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

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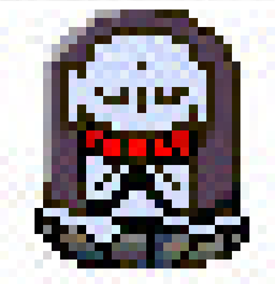
Problem institution

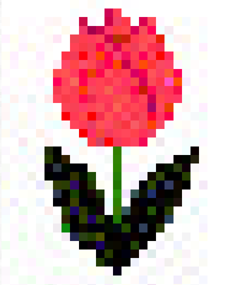
- In the real world, real things are sold.
  - Walkman、AIBO、HandyCam、VAIO…

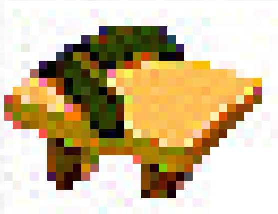
SONY
PS2
SONY
VAIO

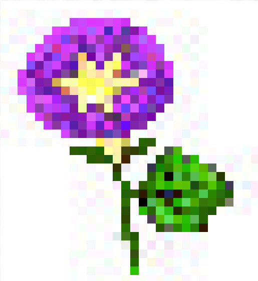
Problem institution

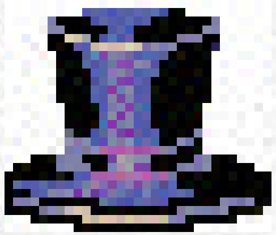
- Is it possible to sell "pure virtual object" (which is completely unrelated in real world) ?

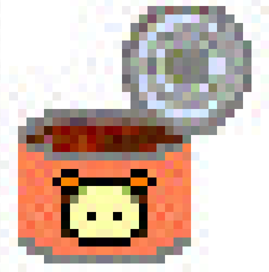

Guardan Jizo

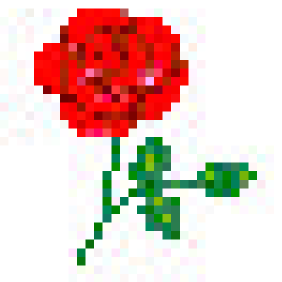

Tulip

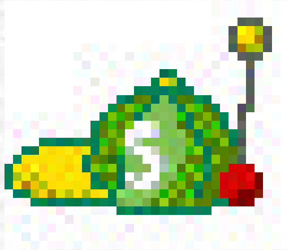

Digital Wooden Clogs

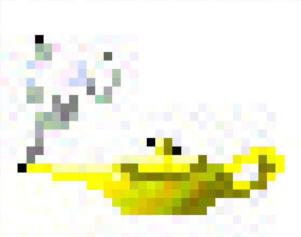

Morning glory


Silk hat


Strange Canned Food


Rose


So-net Hat

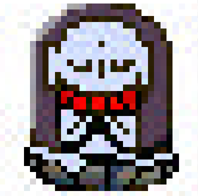

Magic Lamp

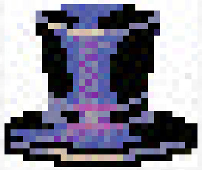
In this experiment, “pure virtual object” is these bitmaps.

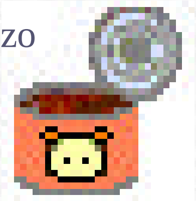
Hypothesis

- 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.


