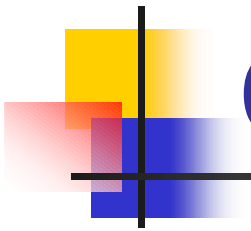
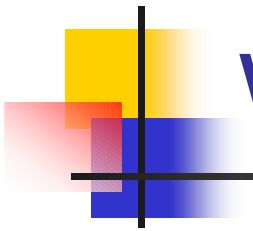
WWW Integration through Multiple Character-Agents Interface

Yasuhiko Kitamura
Graduate School of Engineering
Osaka City University
JAPAN



Contents

- WWW Integration and Interface
- Multiple Character-Agents Interface
- Prototypes
  - Venus and Mars: A Cooperative Recipe Search Engine
  - Recommendation Battlers: A Competitive Restaurant Recommendation System
- Conclusion

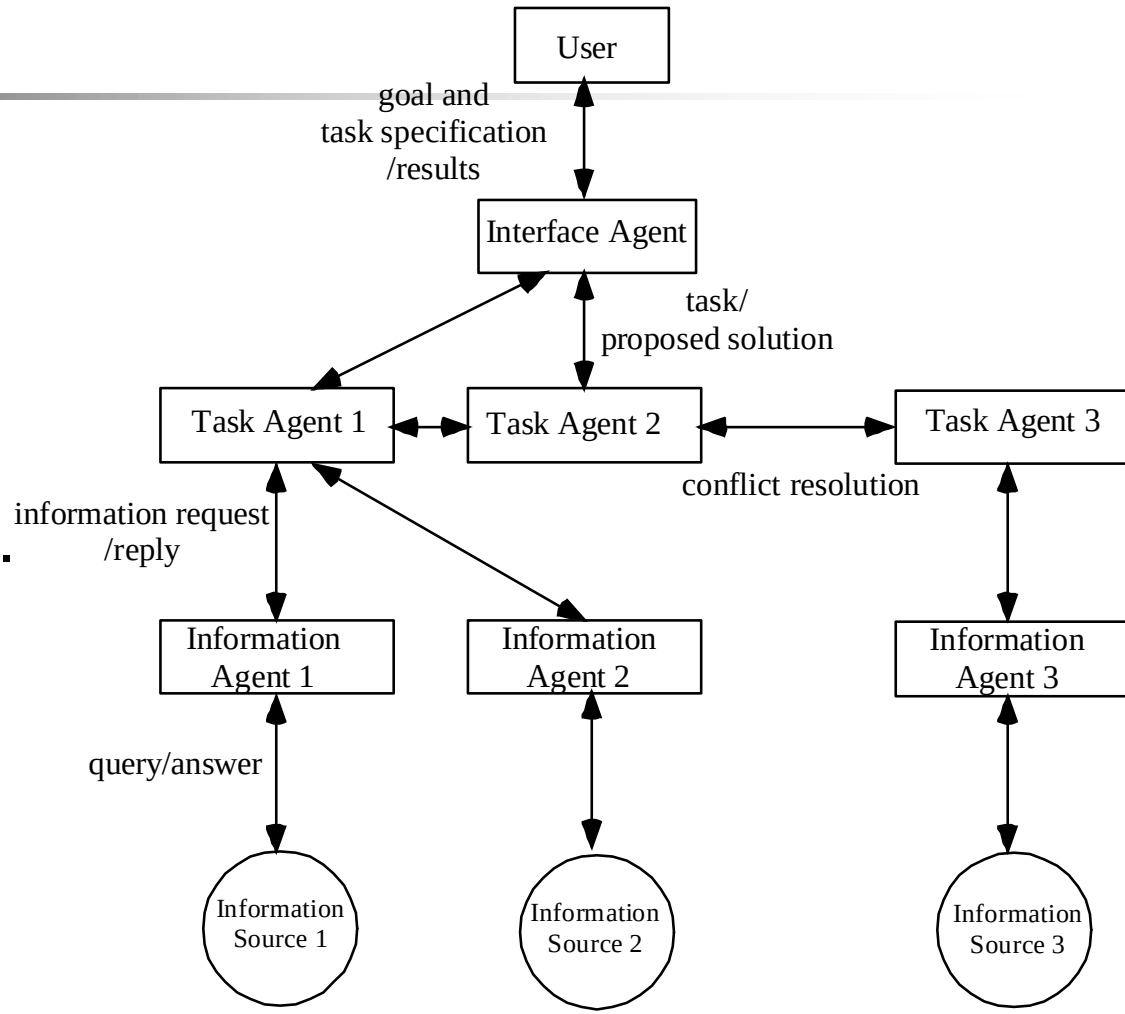


Web Integration

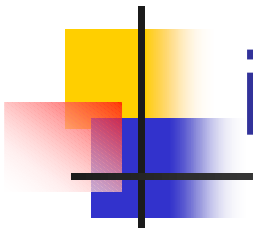
- Web is a large scale distributed information system, but
  - Each Web site is maintained independently.
  - Interrelated information is often distributed among a large number of Web sites.
- We need tools to integrate Web information.
  - Information integration systems: RETSINA (CMU), ARIADNE (USC/ISI), TSIMMIS (Stanford), BIG (UMASS), etc.

