Travel Information Search on the Internet

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Introduction

• Tremendous development of the Internet
  – The Internet population has reached 445.9 million in 2002
  – Online transactions has made 53, 066 million in 2001
• Huge amount of travel related information is still a problem
• Understanding of travel information searcher’s behavior is essential
Nature of Travel Planning and Decision Making

- Travel planning is (Jeng, 1999):
  - A hierarchy of decisions which involves a set of sub-decisions, for example, destination, travel partners, accommodation, dining and others;
  - Each sub-decision has different rigidity level and centrality level;
  - Multi-facet, dynamic and contingent process.
Information Search on the Internet as Information Foraging

• Information Foraging:
  • Information searchers use proximal cues to identify important information for further exploration or consumption (in analogy to the food foraging behavior of animals)

• Information scent:
  • Information searchers identify valuable information from the “snippets” of proximal cues (represented by link anchors and around texts or pictures on the Web) (Chi, Pirolli, Chen and Pitkow, 2001).
Understanding Travel Information Search

• The interaction between a user and a computer (HCI research);
• The interaction between an information searcher and an information system (Information science);
• The interaction between a hypertext navigator and a hypertext system (Hypertext research).
General Concepts of Mental Models

- Jacob and Shaw (1998, pp. 158): Mental model is “internal cognitive structure that the individual constructs, explicitly or implicitly, to represent a particular target domain, be it an event, an activity, an object, or a subject area”

- Declarative Knowledge vs. Procedural Knowledge

- Semantic mental model vs. schema

- The polyrepresentation of concepts in the languages between the users’ cognitive space and the information space of information system is a major issue when designing an effective information system interface (Ingwersen, 1996).
Mental Models and Travel Information Search

- User’s mental model and system’s conceptual model (Norman, 1986);
- Using semantic networks to represent semantic mental models was supported by cognitive research (Collins and Quillian, 1972; Doerfel, 1998);
- Mismatch between travel information searcher and tourism marketers and information technology expert.
Travel Information Search Process
A Conceptual Model

- Initial mental model as **Goal network**: destination, travel partners, accommodation, dining and others – first level of mental model
- The **semantic network** of goals – second level of mental model
- **Choice of links** based on the relative value of information scent: the link anchors and around texts or pictures are based on
- Navigational search and informational search
- Search process can be broken up into different episodes; each episode will change information searcher’s mental model. A **dynamic process**
An Illustrative Goal Network for Travel Planning

- Destination
- Travel Date
- Length of Trip
- Travel Partners
- Transportation Mode
- Attractions
- Expenditures
- Activities
- Food Stops
- Rest Stops
An Illustrative Semantic Network for Destinations and Activities

Destinations
- Tropical
- South
- Theme Parks

Activities
- Exciting
- Art
- Boating
- Scuba Diving
- Shopping

Florida
- Disneyland

Museums
What happened during a click?
A Dynamic Process – a learning process

Mental Model

Search 1

Mental Model

Search 2

Mental Model

Search 3

Conceptual Model

Tourism Information Space
Implications

• Congruence of semantic networks as measurement of information scent;
• Provide meaningful tourism ontologies for semantic webs and semantic data modeling;
• Predicting future clicks through past click streams in a search session.