Guardian Jizo


Silk hat

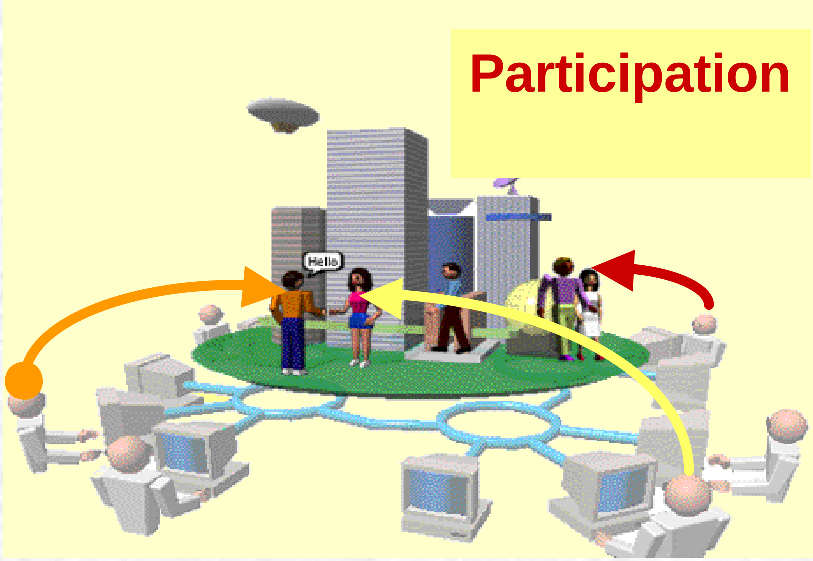

Strange canned food

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

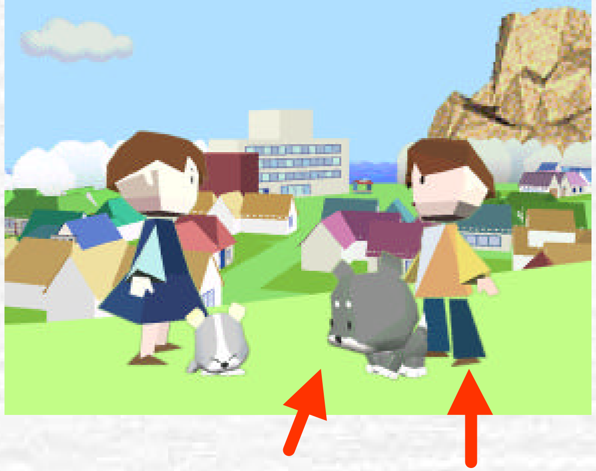
- 1995-
- The research project about the shared virtual society over the Internet.
- Basic System: VRML97+Java+ multi-user extension
- Collaborative Shared Virtual Environment
  - Shared Avatar, Shared Object, Shared World



What’s PAW(Personal Agent World)?

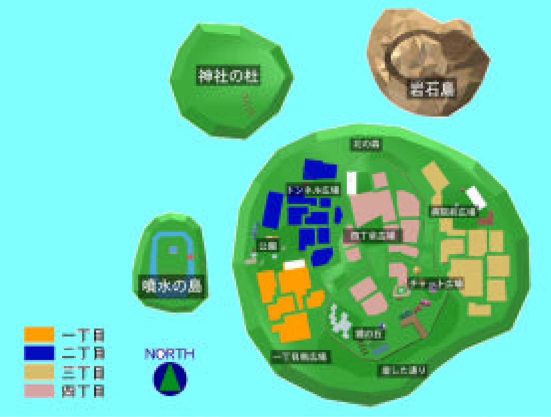
3D Multi-user Shared World over the Internet

- 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



Personal Agent Internet user

PAW world (Bird's-eye view)

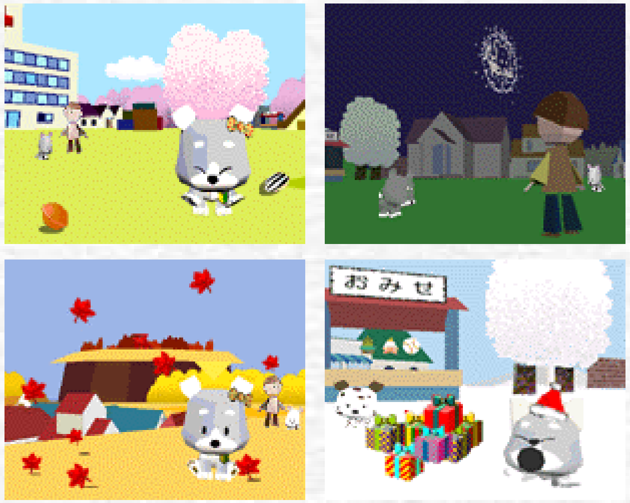


What's PAW(Personal Agent World)?

- 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

I 'm glad for you to come
et's play game.
We will hold an event!
I miss you.

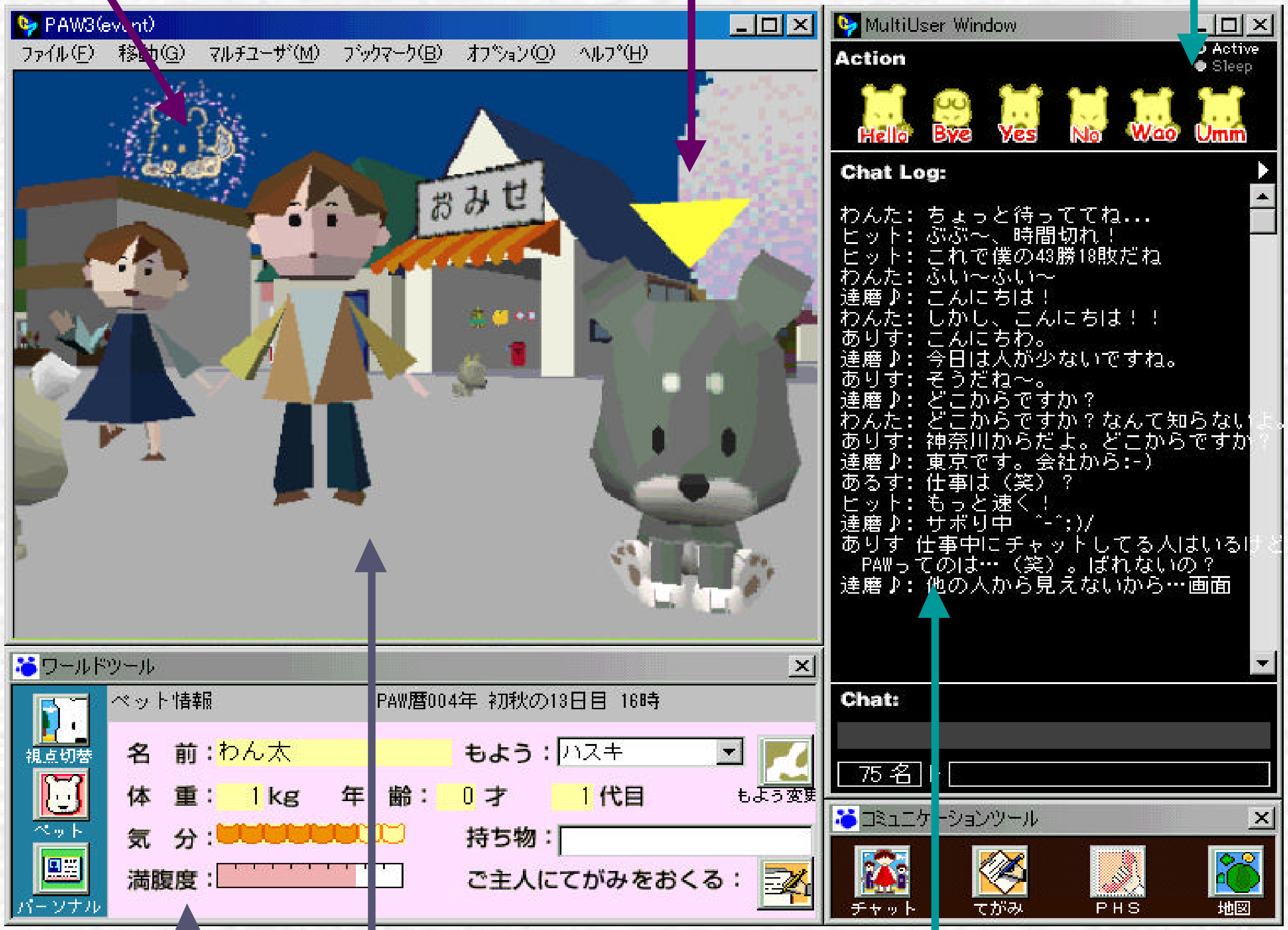
- Economic system (Virtual money、Shop)
  - Virtual money：*polygo*
  - Shop :pet food, accessory and items
- Four seasons and sense of time
- Event hosting
  - Sowing of spring (A flower blooms in summer.)
  - Beckoning cat, Dharma practice…



