Overview to Brokering Agents and E-Commerce

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Brokering

- Dark implication?
  - Exploit customer and seller
  - Linda Kim

- Trade mediation
  - Help customer and seller
  - Much room for automation: agent
  - More important in E-commerce

Presentation Schedule

- Overview to Brokering Agents and E-Commerce: 양병선
- Kasbah: 이영복
- Tete-a-Tete and MARI: 이제형
- Open Agent-based Market Infrastructure: 정재윤

Question

- Explain the six stages in the consumer buying behavior model.

Outline

- E-commerce and Brokering Agents
- Consumer Buying Behavior Model
- Examples of Brokering Agents
- AI Techniques and E-commerce
- Summary

Online Retail Sales

- 1996: $600 Million
- 1997: > $2 Billion
  - $800 Million between Thanksgiving and Christmas
- 2001: $17 Billion
New World of E-commerce

Business opportunities:
- efficient channel
- large market

Customer opportunities:
- choice
- convenience

Business challenges:
- customer attention
- customer loyalty

Customer challenges:
- finding relevant stuff
- trust & privacy

Electronic Commerce

- Internet Economics & Pricing
- Marketing & Advertising
- Payment Mechanisms
- Security & Privacy
- Trust & Reputation
- Law & Contracts
- Back-Office Management

- Supply Chain Management
- Product Ontologies
- Multimedia Shopping Environments
- Selling Goods & Services On-line

- ...
Product Brokering

- Consumer determines what to buy according to personal criteria.
  - Critical evaluation of retrieved product information
  - Result: consideration set of products

PersonaLogic: AOL.com decision maker
- Constraint-based filtering

Firefly: Barnes and Noble
- Automated collaborative filtering: word of mouth
- Tete-a-Tete
Merchant Brokering

- Customer determines *from whom to buy*.
  - Evaluation of merchant alternatives
    - price, warranty, availability, delivery time
  - Comparison shopping agents
- BargainFinder: the first agent
- Jango: Excite, Inc.
- Kasbah

Merchant Blocking Issue

- Current merchant brokering = on-line price comparison
- Some merchants do not want to compete on price alone.
  - Accesses from brokering agents are blocked.
- Jango: aggressive interoperability
  - Product requests originate from consumer’s Web browser.

BargainFinder

- catalog format changes broke BF
- one third of the merchants blocked BF
- but other merchants wanted to be included
- average user bought a second CDs w/o BF

Jango (Original)

- Price and other terms of transactions are determined.
  - Stock market, auction house, ad-hoc haggling
- Merchants don’t have to determine the price a priori.
  - Fair resource allocation
- More necessary for B2B than retail
- AuctionBot, Kasbah, Tete-a-Tete

Jango in Excite

Negociation

-...

AuctionBot, Kasbah, Tete-a-Tete
AI Techniques and E-Commerce
- Software agents deal with the cumbersome jobs such as collecting/analyzing information and transactions.
- Recommender systems
- User-interface
- Negotiation mechanisms
- Infrastructure, languages, protocols

Recommender Systems (1)
- Content-based filtering
  - Mainly used in merchant brokering
  - Wrappers
    - Hand-coded: BargainFinder
    - Automated: Jango (50% success rate)
  - API: AuctionBot
- Collaborative-based filtering
  - Feedback and rating
  - Firefly and on-line stores

Recommender Systems (2)
- Constraint-based filtering
  - Mainly used in product brokering
    - Personalogic, Tete-a-Tete
  - Considers relevance with features of items
  - Formulation of problem and solution space
    - variables, domains, constraints
  - General CSP (constraint satisfaction problem) techniques are available.
    - Backtracking and backjumping

User-Interface
- Adaptable and flexible user-interface
  - Different shopping manners
    - Currently, electronic catalog
    - Enhanced price list
  - Virtual shopping world
    - 3D VRML shopping mall
    - Personalized sales agent avatars
- Trust in agent systems
  - Predictable and explainable behavior
    - CSP system > collaborative system.
  - Simple and predictable agents > smart and adaptable agents

Infrastructure, Languages, Protocols
- Construct a full consumer buying system
  - Mix several types of agents for CBB stages
- XML: eXtensible Markup Language
  - Data content meta language
  - Appropriate for the integration
  - Tags must be semantically consistent.
- EDI: Electronic Data Interchange
  - Protocol for B2B

Summary
- Consumer buying behavior model
  - Agents automate CBB stages.
- Information filtering is necessary.
  - Content-based
  - Collaborative-based
  - Constraint-based
- IA usage will expand to B2B and supply chain management.