Basel-Stadt and Baselland</b>
<b>Methode</b>	<b>Questionnaire (paper and Internet)</b>
<b>Enterprise size</b>	<b>SMEs with 1 to 250 employees</b>
<b>Target groups</b>	<b>Mainly managing director (owner) and IT manager in SME. Independent IT service companies and management consultants (“experts”).</b>
<b>Response rate</b>	<b>271 questionnaires, 216 by SMEs and 55 by experts; ratio: 16 percent</b>



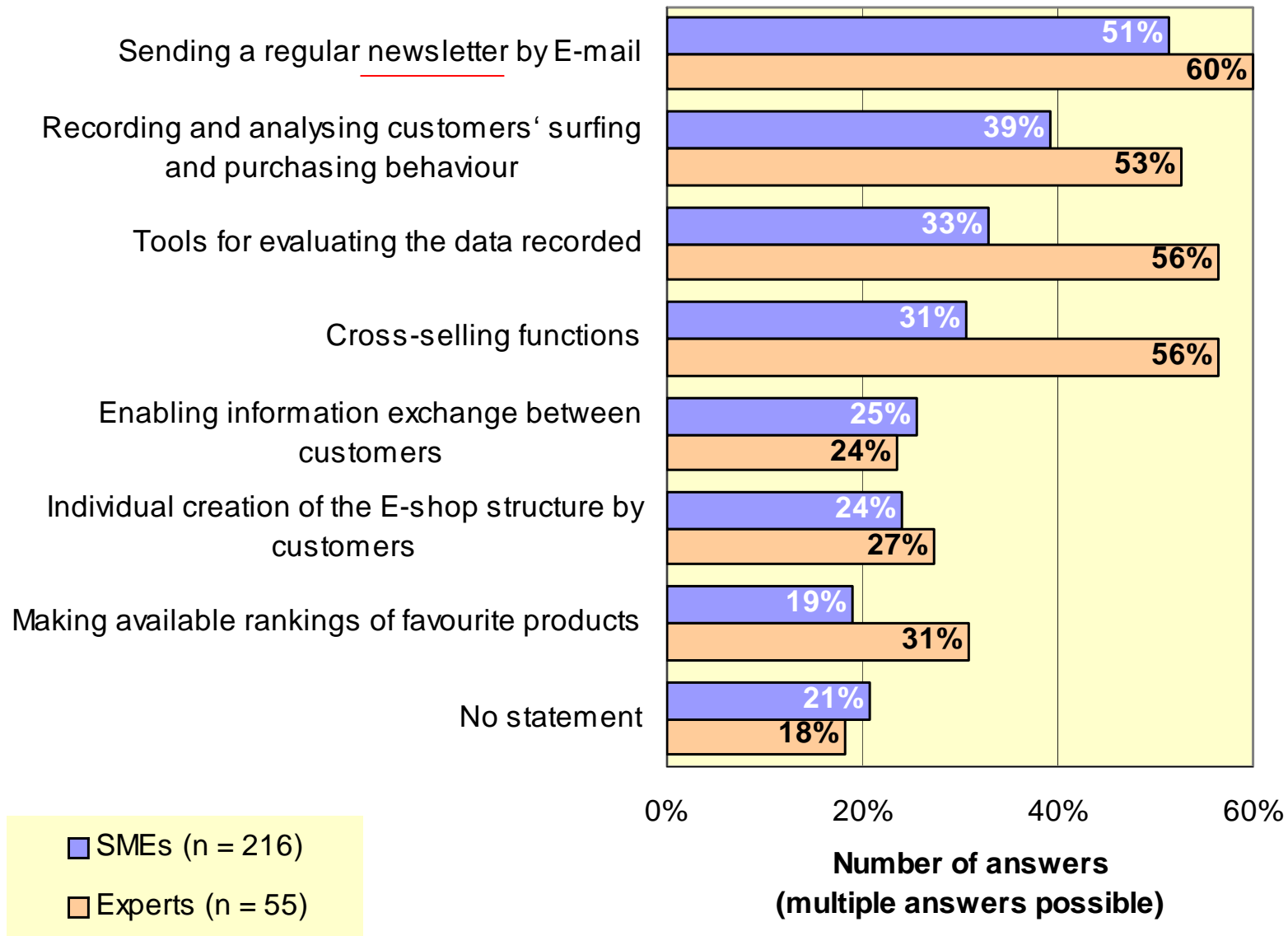
# Success factors in SMEs



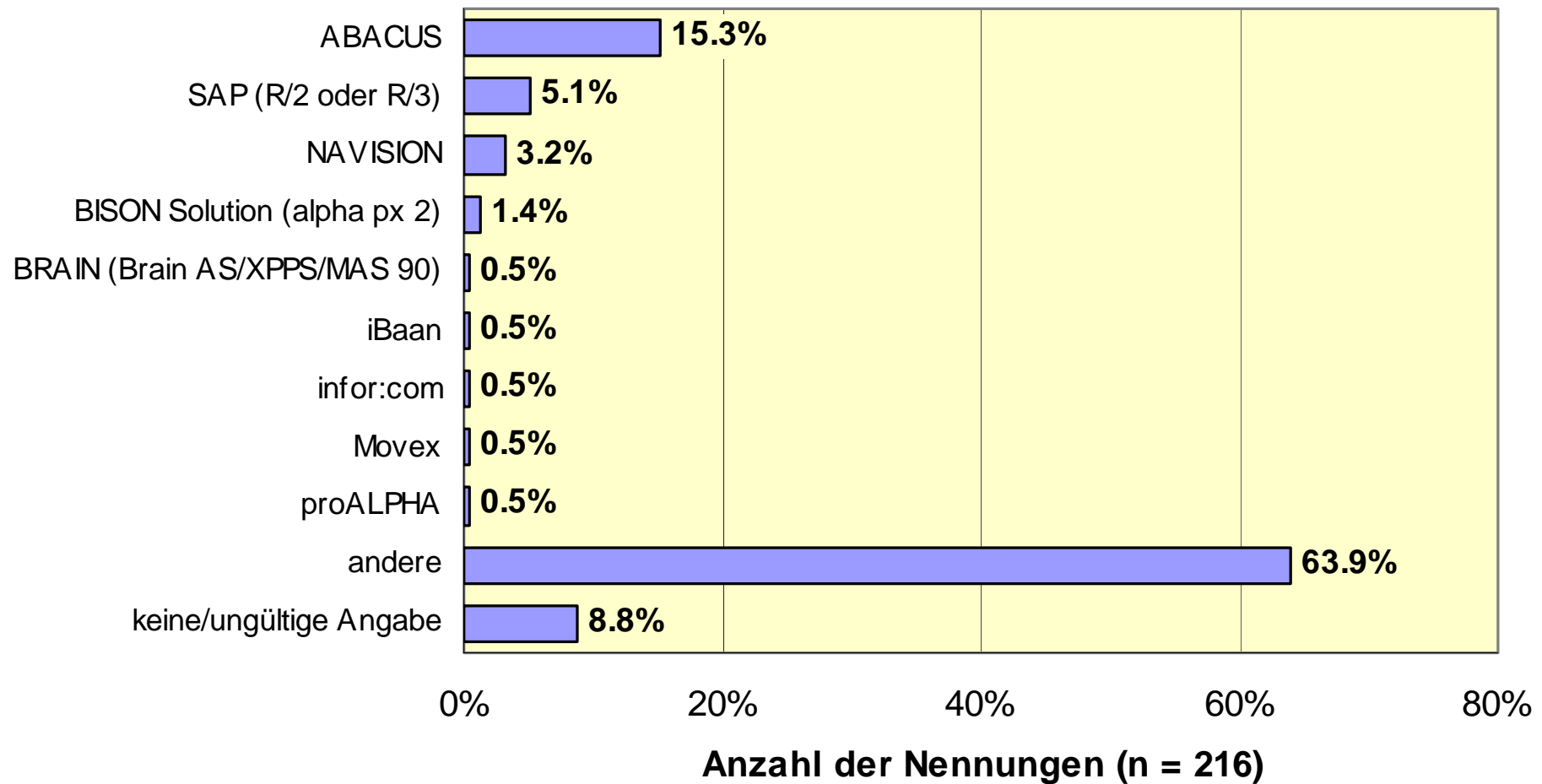
# Personalized E-Commerce in SMEs (I/II)