Four seasons in PAW

Screenshot of PAW

Avatar **Personal Agent** **Action Panel**


PAW3(event)
ファイル(F) 移動(G) マルチユーザ(M) ブックマーク(B) オプション(O) ヘルプ(H)
おみせ
MultiUser Window
Action
Active
Sleep
Hello
Bye
Yes
No
Wao
Umm
Chat Log:
Chat:
75 名
ワールドツール
視点切替
ペット
パーソナル
もよう変更
コミュニケーションツール
チャット
てがみ
PHS
地図

わんた: ちょっと待っててね...
ヒット: ぶぶ〜、時間切れ！
ヒット: これで僕の43勝18敗だね
わんた: ふい〜ふい〜
達磨♪: こんにちは！
わんた: しかし、こんにちは！！
ありす: こんにちわ。
達磨♪: 今日は人が少ないですね。
ありす: そうだね〜。
達磨♪: どこからですか？
わんた: どこからですか？なんて知らないよ。
ありす: 神奈川からだよ。どこからですか？
達磨♪: 東京です。会社から:-)
あるす: 仕事は（笑）？
ヒット: もっと速く！
達磨♪: サボり中 ^-^;)/
ありす 仕事中にチャットしてる人はいるけど
PAWってのは…（笑）。ばれないの？
達磨♪: 他の人から見えないから…画面

ペット情報 PAW暦004年 初秋の13日目 16時

名 前：わん太
もよう：ハスキ
体 重：1 kg
年 齢：0 才
1 代目
気 分：
持ち物：
満腹度：
ご主人にてがみをおくる：

Control Panel **View Window** **Multiuser Window**

Current PAW^2's user profile

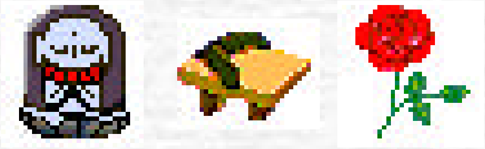
(About 2 years later from Service start)

Registered users	About 120,000 users
New users/day	150～200 users
Daily Access	Max 8,708 accesses (6～7000)
Unique user/day	Max 2,571users (Ave.2000users) 8,471 user/month
Simultaneous access	Max 632 users (Ave.400～500users)
Mean length of stay	1.5 hour/day
Access times/month	7 times

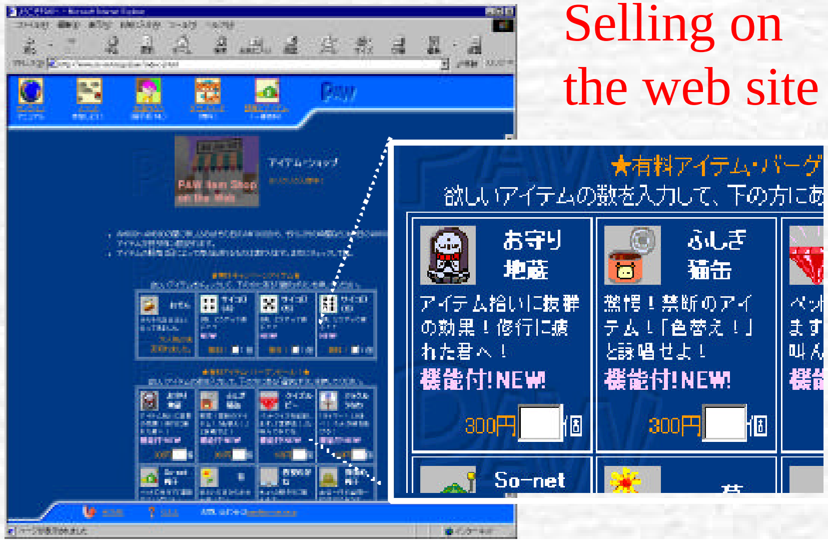
→The "place" is created on the Internet.

