A Conceptual Model of Travel Information Search on the Internet

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Introduction

• Tremendous development of the Internet
  – The Internet population has reached 445.9 million
  – 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
Understanding Travel Information Search on the Internet

- The interaction between a user and a computer;
- The interaction between an information searcher and an information system
- The interaction between a hypertext navigator and a hypertext system.
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”

- 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

- User’s mental model and system’s conceptual model (Norman, 1986);
- Using semantic networks to represent 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 Planning and Decision Making

Travel information search is not a simple decision but rather 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.
Information Foraging Theory

• A general model describing information search according to changing environment in analogy to the food foraging behavior of living organisms
  • Information searchers use proximal cues to identify important information for further exploration or consumption
  • The concept of “information scent” describes how information searchers identify valuable information from the “snippets” of proximal cues (represented by link anchors and around texts or pictures on the Web). The value of information scents was measured using vectors of words in the documents in relation to the information searcher’s intention (Chi, Pirolli, Chen and Pitkow, 2001).
A Conceptual Model

• Initial mental model as Goal network: destination, travel partners, accommodation, dining and others
• The semantic network of goals
• 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
• Different episodes: each episode will change information searcher’s mental model. A dynamic process
An Illustrative Goal Network for Travel Planning (Adapted from Jeng, 1999)

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

Tourism Information Space

Mental Model

Search 1

Mental Model

Search 2

Mental Model

Search 3

Conceptual Model

Tourism Information Space
Implications

- Using semantic network analysis to extract mental models
- Provide tourism ontologies for semantic webs for tourism
- Infer information searcher’s mental model through clickstream and provide relevant information
- Congruence of semantic networks as measurement of information scent