RETSINA

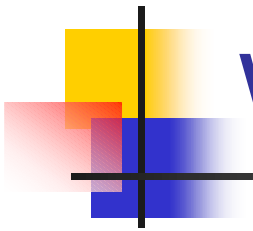
- RETSINA is an information integration platform being developed by Katia Sycara's group at CMU.
- It consists of multiple agents, but the integration process is hidden from the user.



Shortcomings of current Web integration systems



- Current Web integration systems are ready-made by a third party.
- The information integration process is hidden from the user.
- The user are not allowed to change the combination of information sources and/or the integration process.



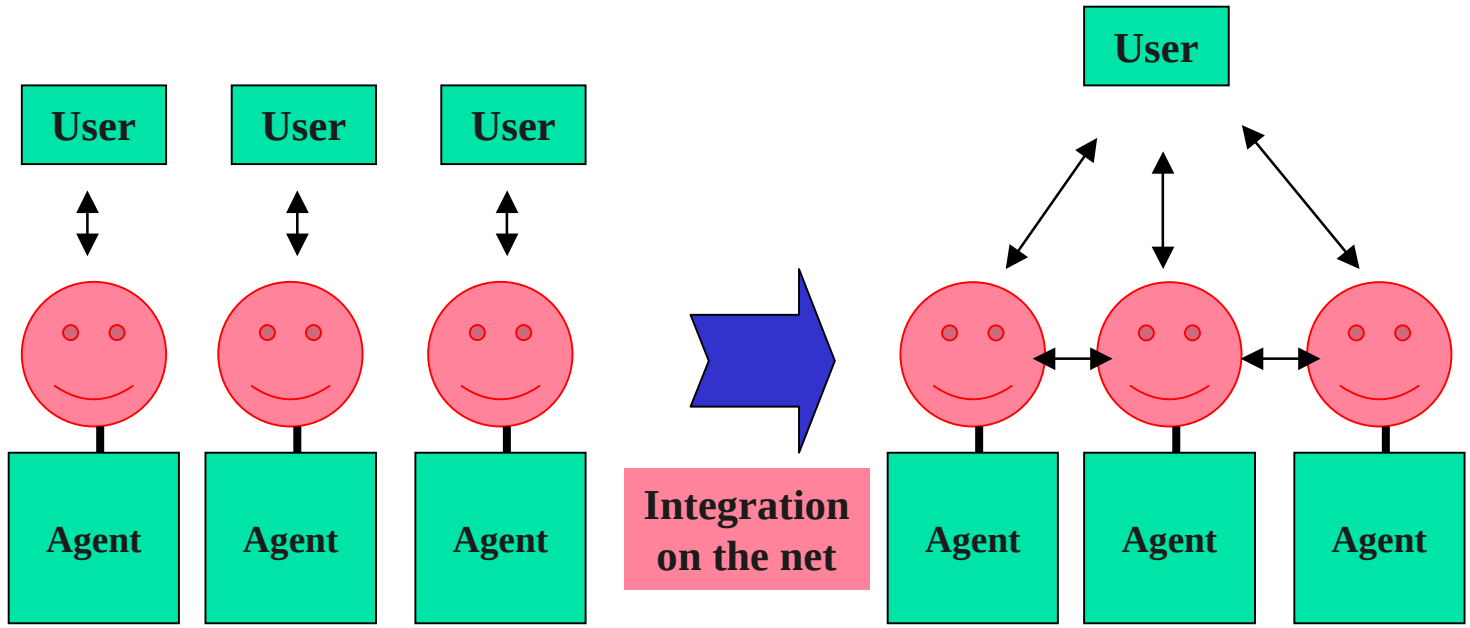
Web Interface

- Web is an open information system.
  - Not only computer experts but also novice users try to get access to the information.
- We need Web access tools everyone can easily use.
  - Web browser, rather a passive tool
  - Character agent (Extempo, Haptek, Virtual Personalities, Artificial Life, etc.) enhances a Web browser and provides an active and user friendly interface for Web access.