E-commerce Experiment

- Accounting to the service in a network service.
  - **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.



- Investigation term :5 Sept '99～20 Nov. '99 (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.



★有料アイテム・バーゲ

欲しいアイテムの数を入力して、下の方にあ

お守り地蔵

アイテム拾いに抜群の効果！修行に疲れた君へ！

機能付!NEW!

300円 ☐ 個

ふしぎ猫缶

驚愕！禁断のアイテム！「色替え！」と詠唱せよ！

機能付!NEW!

300円 ☐ 個

So-net

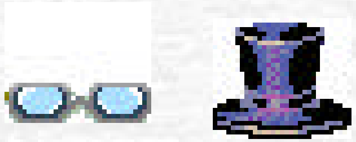
Selling on the web site

Context of each items

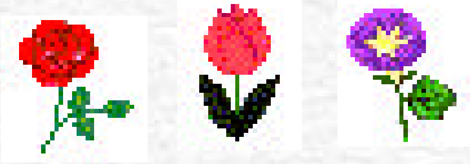
- **Item sales**
  - **Event Item**

  - **Function Item**

  - **Accessory**



  - **Flower**



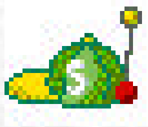
- Hereafter, what kind of context was added to each item is described.

Function items

- The item which adds new function to agent

  - Strange Canned food

    Function to change agent's color



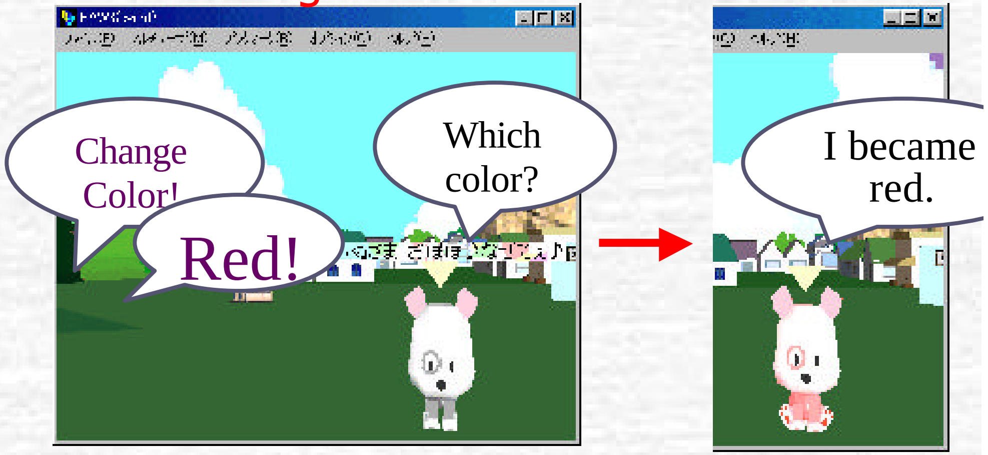
  - So-net hat

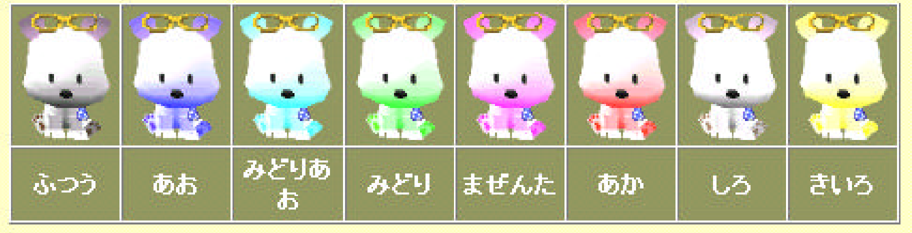
    Fortune-telling function

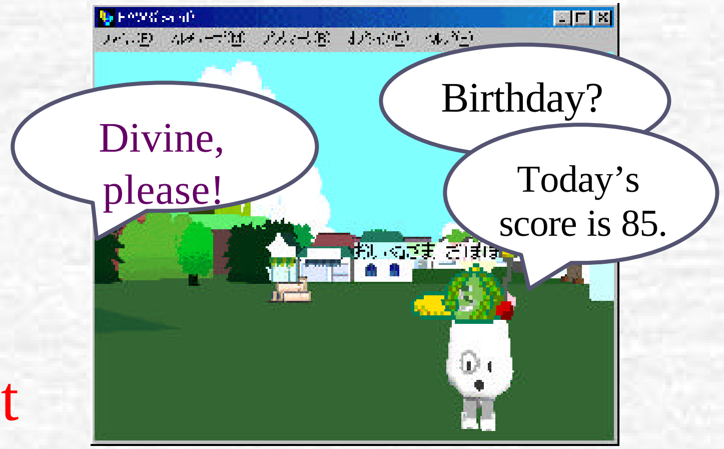
  - Digital Wooden clogs

    Calculator function

Strange Canned food


