Study of User Acceptance Regarding Secondary Use of Personal Information for Online Services

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Background and Purpose of Study

◆A variety of content and applications due to Internet Technology Development

◆Many personalized applications and services have been developed and provided based on customers' data including purchasing history.

◆It causes problems such as exposing personal data and invasion of privacy through criminal activities, spam and viruses..
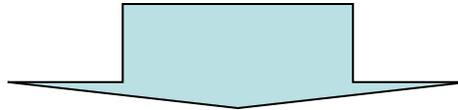
Establishment of an social and economical mechanism to promote the active utilization of personal data with privacy protection.

Multiple Actions for Enhancing Personalization

■ Legal Framework
・Availability of anonimized personal data and limitations
・Prompt remedies (injunctive relief)

Interaction

■ Development of privacy enhanced technology(PET, PPDM)

■ Evolution of diverse and attractive applications

■ Economic & Marketing Evaluation
・Understanding of user preferences for service use and risk perception
・Balancing privacy protection with public welfare

■Transparency of operational procedures
・Short and clear privacy policy
・Improvement of internal procedures transparent to users

Consensus among users (Security, Relief, Trust)

Structural model for analysis

Variables depending on service prototype

Prier permission or visualization levels (j)

H5

Variables depending on serive prototype (j) and subject (i)

Intention for service use (i,j)

Latitude for secondary use of personal information (i,j)

H4-1

H1

Intention for Information disclosure (i,j)

H4-2

H2-3

H2-1

H2-2

Prior perception of subject (i)

Privacy Concern (i)

H3-1

Trust evaluation for providers(i、 j(k))

H3-2

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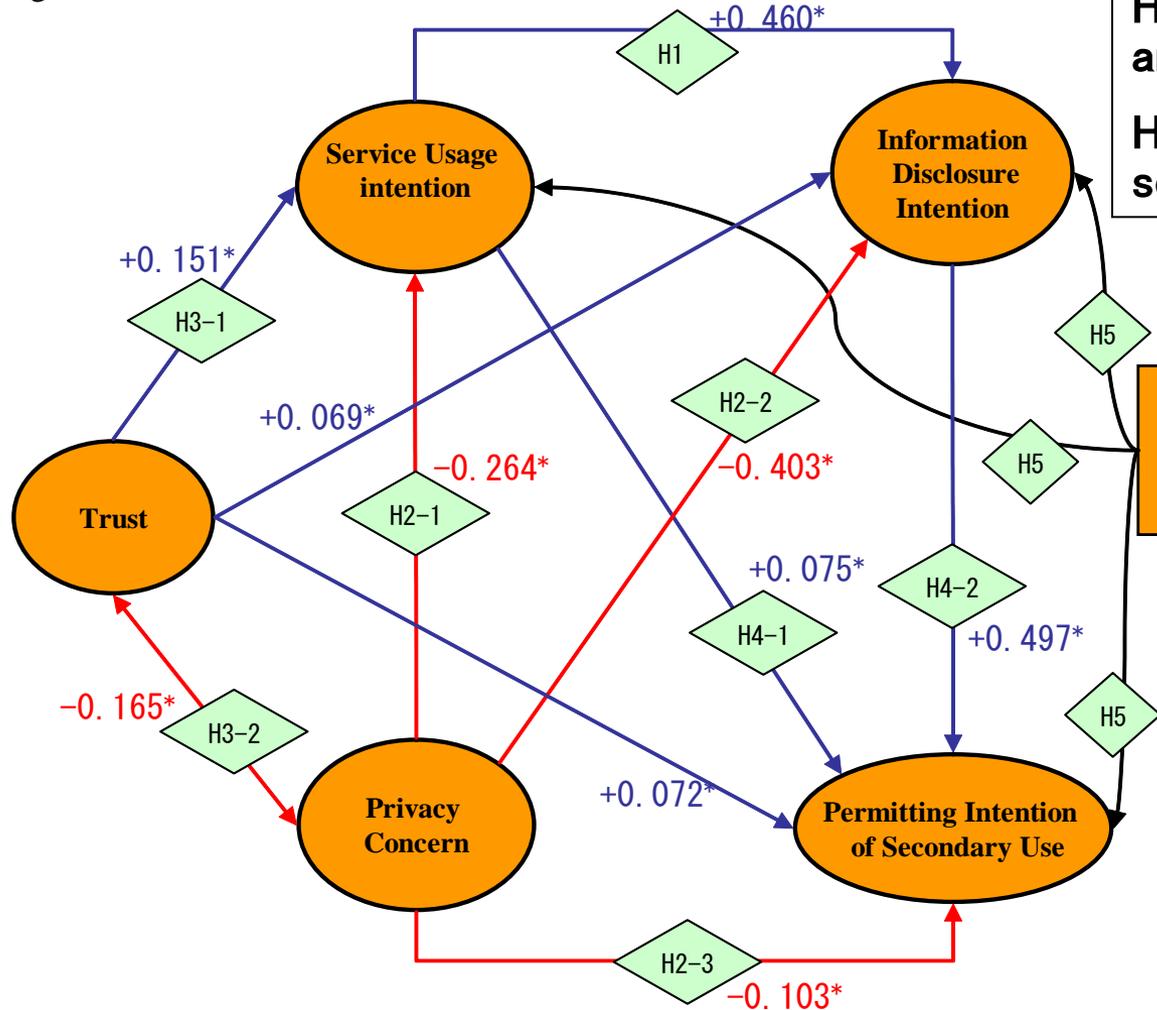
H6: Different coefficient values depending on service prototype