Character Business in Japan

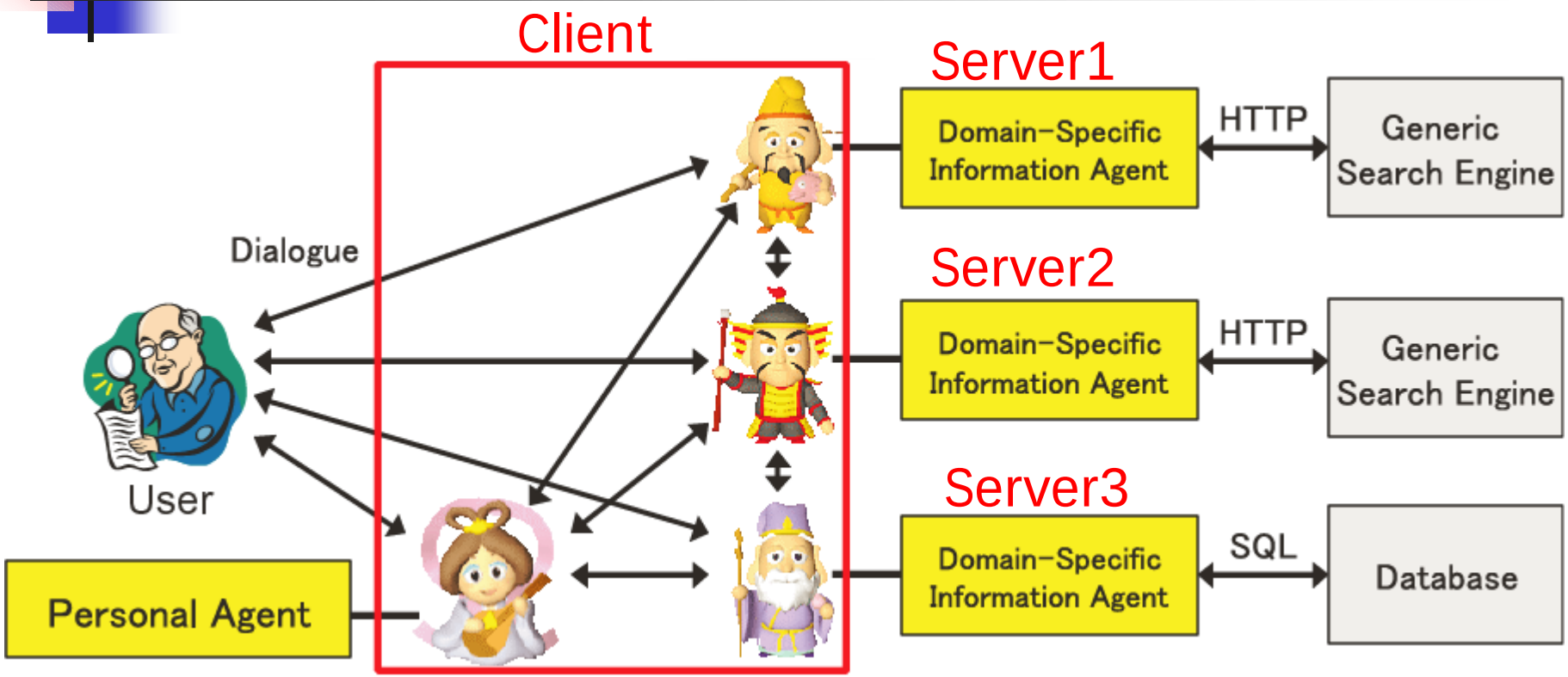
- Annual sales of Pokemon goods reach $4 billion in Japan and $2 billion overseas.
- We have many other characters that make a big profit.
- IT is expected to enhance the business.

From Single Character to Multiple Characters?



- We would like to provide a platform for Web integration through integrating character-agents.

Multiple Character-Agents Interface



Venus&Mars: A Cooperative Recipe Search Engine

Nickname	Pekko	Kon-san	Cho-san
Type	Personal Agent	Information Agent	Information Agent
Function	Chatting with the user. Learning the user's preference.	Searching the Web for cooking recipe pages.	Providing comments about combination of cooking ingredients and health.
Knowledge	User's profile	Keywords about recipes, ingredients, and seasoning.	Comments about cooking ingredients and health.

Recommendation Battlers: A Competitive Restaurant Recommendation System

- Each of two agents competitively recommends restaurants from individual information source standing on its own viewpoint.