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

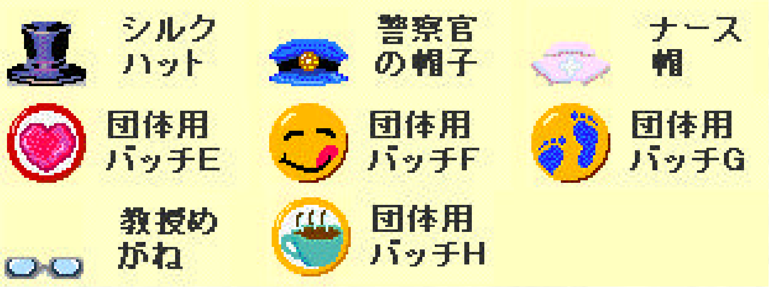

ふつう
あお
みどりあお
みどり
まぜんた
あか
しろ
きいろ


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

So-net hat

Accessory

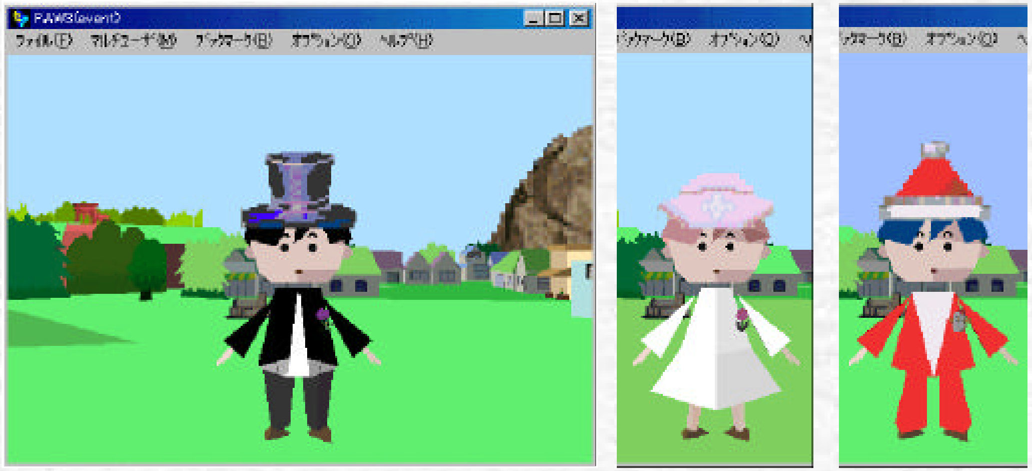
- Accessories attached to avatar or agent.


シルクハット
警察官の帽子
ナース帽
団体用バッチE
団体用バッチF
団体用バッチG
教授めがね
団体用バッチH

Example of accessory

Accessory
いぬきち

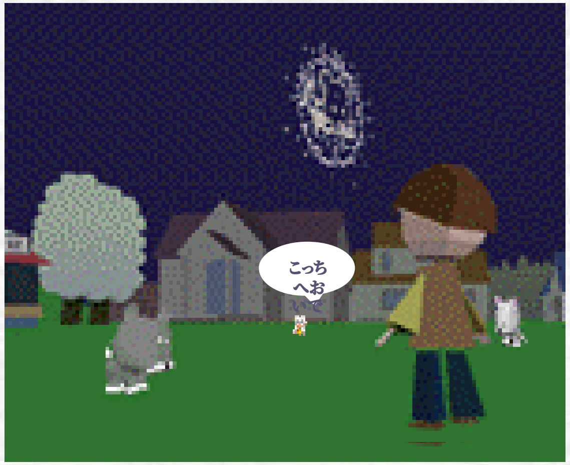
- By using them with a (existing) function which changes avatar's color, it will become like the right figures (so-called "Costume play")

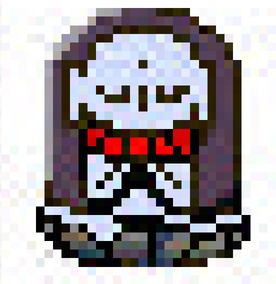

PAW3(event)
ファイル(F) マルチユーザ(M) ブックマーク(B) オプション(O) ヘルプ(H)

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.

Magic Lamp

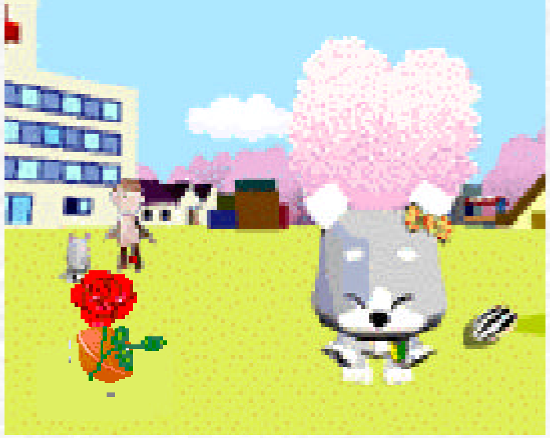




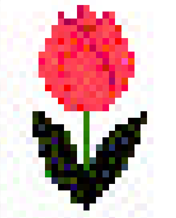
Guardian Jizo

Flower items

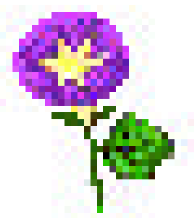
- Flower items
  - Spring event
  - In PAW, if it becomes in spring, the seed of a flower can be bought in a store and planted.
  - In summer, the flower blooms.
  - A seed is sown about 45000-50000 pieces every year, and 400-500 flower blooms.(1/100)



