## trivago

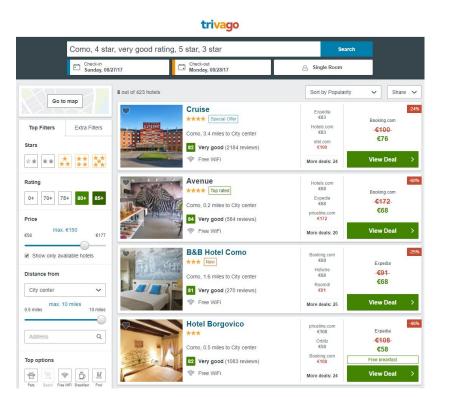
# Specific challenges for tourism recommender systems seen from academic and the industry perspectives

**Panel Discussion** 

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## **About us**



- Mission: Helping the travelers to find their ideal hotel at the best price
- Main Product: Hotel meta-search
  - Hotel feature, price, advertiser comparison
  - Search criteria, Map, Sort orders
  - · Ranking of hotels, adv. relevance
  - Redirection
- Problem size:
  - 100M+ visitors per month
  - 1M+ hotels
  - 250 advertisers (booking sites)
- Primary business model: Cost-per-click



## **Hotel domain**

#### Main challenges:

- 1. Expensive transactions, price sensitivity
- 2. Frequency of the interactions (next travel, search sessions, low booking ratio)
- 3. Unstable preference (seasonality, domain knowledge, contextuality, multi-criteria optimization)
- 4. Online booking vs. real world
- 5. Business goals vs. user goals



## Meta-search

#### Main challenges:

- 1. User Journey (limited tracking users after redirection, lack of feedback about the booked hotels)
- 2. Healthy marketplace (recommendation of advertisers, hotel inventory)
- 3. User Engagement (trivago to booking sites, high bounce rate, moment of truth)
- 4. Lack of registration (identification issues, campaings)
- 5. Business model (click- or acquisition based revenue, short- vs. long-term revenue)



## **Product**

#### Main challenges:

- 1. Real-time service (production, scalability, responsiveness, reliability)
- 2. Online KPIs (user reactions, business KPIs, multi-criteria, offline vs. online opt., A/B testing)
- 3. Personalization is more about recommendations
- 4. Productivity vs. completeness (workarounds, hard deadlines)
- 5. Cost of experimentation/monitoring (risk, failure, maintenance)



## **Further factors**

| Factor*              | Description   | Trivago  |
|----------------------|---|----------|
| Heterogeneity        | Diversity of the characteristics and goals of the items in the inventory. | Low      |
| Risk                 | User's tolerance for false positives among the recommendations.           | High     |
| Churn                | Probability of leaving the website, getting unavailable.                  | Low-High |
| Interaction style    | Preference elicitation. Implicit or explicit feedbacks.                   | Both     |
| Preference stability | Stability of the preference of the user over time.                        | Unstable |
| Scrutability         | Demand for education and explanation.                                     | Required |

<sup>\*</sup>Burke, Robin, and Maryam Ramezani. "Matching recommendation technologies and domains." Recommender systems handbook. Springer US, 2011. 367-386.



## Thank You!

Questions?