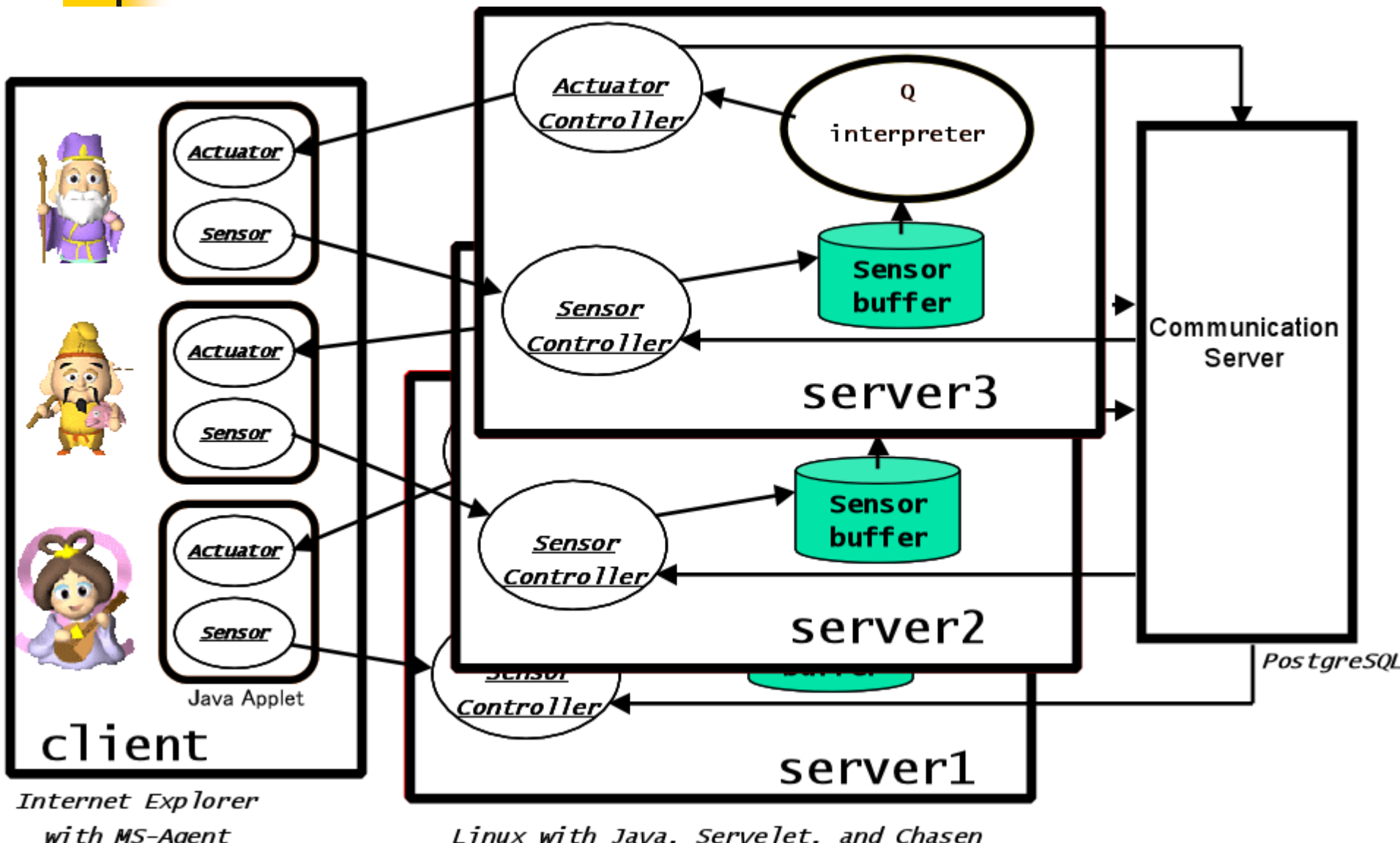
Yahoo! Gourmet Agent

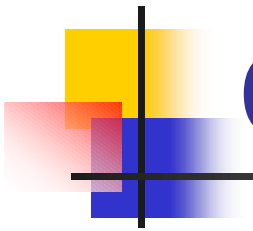
Kansai Walker Agent

Advantages of Multiple Character-Agents Interface

- It provides an interactive and user friendly interface for Web integration.
- It shows the process of Web integration to the user.
- It allows the user to change the team of agents or the behavior of agent.

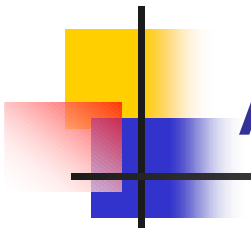
Implementation





Conclusion

- MCI provides a unique approach for building self-made Web integration systems.
- MCI can be viewed as a precursor of next-generation Web integration system.
- We still need to continue to work for
  - Conversation ability with the human user
  - Collaboration ability with other agents
  - Presentation ability to the human user
  - Common platform on the Internet



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