General situation of digital serious games in Japan; e-learning in Japan.

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Serious games in Japan: Webinar on 27th Feb 2012 at 2.30-4 p.m.

topics

1. e-learning in Japanese Universities
   - General situation of Universities in Japan
     - Gradual Demographic Change
     - Public and Private Universities
2. General Situation of Digital Serious Games in Japan
   - Definition and Categorization of Serious Games
   - Situation: Gap between Univ. and Game Industry
   - Development of Serious Games
   - Practical Use of Serious Games

Universities in Japan

➢ **General Situation of Universities in Japan**

   ➢<u>780 univ</u>.: National:86, Public:95, **Private:599 (77%)**

      ➢+ 387 junior college   (2011)

   ➢Generally, students enter univ. at <u>18yrs old</u>.

      ➢University Entrance Rates: 54.4%(2009)

   ➢Most rapidly <u>aging country</u>: demographic change

      ➢Longest life expectancy + Declining birth rate

➢ **E-learning at University in 2005**

   ➢ Foreign WBT, LMS ➔ Japanese WBT, LMS

   ➢ National: 31.8%, Public: 0%, Private: 68.2%

      ✓ Competition for the larger share of 18yrs old population

   ➢Campus computing > distance learning

Cooperative learning for digital natives

Univ. in the knowlege society

Professors
Enterprises

Use of ICT in the Knowledge Society

Cooperative Learning knowledge creation >> contribution

students

Use of **learning opportunities**

Significance of cooperative learning

☐ Knowledge sharing among students, professors and other actors

Education for "game generation" and digital natives

➢ Hardware-----   PC, Network and clients

➢ **Software-----** multimedia (inc. **GAME**), social media

☐ Serious Games＝"Games" can be used as an educational tool aiming to solve social problems.

* Definition from developers' point of view

Category of Serious Games

	Use Intention	
	NO	YES

Development Intention

	NO	**1: General games**	**2: Serious Games "Project"**
	YES	**3: Use of serious games in not serious way**	**4: Serious Games**

Fujimoto(2007)

Ordinary Software Companies

1: General Games
- Amusement games for video game consoles etc.

2: Serious Games "Project" -our research object
- Amusement games used for educational purpose

Software Companies + (Professional Advisors)

3: Use of serious games in not serious way
- Without systematic educational process

4: Serious Games --- commitment of Univ.?
- Games which has educational purpose

Category 4: Serious Games

> Concept of "Serious Games" is not widely known in Japan
>> Popularity of "Simulation Game"
>> Simulation------------Simulation Game------------Game
>> Accuracy   Deformation

> Game designers + contribution of professional expertise and knowledge is required to develop serious games

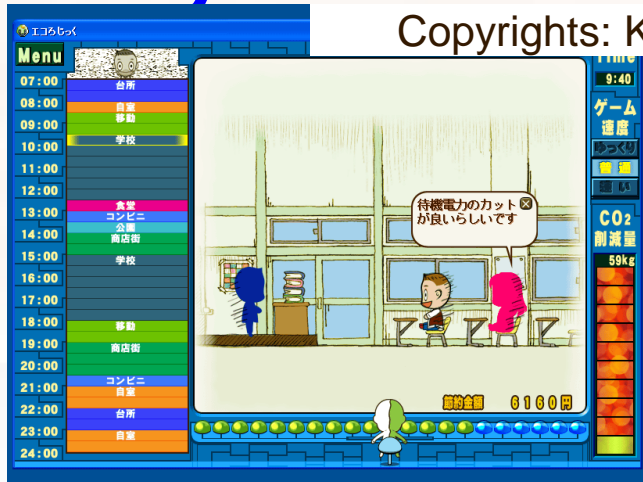| Cultural gap	> Japanese academic culture and Game	> Software companies collaborate with professors
Human Resource Development	> About 20 univ. have faculty related to games	> OJT > Outsourcing > Long tradition of simulation games
	> Vocational schools	

Development of Serious Games

➢ **Kyushu University: Serious Games Project**

Copyrights: Kyushu Univ.