Flower items



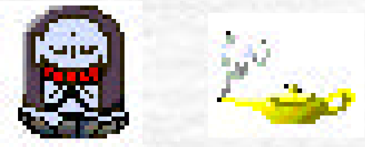
Tulip



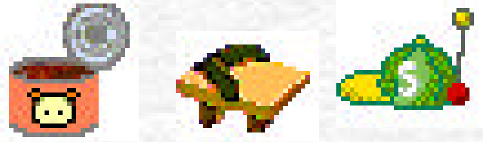
Morning glory

Sales menu

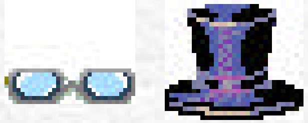
- **Item sales**
  - **Event items(**2 kinds**)**



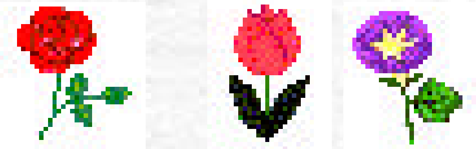
    - Price :300yen
    - The item which is hard to get in the event of PAW and has function.
  - **Function items(**7 kinds**)**



    - Price :300yen
    - The item which can add a function to an agent
  - **Accessory(**26 kinds**)**



    - Price :100yen
    - Accessories attached to avatar or an agent
  - **Flower items(**6 kinds**)**



    - Price:100yen
    - The item which can get in the event of PAW

Experimental Results

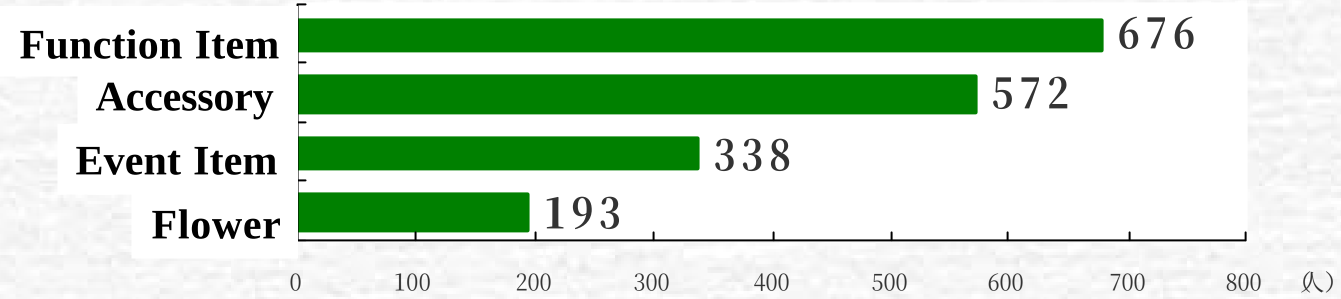
Investigation term and target users

- 5. Sept ‘99～20 Nov. ‘99（About 2months）→PAW’s two years
- Registered users in the term：80,019users

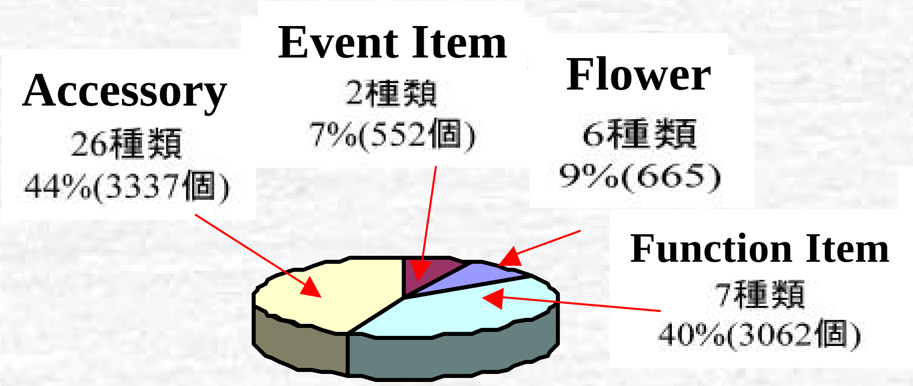
- The number of sale
  - Total 7,616 items (104 item/day, 9.2 item/user）
- Total sales amount
  - Total: 1,145,800yen(15,696yen/day, 1,393yen/user）
  - Max: 51,100yen
- The number of buyers
  - Total 1,958user(26.8user/day), 832user(unique user)
  - More than 10% of the active user
    - Registered users(80,019 users)、Active user(8000users)

