Information and Communication Technologies in Tourism
Dynamic Packaging of Tourism Products and Services

- Dynamic Packaging in Tourism
- Basic Composition Mechanism
- A Dynamic Packaging Architecture
- Case study Flexpackage.com
Dynamic Packaging of Tourism Products and Services

- Dynamic Packaging in Tourism
- Basic Composition Mechanism
- A Dynamic Packaging Architecture
- Case study Flexpackage.com
Dynamic Packaging in Tourism

■ Motivation of dynamic packaging

• Travel packages play an important role in tourism

• Consumers prefer to create their own packages rather than purchase pre-packaged tours

• No support for dynamically composing single products to travel packages

• Different types of tourism services are often only available on different online platforms

Marcussen 2006
Dynamic Packaging in Tourism

- Components of dynamic packaging
  - Individual consumer search request
  - Ability to combine multiple travel components (typically air, car and hotel) in real time
  - Integration of services from different sources (dynamic sourcing)
  - A single, dynamically priced package (hiding the pricing of individual components) (dynamic pricing)
  - Booking of complete travel package in real time
Dynamic Packaging Requirements

- **Customer requirements**
  - Adaptation and personalisation of bundeling process depending on customer profile
  - Ensuring combinability of services
  - Recommendation of optimal travel packages or additional services to existing travel itinerary

- **Supplier requirements**
  - Yield & capacity management
  - Consideration of business rules and constraints for building travel packages
  - Comfortable, flexible definition process
Supplier of dynamic packaging functionality

- Dynamic packaging functionality can be integrated into customers' website.
- Dynamic packaging engine provides XML feeds from different suppliers.
Dynamic Packaging of Tourism Products and Services

- Dynamic Packaging in Tourism
- Basic Composition Mechanism
- A Dynamic Packaging Architecture
- Case study Flexpackage.com
Basic Composition Mechanism

Composition mechanism

An attribute $a_i$ of the composition is evaluated by:

$$a_i = f_i(p_1, ..., p_k, q_1, ..., q_l)$$

with $p_i$ attribute of component P and $q_i$ attribute of component Q

- Bundling of several tourism services, characterised by a set of attributes, to a composition service, again characterised by a set of attributes
- Attribute values of a composition service are evaluated from the attribute values of the components being part of the composition
Structure of a Composition

- **Degree of freedom of a composition**
  - Fix supplier-initiated composition
  - supplier-init. composition with choices
  - customer-initiated composition

- **Structure of a composition**
  - **Components**
    - A set of tourism services
    - A role within the composition, defined as it’s relationships to other components
  - **Attributes** evaluated by evaluation instructions
  - **Evaluation instructions** enabling the dynamic calculation of attribute values out of the attributes of the contained components
  - **Constraints** enabling to restrict the combination possibilities within a composition and refer to the attributes of the contained components
Basic Composition Mechanism

- Basic interface provides all attributes, relevant for the composition of services, in a uniform way
  - Attributes describing the begin & end state concerning the dimension location and time
Dynamic Packaging of Tourism Products and Services

- Dynamic Packaging in Tourism
- Basic Composition Mechanism
- A Dynamic Packaging Architecture
- Case study Flexpackage.com
A Dynamic Packaging Architecture

Agent-based dynamic packaging network

- Users access a network of intermediaries/suppliers
- Intermediaries/suppliers offer services, evtl. by bundling services, and partially delegate requests to other intermediaries/suppliers

Ricci et al. 2003
A Dynamic Packaging Architecture

Agent Structure

- Interaction planner: Executes conversation/interaction plans
- Believes model: Creates and manages hypothesis on the behavior and preferences of the user and of the other agents
- Decision making: Supports decision making in a multi-agent network
- Learning: Learning of user models and negotiation strategies

Ricci et al. 2003
A Dynamic Packaging Architecture

- **Multiple travel bundling strategies**
  - Single iterative product selection from catalogues
  - Recommendation by proposal
    - tweaking by critiquing
  - Selection of a complete package
    - fixed or simple customisable packages provided by suppliers
  - Completion of a partial package
    - fulfilling open user goals or completing to a typical package
  - Flexible customisation of a package
    - user navigation within a space of alternatives
  - Completely dynamic bundling of a package starting from elementary products
Dynamic Packaging of Tourism Products and Services

- Dynamic Packaging in Tourism
- Basic Composition Mechanism
- A Dynamic Packaging Architecture
- Case study Flexpackage.com
Ihr personliches Package:

22.1.2007 - 24.1.2007

Doppelzimmer Deluxe
2 Personen
2 x Vollpension pro Person
1 x Maniküre
2 x Pediküre
1 x 18-Loch GF Mo-Fr
1 x Trolley

Kostenloser Bonus
1 x Maniküre

Inkludierte Gebühren
Kurtaxe

Regulärer Preis: 664.40
Ihr Preis: 596.20

(c) www.flexpackage.com
### Preisregeln

- **Listen- und Mindestpreis**
- **Einzelzimmerzuschlag (4)**
- **Einmalgebühren pro Aufenthalt (1)**
- **Zusatzgebühren pro Person (3)**
- **Ermäßigung Kinder / Zustellbetten (1)**
- **Nächtings-Reduktion (2)**
- **Wochentags-Reduktionen (2)**
- **Nachtigungs-Zugaben (2)**
- **Mindestaufenthaltstage**

---

### Diagramm

<table>
<thead>
<tr>
<th>Tag</th>
<th>Preis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Jan</td>
<td>100</td>
</tr>
<tr>
<td>3 Jan</td>
<td>70</td>
</tr>
<tr>
<td>5 Jan</td>
<td>65</td>
</tr>
<tr>
<td>7 Jan</td>
<td>65</td>
</tr>
<tr>
<td>9 Jan</td>
<td>65</td>
</tr>
<tr>
<td>11 Jan</td>
<td>65</td>
</tr>
<tr>
<td>13 Jan</td>
<td>65</td>
</tr>
<tr>
<td>15 Jan</td>
<td>65</td>
</tr>
<tr>
<td>17 Jan</td>
<td>65</td>
</tr>
<tr>
<td>19 Jan</td>
<td>65</td>
</tr>
<tr>
<td>21 Jan</td>
<td>65</td>
</tr>
<tr>
<td>23 Jan</td>
<td>65</td>
</tr>
<tr>
<td>25 Jan</td>
<td>65</td>
</tr>
<tr>
<td>27 Jan</td>
<td>65</td>
</tr>
<tr>
<td>29 Jan</td>
<td>65</td>
</tr>
<tr>
<td>31 Jan</td>
<td>65</td>
</tr>
</tbody>
</table>

*1 Monat | 6 Monate | 12 Monate | aktuelles Jahr: 01.01.2007 - 01.02.2007*
### Listenpreis pro Person

- Für nicht definierte Zeiträume: 25.00 EUR
- 01.07.2007 - 01.08.2007: 22.00 EUR

### Mindestpreis pro Person

- Für nicht definierte Zeiträume: 20.00 EUR

### Mengen-Reduktion

- 01.05.2007 - 31.08.2007: Rabatt ab 5 Teilmassagen
  - ≥ 5: 10.0%
- 01.03.2007 - 30.04.2007: Rabatt ab 5 Teilmassagen
  - ≥ 5: 5.0%

### Mengen-Zugabe

- 01.05.2007 - 31.03.2007: 0. Teilmassage kostenfrei
  - ≥ 7: 1x Teilmassage
- 01.03.2007 - 30.04.2007: 10. Teilmassage kostenfrei
  - ≥ 9: 1x Teilmassage