Ecologic: Co$_2$ reduction

collaboration with game software company
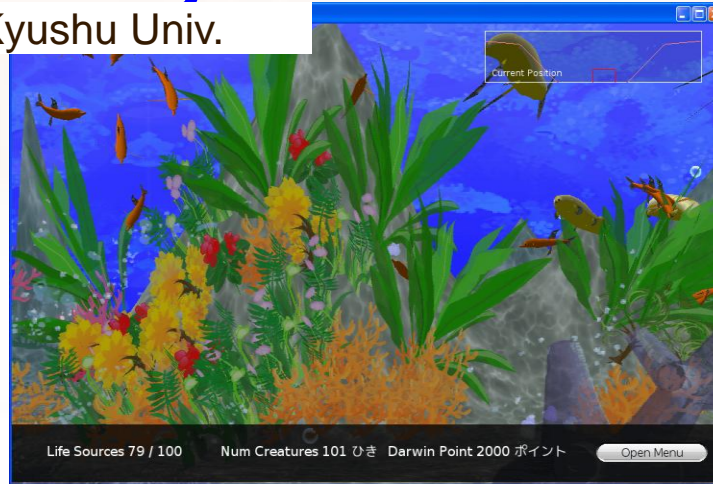
Darwin's Lake: Ecosystem

ecosystem construction and management simulation

➢ Fukuoka Game Industry Promotion Agency

➢ Faculty of Design

Quality of Games?

➢ KEIO Univ. SFC : students develop serious games

➢ Tokyo Univ. + KOEI: Use MMORPG as an educational tool

➢ Seijoh Univ. + Tokai City Chamber of Commerce
: develops a locative game with combination of existing services (Google Maps, QR codes, facebook, YouTube etc.)

Category 4: Games produced by MoF

Q. Tax is said to be a membership fee of the society.

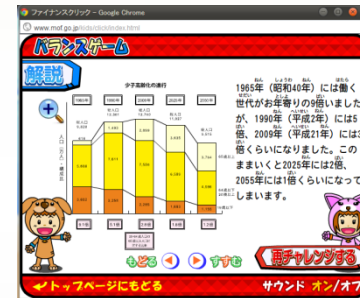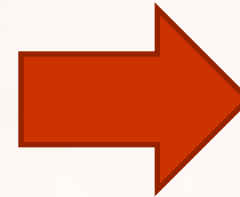## ➤ **Financial Roulette: produced by MoF**

- ➤ Learning tax system by SUGOROKU. Sugoroku is a classical Japanese board game which is similar to the backgammon and/or snake & ladder.

- ➤ It will show some quizzes about the use of tax. If you chose the right answer, you will get public services in your town.

Category 4: Games produced by MoF

➢ **Finance Click: produced by MoF**
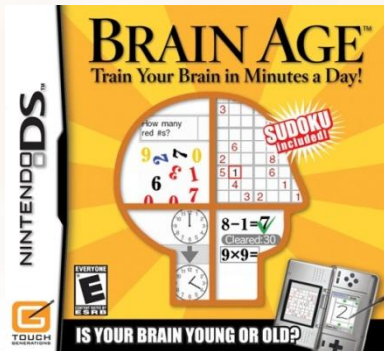
➢ Group of small games for the kids to learn financial situation and financial policy.

➢ After your game is over, some explanations about purpose and intention of the game will be displayed.

Development of Serious Games

Copyrights: Nintendo

✓ **ex.: Brain training games for Nintendo DS**

➢ Brain Age and its series sold 18 million copies.

➢ There is negative opinions about the effectiveness Adrian Owen etc (2010) "Putting brain training to the test", *Nature* 465, 775–778.

✓ **Education, Job Training**

✓ **Healthcare, Welfare, Rehabilitation**

We Need more Industry University Cooperation

➢ **Development and Marketing**

➢ Industry has advantage compare to Univ.

➢ Consumers are surrounded by high quality games.

➢ **Measurement of effectiveness**

➢ Industry needs much more long-term research from educational point of view.

Copyrights: NTT East   Copyrights: Nintendo

➢ **E-sports for elderly people to maintain their health.**

  ➢ iPad, balance Wii board, Kinect --- control with motion, simple

➢ **Hiroyuki KAMEDA(2007) points out…**
  "Recently some TV games are also applied to cognitive rehabilitation programs. These games are, however, not designed originally for cognitive rehabilitation, and are neither based upon any functional model of human brain."