Number of buyers, sales and total sales amount

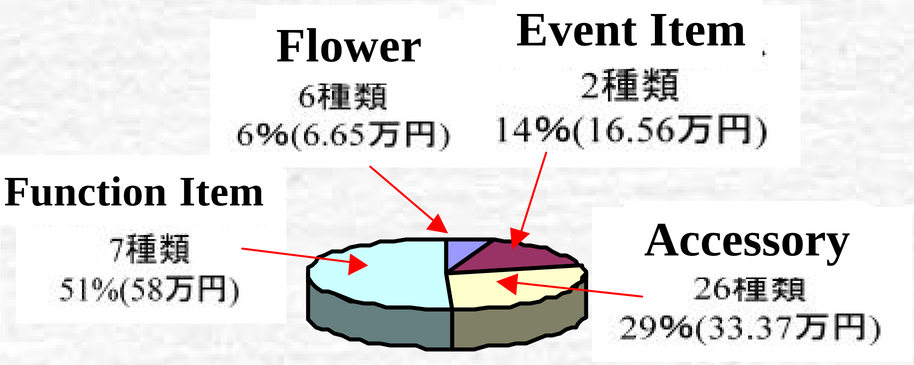
Number of buyers for each item



Sales number

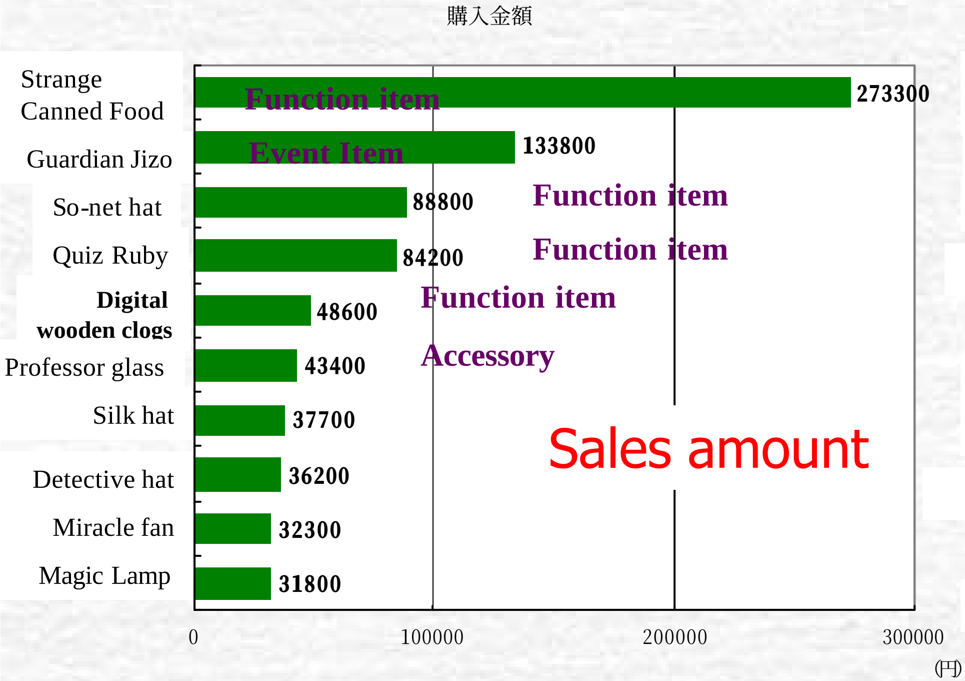


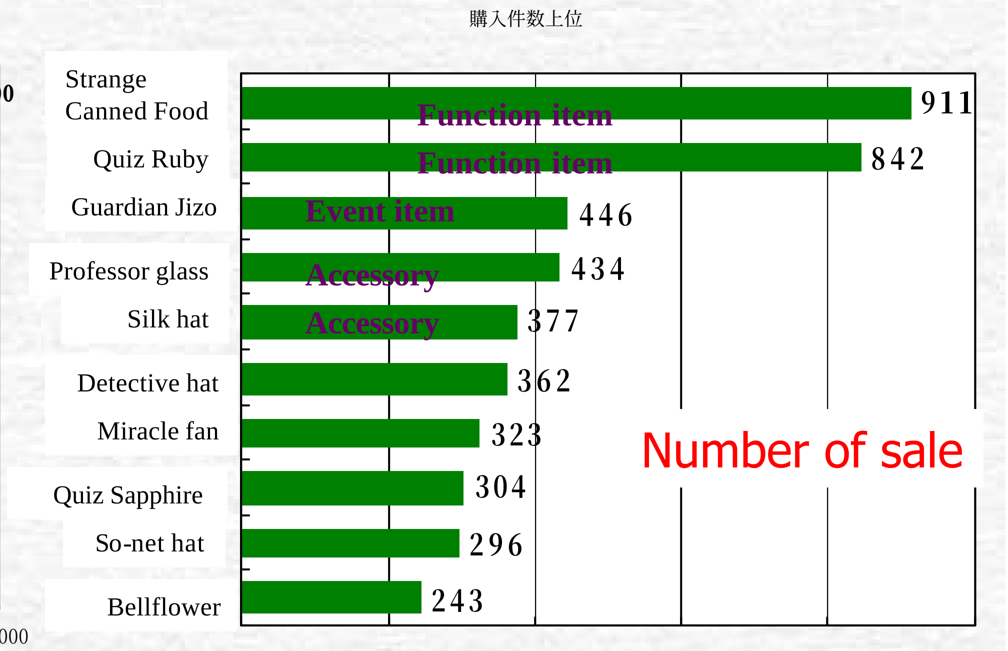
Total sales amount



The accessories of an avatar and the functional addition to an agent had an effect in sales.