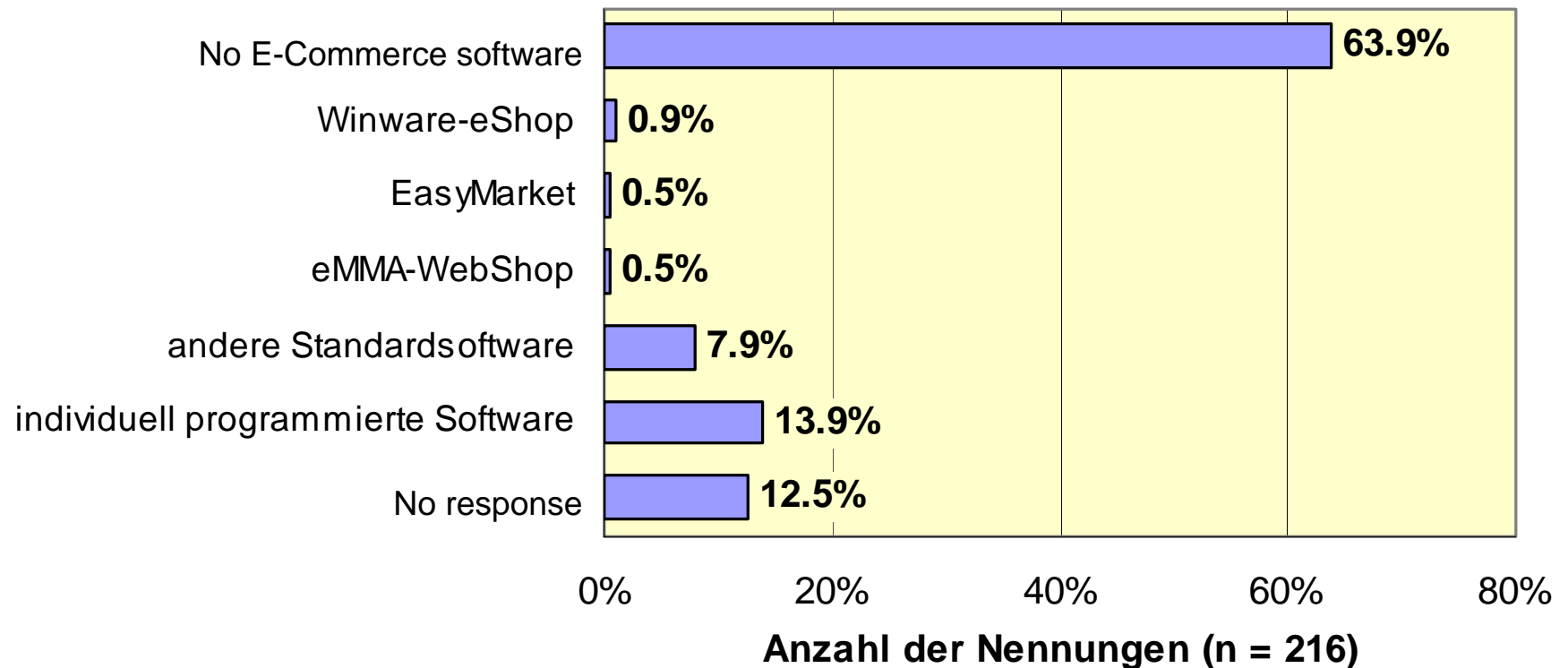
# Personalized E-Commerce in SMEs (II/II)