Category2 and our research interest

➢ **How to obtain Comprehensive Knowledge.**

  ➢ Understanding of the relationship among the lectures are not good enough….

  ➢ Each lectures are isolated in their understanding….

⬇

☐ **Needs an opportunity to integrate each factor taught in the courses**

➢ **Can you use "your expertise" in real case?**

  ➢ **Students** and **employees** do not have much opportunities to use their idea in safe way.

⬇

☐ **Needs for the opportunity to test or simulate their idea in safe way.**

☐ **SGP is supplemental programme for face-to-face lectures.**

Category2: Serious Games "Project"

	Use Intention	
Development Intention	NO	YES
NO	1: General games	2: Serious Games "Project"
YES	3: Use of serious games in not serious way	4: Serious Games

☐ We work on Serious Games Project

  ■ Games running on video game consoles:PS2, PSP

☐ **Reasons we choose Category 2**

  ■ **(Few) choices of Serious Games in Japanese**

  ■ **To reduce tangible and intangible costs**

  ■ **Lower the barriers for professional education**

  ■ **Interactive materials, motivation, contexts**

Learning by Playing Serious Games

> **Using digital commercial games as a tool for learning business administration----- serious games workshop**

hospital   city   sports   retailing

☐ **Object: Through the Serious Games,**

   ■ **learning the methodologies and empirical thinking required to solve social problems + self evaluation (ex. competency dictionary)**

   ➡ **workshop for "game generation" and "digital natives"**

☐ Serious Games in Univ.

   ■ **Establishing knowledge**

   ■ **human resource development for variety of industries.**

☐ Serious Game softwares in Japanese Market

- ■ Video Game Consoles: PS, PS2, PS3, PSP, DS
- ■ PC, tablet PC, mobile phone, smartphone

National Business	Regional Development	Companies	Hospitals Manage.
Lay Judge system	Stock Market	School admin.	Professional sports teams

➢ **cf. Seijoh Univ. has**

➢ Faculty of Business Admin. + Teacher training courses
➢ Faculty of Rehabilitation

Examples: A million seller game

☐ "Conveni" is a small supermarket usually opens 24h.

☐ 45000 "conveni"s in Japan for 127 million people

> ***The Convenience Store series*** © **HAMSTER**

☐ Clear given conditions in each scenario.

■ Win the competition with rivals.

■ Increase the population to certain size etc..

The Conveni 3 and Fac. of Business Admin.

store Location, interiors

Corporate Strategy

Distribution

manage Business hours, employment

HRM

PR Advertisement, finance, R&D

Advertising Theory   Accounting   R&D

research Questionnaires, market reports, budget info

Marketing research   Consumer Behavior

Managerial economics   Statistics

Evaluation ☐ Store Reviews etc.

system ☐ Save, load, hi-speed mode

1. **Choose SG + Set goal of their study**

   ➢ Orientation, briefing

2. **Work on SG toward goal**

3. **Presentation and peer review**

   ➢ Debriefing, professors of related lectures attend to the meeting

4. **Revision / kaizen**

Example: Working report

lectures	1st	2nd	3rd	keywords
Accounting	★	★ ★	★	Accounting, capital, profit and loss
Business Administration	★	★	★	Company and capital, role of CEO
Management Accounting	★	★	★ ★ ★	Strategic decision making, long and short term planning
Corporate Strategy	★ ★ ★ ★	★ ★ ★ ★	★ ★ ★ ★	Selection and concentration, vision, business objectives
Management Diagnosis	★ ★	★ ★	★ ★ ★ ★	Management indexes, Financial analysis, profitability
Logistics	★		★	Transportation planning models
Urban Development	★ ★ ★	★ ★	★ ★	Urban planning, distribution of industry
Urban Transport	★	★ ★	★	Public transport, diagram, traffic volume

+ Students report their intention, objectives, results

Conclusion

Development of Serious Games

➤ **Re-definition of Serious Games (Shichibe@Tokyo Univ. Tech)**

➤ Digital game for a certain purpose, such as learning effect, which is observed to be effective by scientific researchers.

* Market oriented definition enables consumers to evaluate effective titles

Practical Use of Serious Games in Higher Education

➤ **Instructional and curriculum design**

➤ Lack of professionals in educational digital contents design

➤ SGP is supplemental programme for face-to-face lectures.