Result by SEM（Structural Equation Model) analysis

■ * ： two-sided p-value of significance test < 5%

H1～H4：Supported

H5：Not supported by basic SEM analysis

H6: No significant difference by service domain

H1 +0 460*

Service Usage intention

Information Disclosure Intention

H3-1 +0. 151*

+0. 069*

H2-2 −0. 403*

H5

Trust

H2-1 −0. 264*

H5

Yes/No of Prior Permission X Level of Visualization

+0. 075*

H4-2

H4-1

+0. 497*

H3-2 −0. 165*

+0. 072*

Privacy Concern

Permitting Intention of Secondary Use

H5

H2-3 −0. 103*

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Chisq(df=6711)  = 27563.543
CFI             = 0.958
RMSEA           = 0.042
SRMR            = 0.050
AIC             = 677808.672
Estimation:     ML
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Result of multiple population analysis for H5

■ * : two-sided p-value of significance test < 5%

Yes/No of Prior Permission X Level of Visualization

H5- 2
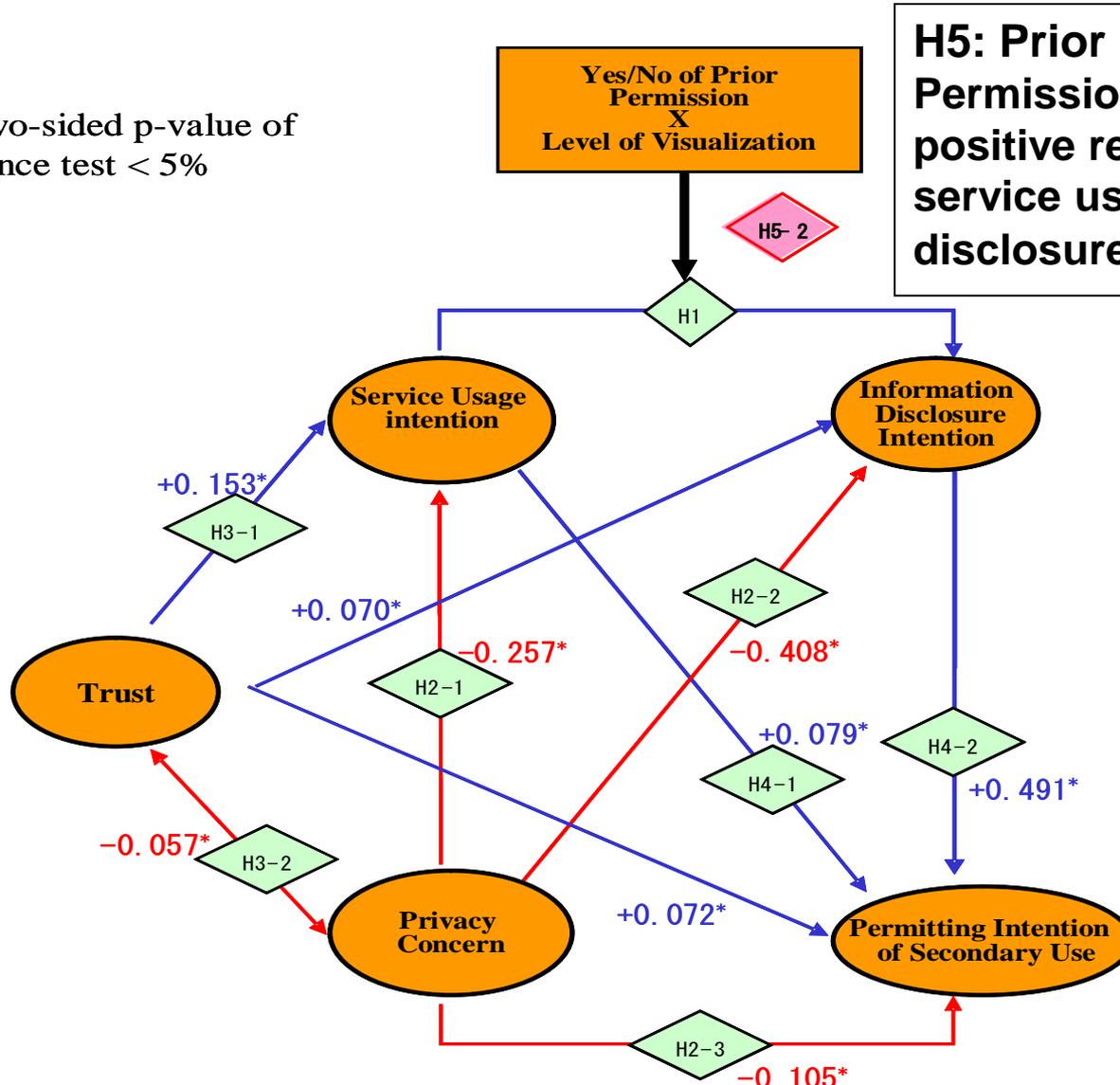
H5: Prior Permission/Visualization affects positive relation between service usage intention and disclosure intention.