## → No standard ERP for SMEs

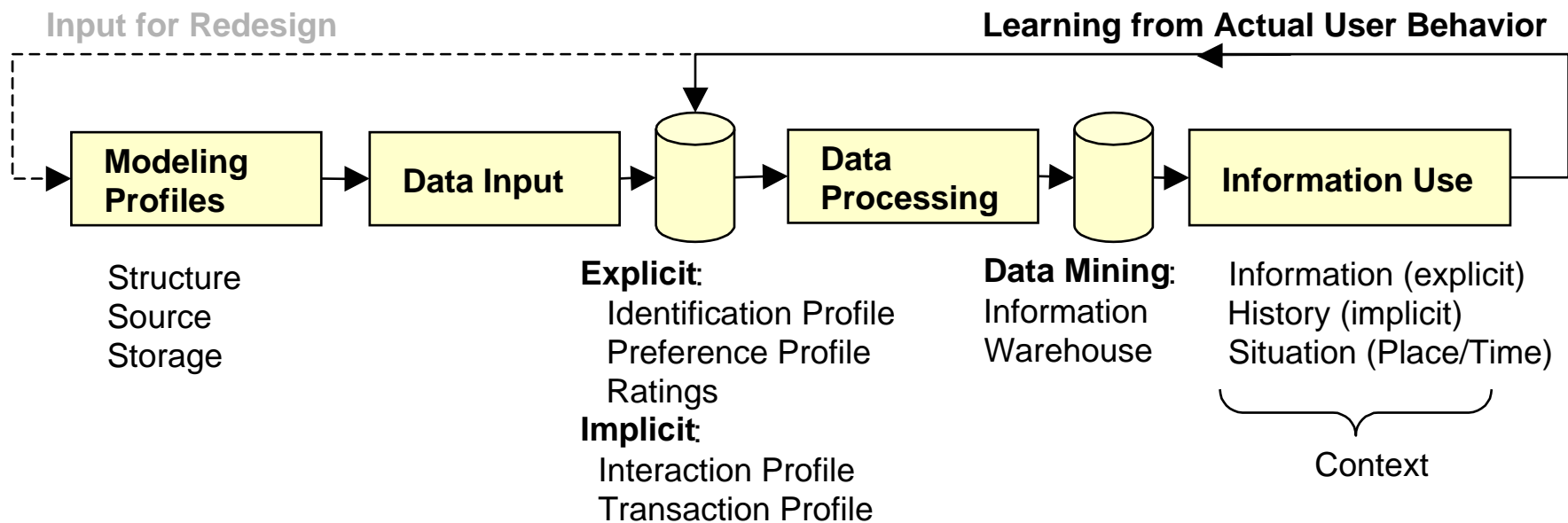


→ No standard E-Shop software for SMEs



# Framework for the Personalization of E-Commerce Systems

- Step 0) Modeling Customer Profiles
- Step 1) Data Input
- Step 2) Data Processing
- Step 3) Information Output