➤ **Discourse: "Using games? It's just a play. Not study"**

➤ Teachers don't evaluate the potential benefit of serious games

➤ **Effect measurement: "evaluation"**

➤ Index used in measuring and evaluating the progress of study through the serious games.>>>competency dictionary?
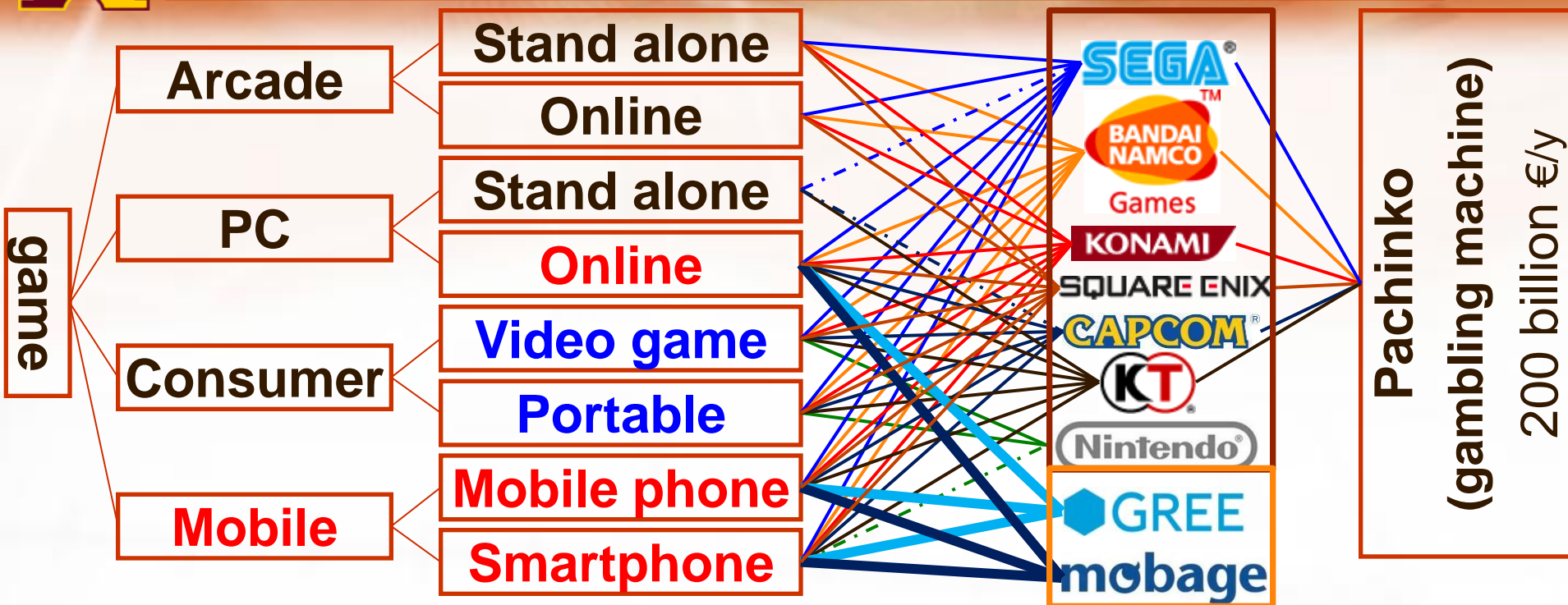
Japanese Game Software Industry for mobilephone/smartphone

