Future of Online Marketing
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Background

► **Company Webtrekk/ Mapp:** Tracking Web Shopping data for e.g. Deutsche Bank, Tchibo, Esprit, etc.

► **Customers are not aware** of the potential of their data, at the same time huge money is spent by marketing for data scientists

► **Recommendations** as a multi-purpose product for marketing

General Use Case (Industry perspective)

- **Goal UC3:** Stimulate user interactions with suitable content

- **Needed UC3:** Transaction data with content ids and business value

- **General idea:** Recommend „Suitable Content"

Association Rule Mining

TID	Items
1	Bread, Milk
2	Bread, Diaper, Beer, Eggs
3	Milk, Diaper, Beer, Coke
4	Bread, Milk, Diaper, Beer
5	Bread, Milk, Diaper, Coke

▶ Association rule mining for bought, viewed or added Items (or item categories)

▶ implemented by FP Growth/ Red-black-trees

▶ Support: The number of transactions containing the left side of a rule

▶ Confidence: The ratio of transactions with left and right side vs. just left side

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Example 1: Diaper->Beer s: 4, c: 0.75
Example 2: Diaper,Milk->Beer s: 3, c: 0.67
Example 3: Beer->Diaper s: 3, c: 1.0
Example 4: Beer->Diaper,Milk s: 3, c: 0.67

The FPGrowth algorithm uses minimum support while constructing the so-called FP-tree.

▶ **Support:** The number of transactions containing the left side of a rule

▶ **Confidence:** The ratio of transactions with left and right side vs. just left side

Use Case re-visited – suitable implementations?

- Cross-selling (viewed product->purchased product) "type": "crossselling" (Same Session) "leftSide": "VIEW","rightSide": "BUY"

- Upselling (Viewed to Bought) Products often bought with products in basket (in-session, personalized) "type": "upselling" (SUBSEQUENT SESSIONS) "leftSide": "VIEW", "rightSide": "BUY"

- Is that really what we (as consumers) want?

GDPR in E-Commerce (no legitimate use)

▶ Data collection only with informed consent, i.e. the exact purpose of data storage, data duration, and exact uses must be clear

▶ Right to access, erase, and object must be granted to data subject

▶ Data protection by design and by default

▶ While transferring data out of the EEA, organisations must ensure the compliance with GDPR

The perfect information marketplace

▶ In the past, marketing was also the main way to learn about products and services. In the digital age, the information about offers should be fully transparent, so that needs can be fulfilled perfectly.

▶ Even so, marketing may have important roles, which ones? Can we design such a market place?

▶ Instructions:

    ▶ Identify User Groups: Consumers, Providers, Marketeers, etc.

    ▶ Identify Use Cases: Sustainability, Worker, Special Needs, etc.

    ▶ In Groups (or per UC): Detail each use case ...

Use Case Modeling by Example

▶ Description: The understanding/ comprehension of paper-based documents is often aided by the inclusion of margin notes and by highlighting important sections using fluorescent marker pens. Since many people are now reading texts in electronic form, a program which can provide such aids to understanding would be a useful tool.

▶ Use Cases: Margin Notes (skipped), Highlighting (skipped), References (create, delete, follow)

▶ Use Case „Create Reference" on next slide …
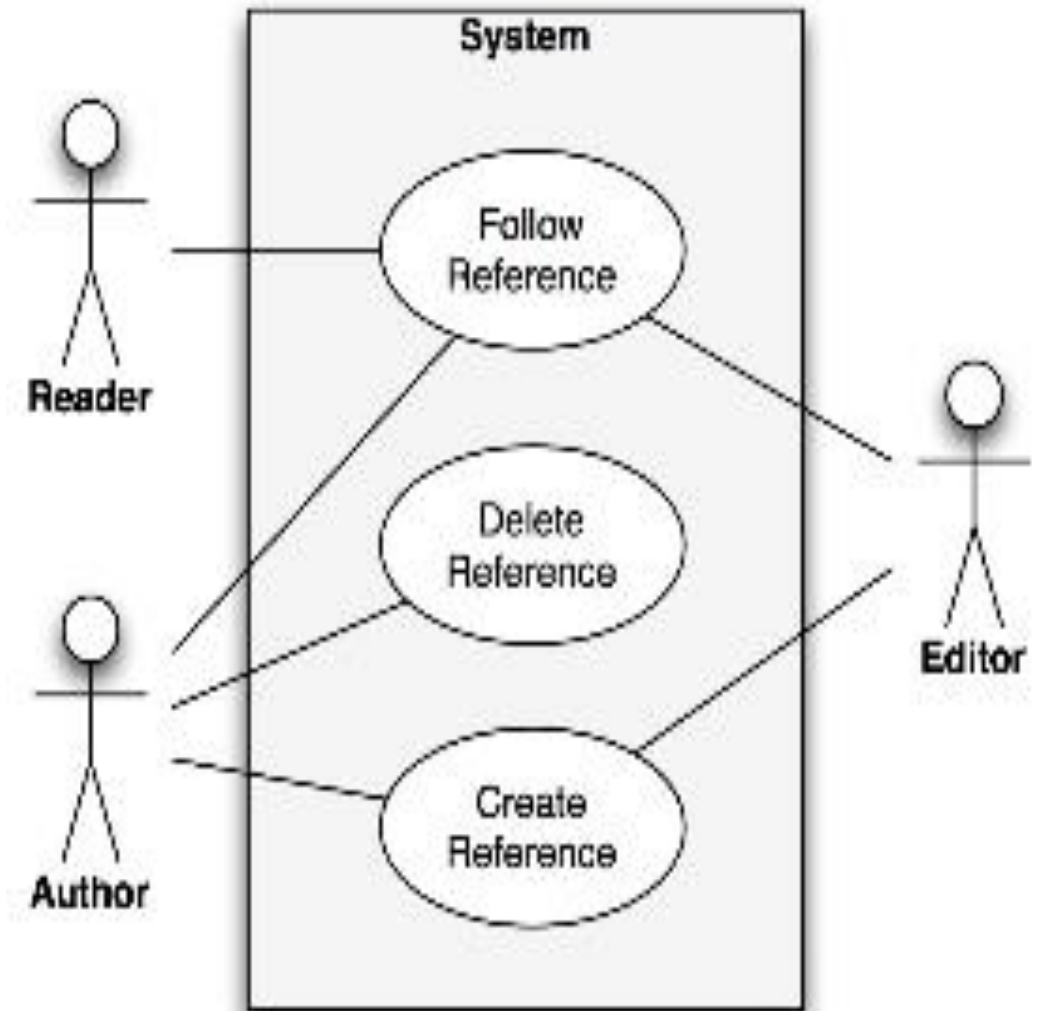
Use Case Example „Create Reference"

Name: Create Reference
Participating Actors: Author, Editor
Entry Condition: Text is opened and Editor has navigated to the source area of the planned reference.
Exit Condition: Reference is placed and can be followed.
Event Flow:

1. Editor marks text fragment (Use case: Mark Text) as source for the reference.

2. Editor selects function "Create Reference".

3. Editor navigates to destination of reference (Use case: Navigate).

4. Editor marks text fragment (Use case: Mark Text) as destination of reference.

5. Editor completes the creation of the reference and adds an explanatory text.

6. System shows the reference.