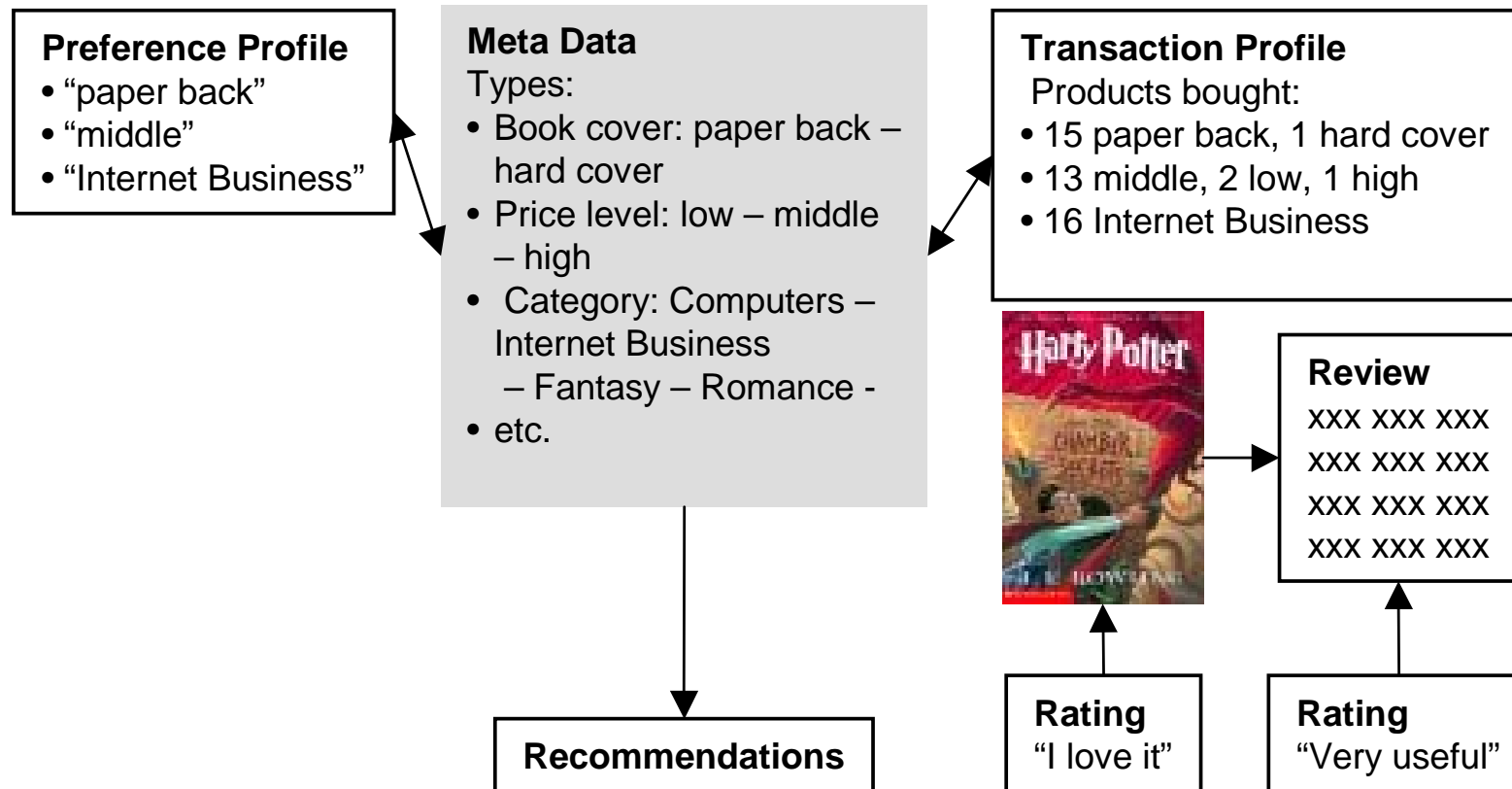


- **Explicit profiles**
  - Identification Profile (name, context information, payment information)
  - Preference Profile (categories)
  - Socio-economic Profile (self-categorization in predefined classes – age, gender, hobbies, ...)
  - Reviews
  - Ratings (of products, reviews, users)
- **Implicit profiles**
  - Transaction Profile
  - Interaction Profile (click stream)



- **Explicit information (reactive approach)**
  - Defining categories
  - Asking the customer (Web forms)
  - Categorization of pages (meta data)
- **Implicit information, recording customer activity (non-reactive approach)**
  - Storing transactions and interactions (log files)

# Defining the Right Categories



- **Data mining/web mining techniques  
(especially for transaction and interaction profiles)**
- **Defining rules for the use of the profiles**