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Game Industry in Japan

Arcade
- Stand alone
- Online

PC
- Stand alone
- Online

Consumer
- Video game
- Portable

Mobile
- Mobile phone
- Smartphone

SEGA
BANDAI NAMCO Games
KONAMI
SQUARE ENIX
CAPCOM
KT
Nintendo
GREE
mobage

Pachinko (gambling machine) 200 billion €/y

➢ **Market scale of Arcade, Consumer & PC is shrinking.**

✓ 4.5 bn €/y --------- cf. Europe 9.5 bn €/y, US 12 bn €/y

➢ **Rapid growth of mobile (social) game market**
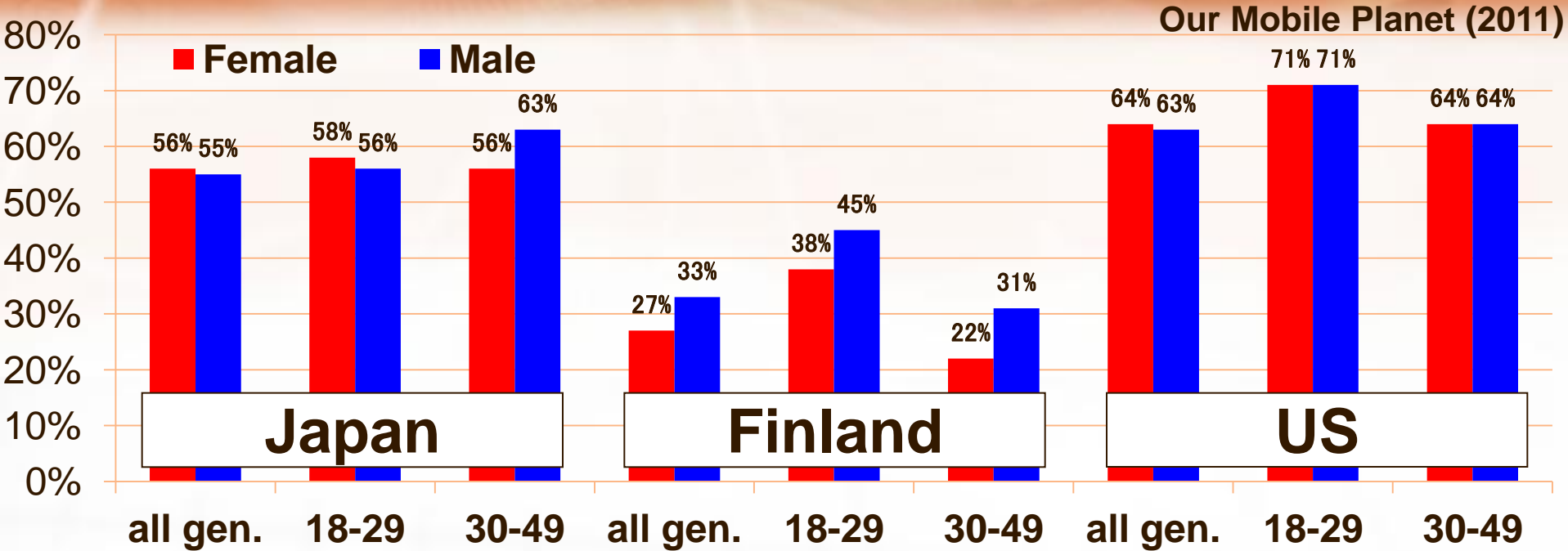
✓ 750 million €/y in 2007 → 2.57 billion €/y in 2011

GREE mobage

➢ **Original title + existing title on SNS platform**

➢ **Free to Play (F2P), microtransaction for items**

Mobile Game Users and their age

- **Female** ■ **Male**

	Japan			Finland			US		
	all gen.	18-29	30-49	all gen.	18-29	30-49	all gen.	18-29	30-49
Female	56%	58%	56%	27%	38%	22%	64%	71%	64%
Male	55%	56%	63%	33%	45%	31%	63%	71%	64%

➤ **Smartphone users in Japan;**-------- our mobile planet research

✓ **they install 45 mobile softwares in average.**

✓ **68% of them use mobile internet at least 4 times a day.**

✓ **45% of them purchase goods with smartphone.**

➤ **Mobile game users are not limited to the young generation**

Rise of post-hardware industry?

Excessive emphasis on hardware and technology development

➢ de-industrialization: EMS + emerging countries

➢ Changes in industry map : Symbian - > Android, iOS + NOKIA-MS, Motorola-Google, Apple

➢ Fall of NOKIA : share 65.5% − >24.3%

R&D	marketing production	Business Results
Investment>Profit	**Investment<Profit**	**Investment⬌Profit**

Science Parks → **Difficulties in the global marketing**

Strength of Finland

Tohda(2007)

R&D	marketing distribution	Business Results

Science Parks → **Easy access to the global market**

iTunes, Android Market, browser games, clouds

Kiitos

➢ **Thank you very much for your attention.**

➢ **For further question, please do not hesitate to contact us** ☺

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