Best 10 of total sales amount and sales number





- 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.

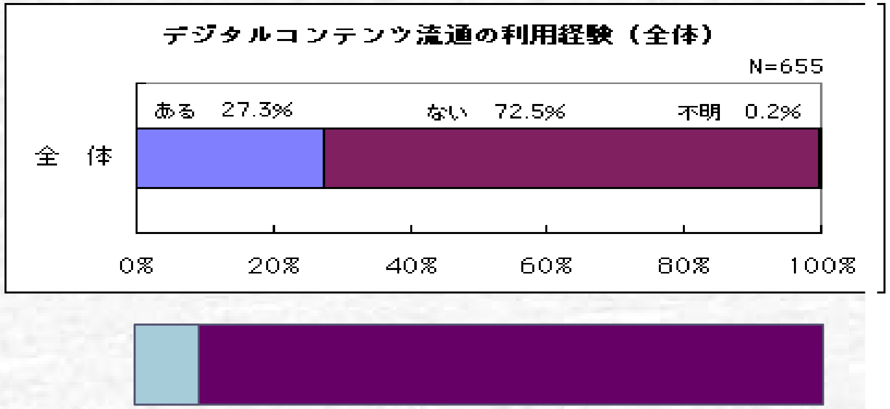
Strange Canned Food

Guardian Jizo

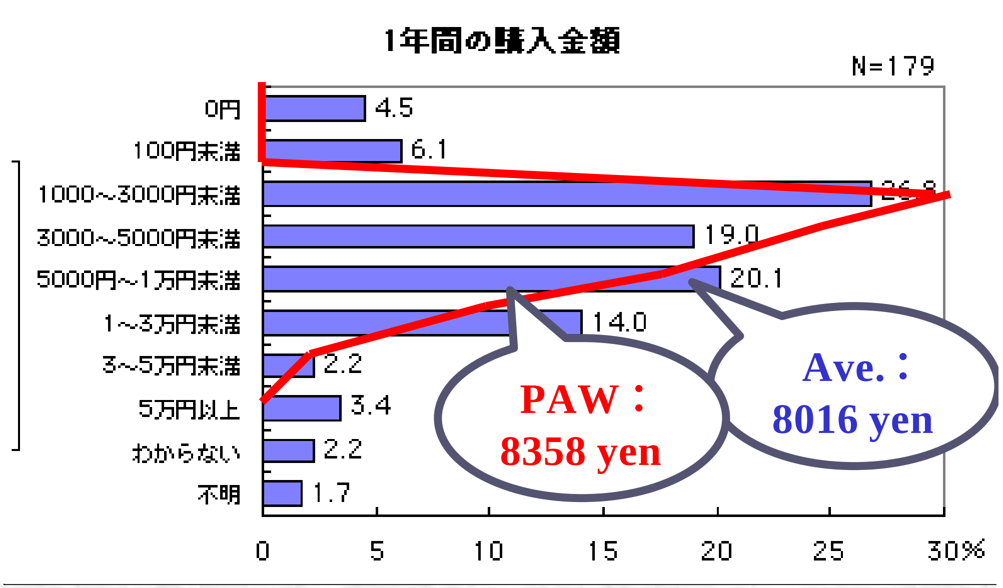
Comparison with digital contents circulation

- **Results of an investigation about digital contents circulation in Japan**
- Investigation term :1. Dec. 97～18. Jan. 98, InfoCom Research Inc.
- Respondents :680users (Effective replies 655users)
  - 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-r

The number of digital contents users



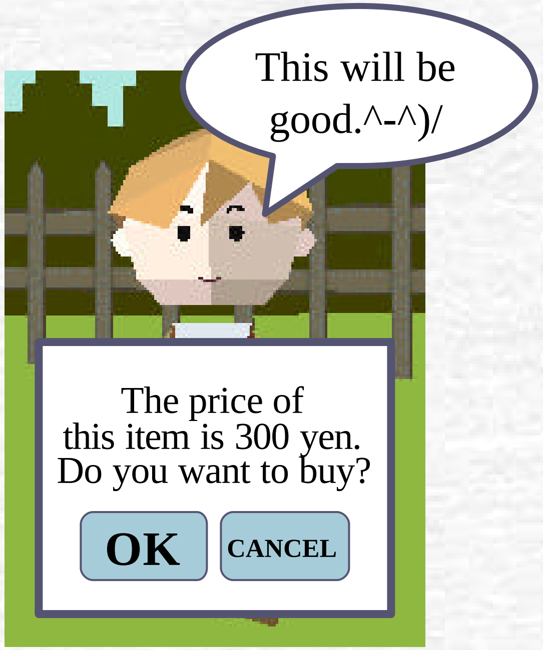
10% PAW N=8000



The purchase amount of money for one year

http://www.commerce.or.jp/minfo/enq/report11/dcon1.html

Future works



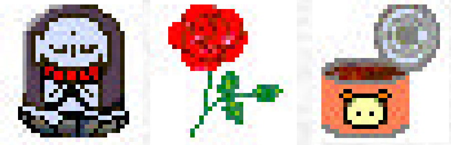
The price of this item is 300 yen. Do you want to buy?

- 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.

Summary

- 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!