The e-commerce experiment in the Personal agent-oriented virtual society “PAW^2”, and its evaluation

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In the real world, real things are sold.

- Walkman
- AIBO
- HandyCam
- VAIO...
Is it possible to sell "pure virtual object" (which is completely unrelated in real world)?

In this experiment, "pure virtual object" is these bitmaps.
Hypothesis

Hypothesis: Even if it is “pure virtual object”, we can sell it by putting meaning within a particular context?

The actual proof experiment was conducted based on the hypothesis from the virtual social contents “PAW^2” in the Internet.

The history of a network service is still shallow. In addition, it does not fully inquire about the accounting method of service or contents in the network service.

- It becomes more important feature still.
Virtual Society Project

1995-

The research project about the shared virtual society over the Internet.

Basic System:
VRML97+Java+
multi-user extension

Collaborative Shared Virtual Environment
- Shared Avatar, Shared Object, Shared World
What's PAW (Personal Agent World)?

**3D Multi-user Shared World over the Internet**

- **Basic design concept:**
  - Link between virtual world and real world
    - Introduction of personal agent
    - The world of feeling the wrench of parting
  - The world of changing dynamically
    - Environmental change according to time (Change of a season and day and night, shop...)
  - Shared experience
    - Shared experience though game and event
      - Construction of a sense of belonging
What’s PAW (Personal Agent World)?

Pet (Personal Agent) and its owner (user)
- Pet remembers and helps the owner.
- Pet can communicate and play a simple game with the owner.
- Pet is alive in PAW for 24 hour/day
- E-mail from pet (Information: sickness, Lonesomeness…)
- Pet always walks around the user

Economic system (Virtual money, Shop)
- Virtual money: polygo
- Shop: pet food, accessory and items

Four seasons and sense of time

Event hosting
- Sowing of spring (A flower blooms in summer.)
- Beckoning cat, Dharma practice…

Four seasons in PAW
Current PAW^2’s user profile
(About 2 years later from Service start)

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<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Registered users</td>
<td>About 120,000 users</td>
</tr>
<tr>
<td>New users/day</td>
<td>150〜200 users</td>
</tr>
<tr>
<td>Daily Access</td>
<td>Max 8,708 accesses (6〜7000)</td>
</tr>
<tr>
<td>Unique user/day</td>
<td>Max 2,571 users (Ave.2000 users)</td>
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<tr>
<td></td>
<td>8,471 user/month</td>
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<tr>
<td>Simultaneous access</td>
<td>Max 632 users (Ave.400〜500 users)</td>
</tr>
<tr>
<td>Mean length of stay</td>
<td>1.5 hour/day</td>
</tr>
<tr>
<td>Access times/month</td>
<td>7 times</td>
</tr>
</tbody>
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The “place” is created on the Internet.
E-commerce Experiment

- Item sale (100yen~300yen/item)
  - Item: 32x32-dot bitmap data
- Rental meeting room (300yen for 2 weeks)
  - 20 persons can talk simultaneously and their voice cannot be heard outside.

About 2 months
This corresponds in two years in PAW.

The number of registration users in the term: 80,019 users

We used So-net’s Smash system to collect money via Web page.
Context of each items

- **Item sales**
  - Event Item
  - Function Item
  - Accessory
  - Flower

Hereafter, what kind of context was added to each item is described.
The item which adds new function to agent

- Strange Canned food
  Function to change agent’s color
- So-net hat
  Fortune-telling function
- Digital Wooden clogs
  Calculator function

Change Color!
Which color?
Red!
I became red.

Birthday?
Today’s score is 85.
Divine, please!

So-net hat
Accessory

Accessories attached to avatar or agent.

By using them with a (existing) function which changes avatar’s color, it will become like the right figures (so-called “Costume play”)

Example of accessory
Event items

The event (mini-game) is held periodically so that a user may not be bored or user’s interest may not be lost.

Magic Lamp (by Beckoning Cat.)
- Beckoning cat will appear in PAW’s summer.
  - When user clicks it, it will run away...
  - “Come here!”
  - The cat will give the lamp at the 30th times.
- Effect: if had, agent will not become sick.

Guardian Jizo
- When user clicks it, it will say “You need practice!”
- and then it will force the user to fly to somewhere in PAW.
- User can get it at the 100th times.
- Effect: If had, user can get the item which was not able to be gathered until now.
Flower items

- Spring event
- In PAW, if it becomes in spring, the seed of a flower can be bought in a store and planted.
- In summer, the flower blooms.

- A seed is sown about 45000-50000 pieces every year, and 400-500 flower blooms. (1/100)

Tulip

Morning glory
Sales menu

Item sales

- **Event items** (2 kinds)
  - Price: 300 yen
  - The item which is hard to get in the event of PAW and has function.

- **Function items** (7 kinds)
  - Price: 300 yen
  - The item which can add a function to an agent

- **Accessory** (26 kinds)
  - Price: 100 yen
  - Accessories attached to avatar or an agent

- **Flower items** (6 kinds)
  - Price: 100 yen
  - The item which can get in the event of PAW
Experimental Results

The number of sale
- Total 7,616 items (104 item/day, 9.2 item/user)

Total sales amount
- Total: 1,145,800yen (15,696yen/day, 1,393yen/user)
- Max: 51,100yen

The number of buyers
- Total 1,958user (26.8user/day), 832user (unique user)
- More than 10% of the active user
  - Registered users (80,019 users), Active user (8000 users)
The accessories of an avatar and the functional addition to an agent had an effect in sales.
The best sold item
- Strange Canned Food
  - Function to change agent’s color
  - Adding Function to Agent & Appearance change

Guardian Jizo
- The difficulty of acquisition the item in an event was connected with purchase.
Comparison with digital contents circulation

Results of an investigation about digital contents circulation in Japan


Respondents: 680 users (Effective replies: 655 users)
- The person using digital contents circulation is 27.3%
- A male use ratio is high (especially, 20 years-old male (43.8%) 〜 30 years-old male (45.0%))
- “News flash”, “Software purchase”, “e-mail magazine” are frequently used.

The number of digital contents users

1年間の購入金額

N=179

PAW: 8358 yen
Ave.: 8016 yen

The purchase amount of money for one year

10% PAW N = 8000
Future works

Sales method
- This experiment: Purchase from Web
- Introduction of the new
  “Virtual-Society-oriented” sales method
  - On the spot selling
  - One To One marketing

Payment method
- Since “Smash system” was used, it has been extracted only to the user who can use a credit card.
- There was much voice which desires a cash basis. (20%)

Analysis of user’s purchase behavior
- A life cycle, the selling tendency of an item and correlation
- A share of the business model with a user.
Accounting system about service and contents in a network service, and user’s purchase behavior are evaluated within PAW.

Even if it is “pure virtual object” (which is completely unrelated in real world), it can make a selling like real products by putting context in a “virtual society”.

“Another market” can be created in addition to the real world.

The 21st century is the century to sell
Thank you for your time!