- **Matching product and user meta information**
- **Content-based filtering**
  - **Same/directly linked categorization/meta information in user profile and in product meta information**
  - **Rule-based approaches**
  - **Similarity approaches**
- **Collaborative filtering**
  - **Match users with a similar taste**

# Developing a Standardized Project Method for Personalization Projects in SMEs

- **Four projects**
- **Running time of each project: one year**
- **Partners**
  - **Four ERP II system suppliers (Abacus Research AG, OPACC Software AG, Polynorm AG, Simultan AG)**
  - **Four pilot customers (Also Comsynt AG, Ecomedia AG, KDMZ, Technofil AG)**
  - **One consultant with experience in personalization projects (TIM Consulting AG)**
  - **One lawyer with special knowledge on legal aspects of personalization (Weblaw GmbH)**

# Project Steps

Tasks	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Kick off meeting, Analysis	■											
Creation of ideas		■	■									
Teaching			■									
Concept development				■	■	■						
System development							■	■	■	■		
Testing, system implementation										■	■	■
Documentation											■	■
<b>Milestones</b>				▲ 1			▲ 2			▲ 3		▲ 4

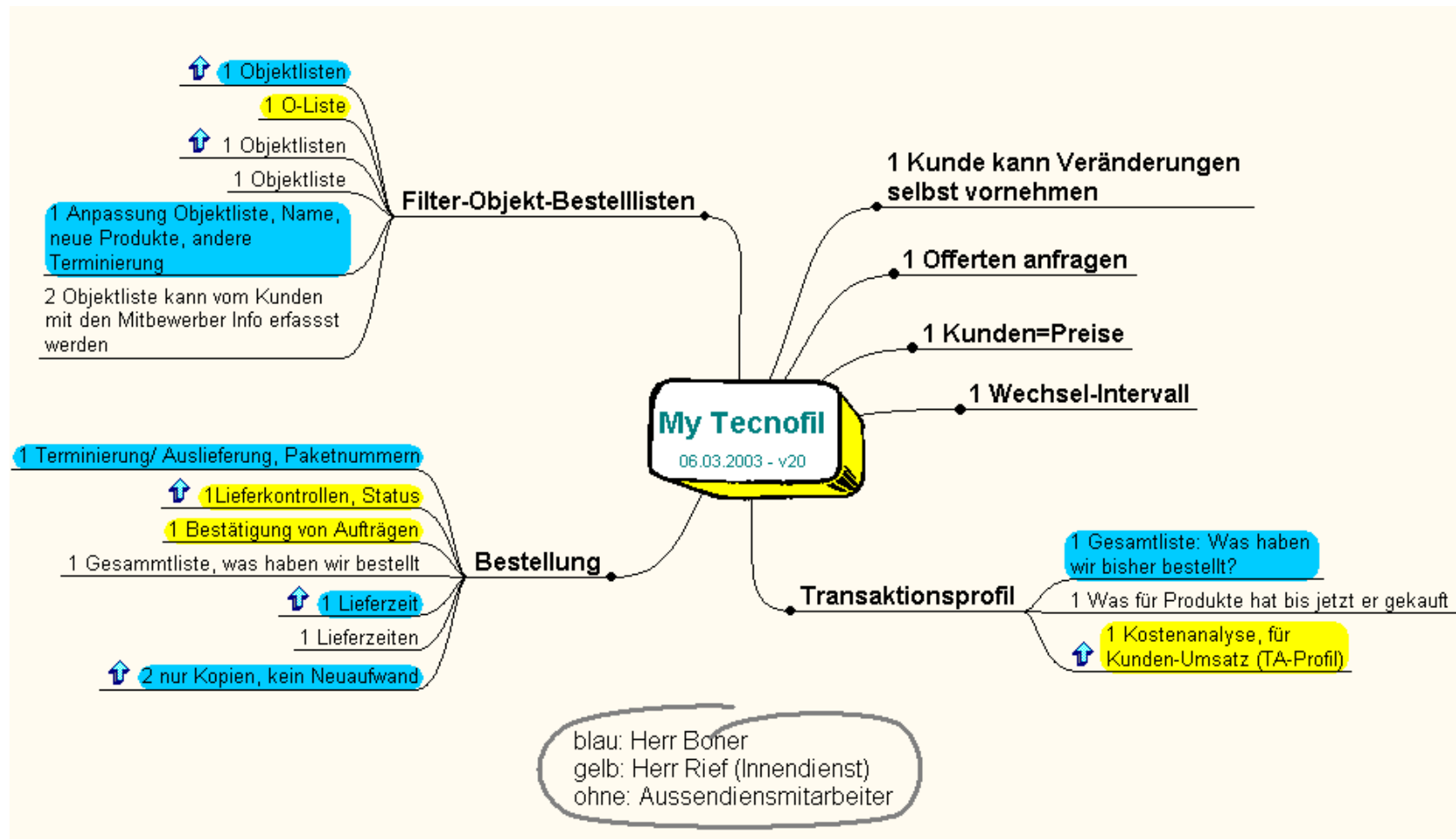
# Ending of a Metaplan® Meeting





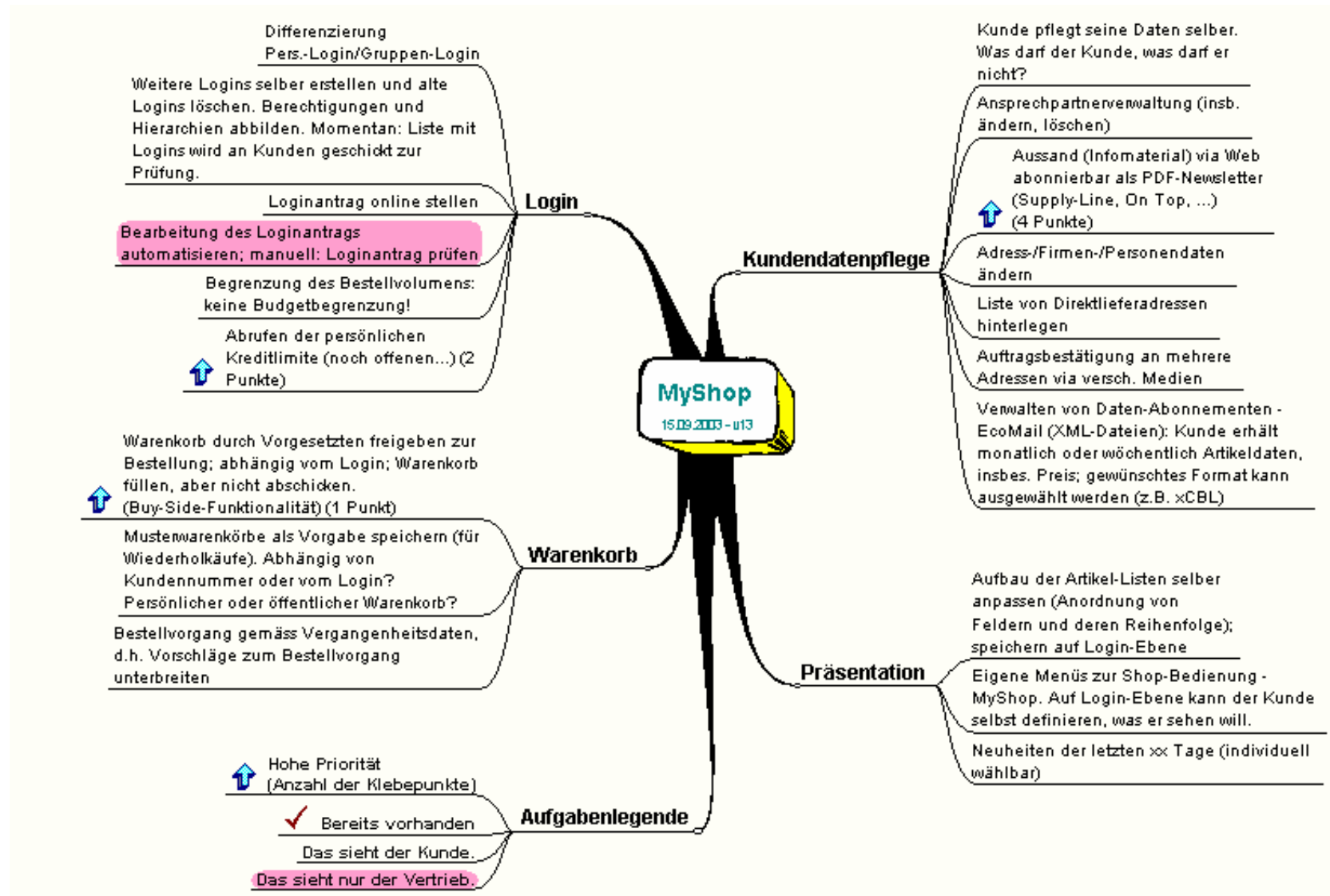
# Example of a Meta Plan Result (I/II)