H1

Service Usage intention

Information Disclosure Intention

+0. 153*
H3−1

Trust

+0. 070*

−0. 257*
H2−1

H2−2

−0. 408*

+0. 079*
H4−1

H4−2

+0. 491*

−0. 057*
H3−2

Privacy Concern

+0. 072*

Permitting Intention of Secondary Use

H2−3
−0. 105*

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Conclusion and further study

- This study is a first step for constructing structural model for consumers' preferences for online personalization services

- Next step : Evolution and sophistication of this structural model into more dynamic modeling using Bayesian model

- Third step： Implementation in real services and analyzing consumers' preferences on real business and constructing comprehensive models for other business field
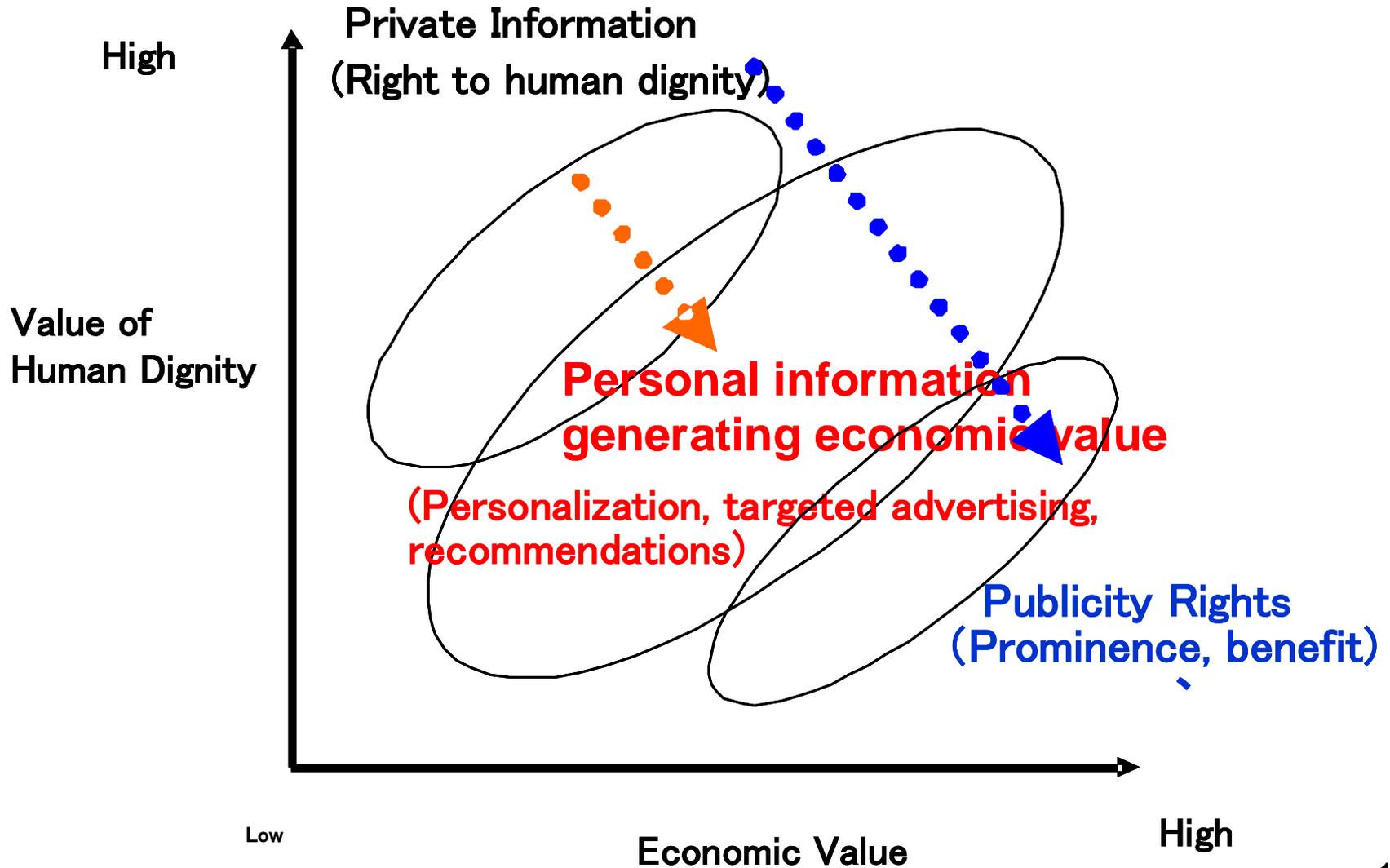
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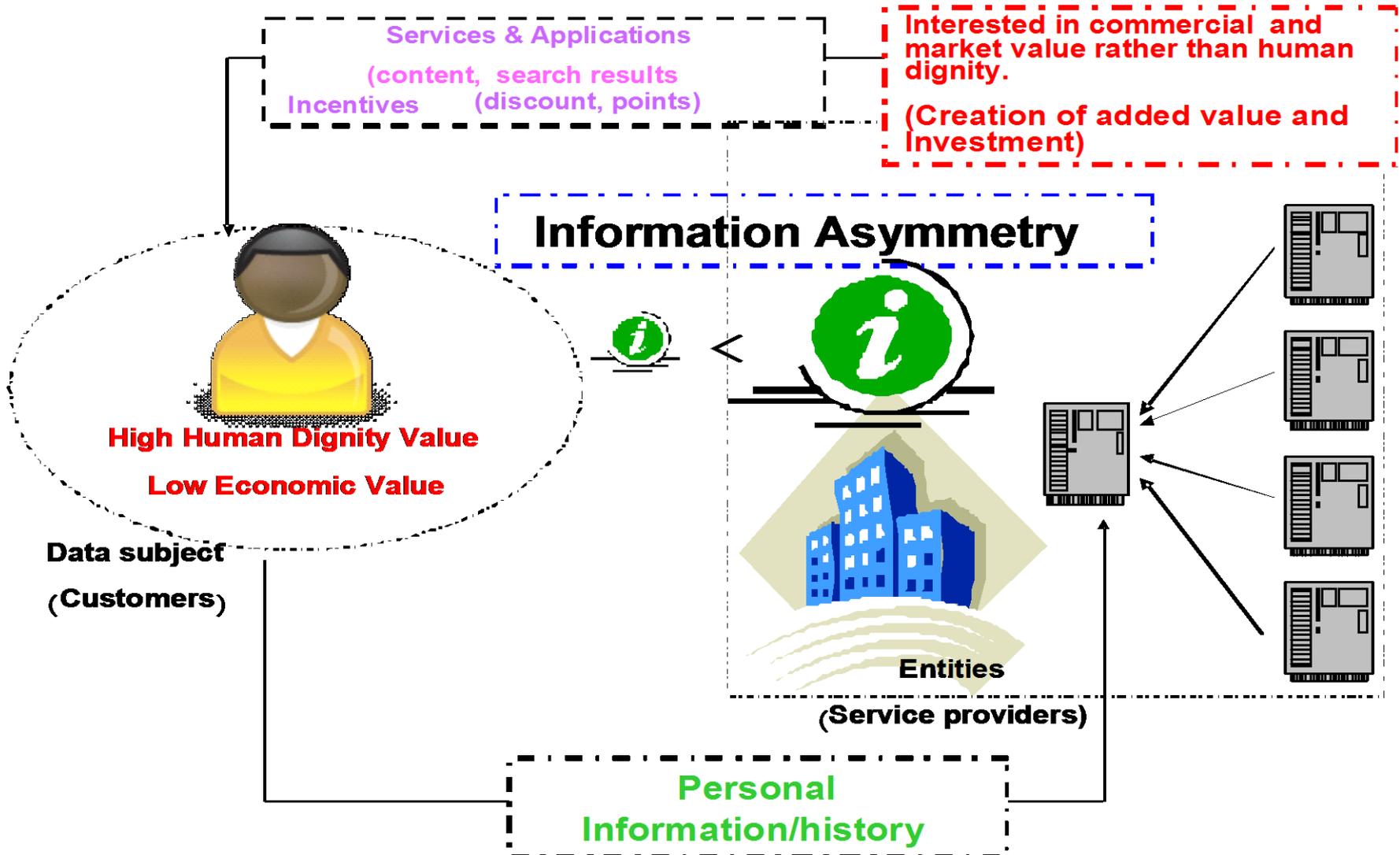# Thank you very much!