[source: company workshop]



# Example of a Meta Plan Result (II/II)

[source: company workshop]



# Example of “Rapid Screen Design” (I/II)

[source: company workshop]


Horizontales Menü

Benutzerstatus: **Identifiziert**

**tecnofil** ▲  
Filtertechnik der Zukunft

Filtersortiment | Meine Objekte | Meine Bestellungen | Kundenberater

## Wasserfilter XY-12345



- **Beschreibung**  
Dieser Wasserfilter eignet sich für ... abc  
def abc def abc def abc def abc def abc def  
abc def abc def
- **Technische Spezifikationen**  
xyz xyz ...
- **Bruttopreis: 150.-**
- **Ihr persönlicher Nettopreis: 123.-**

Bestellungen  
Dieses Produkt  
[bestellen.](#)

Anfrage  
Offerte für dieses  
[einholen.](#)

Vertikales Menü

# Example of “Rapid Screen Design” (II/II)

[source: company workshop]

The screenshot shows the ECOWEB interface. At the top, there are three menu items: "Menu 1", "Menu 2", and "Menu 3". The ECOWEB logo is in the top right corner. The main content area is titled "Wählen Sie die Felder und deren Reihenfolge für die Artikel-Auswahlliste". It is divided into two columns: "Nicht gewählt" (Not selected) and "Gewählt" (Selected). The "Nicht gewählt" column contains a list of fields: "Originalnummer", "Verkaufspreis" (highlighted), "Netto-Einkaufspreis", and "Verfügbarkeit". The "Gewählt" column contains a list of fields: "Artikelnummer", "Bezeichnung", "Menge", and "Einheit". A double-headed arrow between the columns indicates the transfer of fields. A vertical double-headed arrow on the right of the "Gewählt" column indicates reordering. A "Auswahl speichern" (Save selection) button is at the bottom right.

Menu 1    Menu 2    Menu 3

ECOWEB

Wählen Sie die Felder und deren Reihenfolge für die Artikel-Auswahlliste

Nicht gewählt		Gewählt
Originalnummer		Artikelnummer
Verkaufspreis	↔	Bezeichnung
Netto-Einkaufspreis		Menge
Verfügbarkeit		Einheit

Auswahl speichern

- **SME acknowledge the *personal* sales approach as a key aspect of their success.**
- **E-Commerce applications are an *interface* to the customers and their personalization can thus be beneficial for both vendors and customers.**
- **The ERP is a suitable core for SME-operated personalized E-Commerce applications.**
- **SMEs need *individual consultation*. They need to identify the value proposition which they can implement on the electronic medium.**
- **Consultants need special methods and instruments.**

- **Development of a methodology, which allows a systematic consulting process in SMEs**
- **Development of a Web based Decision Support System (DSS)**
- **Development of check lists dealing with the legal aspects of personalized Web sites**

**Thank you!**

**Questions and Suggestions?**

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