Comments and Questions

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Additional Information

From Dignity to Economy

High

Value of Human Dignity

Private Information
（Right to human dignity）

Personal information generating economic value
（Personalization, targeted advertising, recommendations）

Publicity Rights
（Prominence, benefit）

Low

Economic Value

High

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Information Asymmetry

Services & Applications

(content, search results)

Incentives (discount, points)

Interested in commercial and market value rather than human dignity.

(Creation of added value and Investment)

Information Asymmetry

High Human Dignity Value

Low Economic Value

Data subject

(Customers)

Entities

(Service providers)

Personal Information/history

Summary of previous empirical study on consumers' privacy preferences

①Divided into three or more clusters of users In accordance with persal data disclosure levels (Ackerman et al 1999, Hann et al 2002a 、Berendt et al 2005)

②Young generation tolerant and aged generation conservative to disclosure. No gender difference（Ackerman et al 1999, Earp & Basume 2001）

③Cognition of service value and previous experience accelerates the use of services（Ho & Kwok 2003, Chellappa & Sin 2005, Schauipp & Belanger 2005)

④Privacy concern decreases service use and information disclosure（Hann et al 2002b, Ho & Kwok 2003)

⑤Trust of providers increases information disclosure and eases consumers' privacy concern（Chellappa & Sin 2005, Metzger 2006)

⑥Service domain affects consumers' privacy concern（Chellappa & Sin 2005, Wathieu & Friedman 2007)

⑦Privacy policy of providers does not affect improvement of trust nor promotion for disclosure by customers（Berendt & Spiekermann 2005, Metzger 2006)

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Hypotheses for model analysis

- **H1 Increasing levels of service usage intention strengthen intention levels of personal information disclosure.**

- **H2 The level of privacy concern is lower,**

   (2-1) higher levels of service usage intention

   (2-2) higher levels of personal information disclosure

   (2-3) higher acceptability levels of secondary usage services

- **H3 (3-1) Increasing levels of trust towards service provider strengthen levels of service usage intention**

   (3-2) The level of trust towards service provider is negatively related to privacy concern.

- **H4 (1) Increasing levels of service usage intention strengthen acceptability levels of secondary usage services**

   (2) Increasing levels of personal information disclosure strengthen acceptability levels of secondary usage services

- **H5 Increasing levels of prior consent for personal information gathering and visualization and controllability of collected personal information strengthen levels of service usage intention, intention levels of personal information disclosure and acceptability levels of secondary usage services.**

- **H6 Tendency of H1-H4 may be different in accordance with originally presented service domain.**

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Survey Method : 3 step surveys

[Large scale web interview]

- Date: 2009/12/11 to 2009/12/13
- Format: Web questionnaire
- Condition: ：from 15 years old to 69-year-old of the Japanese male and female distributing whole country. The distribution of age and the sex were set to be equal to the population composition ratio.
- The number of subjects: 20,001, (out of 105,176 deliveries)
- 53 questions

[User Interview]

- Date: 2010/1/11
- Format: Personal interviews
- The number of subjects: 12

[Main Survey]

- Date: 2010/1/22 to 2010/1/25
- Format: Web questionnaire
- User-service Allocation: each subject experiences two kinds of services which he is interested in because, by considering the workload of the subjects, answering two services is maximum which takes about 30 to 40 minutes in total.
- Condition: subjects who meet the allocation condition above are selected
- The number of subjects: 4,422, (out of 6,000 deliveries)
- Questions: 17 items related to acceptance and 32 items related acceptance reasons