

Title	Sharing high quality information with friends : Creation of location-based service that enables symbiosis of region
Sub Title	地域の共生を可能にする位置情報サービスの創出
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Abstract	<p>Now, a lot of information is scattered in every part of the world, especially on the Internet. As a result, users don't put more confidence in the information than ever. On the other hand, if the companies and the individuals advertise or provide some services, they also provide the information to their targets inefficiently. So, the purpose of our team's project is to build a business model using Location-Based Services (LBS) and achieve the theme of ALPS this year "Synergy and Symbiosis".</p> <p>At first, our team conducted the interview in some places, for example Shibuya, Odaiba, Akihabara and so on. From the interview, we got the voice of customers and users' wants. After that, we considered how to improve the quality of information. Mainly by using QFD to how customer requirements are satisfied by the solution elements of a designed system, we got the result that smartphones have high level of portability, and they wanted to communicate with their familiar friends and to get the information based on the location. After that, we reached the conclusion that we should get the information not from individuals but from groups in the community because the existing services gets from reliable individuals and feedback services to him/her individually and there is no business model that information is collected focusing on a group and it is changed so that it may be helpful to other companies. We realize to build the model, be named "Rovamy", by the three keys, concretely using the location information, sharing the information and reliance among friends. After that, by using CVCA, we visualized the connections and the flow of money and between stakeholders, for example, IBM Japan, problem solving company, stores, and users in some communities. And we performed financial evaluation and rendered visible by making a prototype. As a result, the predominance over existing services was shown.</p> <p>This paper attempts to present a series of the process of our team's discussion, the result of having used analysis tool, the solution we proposed, the future work and so on.</p>
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Group D

Group D's Theme Proposed by IBM Japan Ltd.

ALPS "Symbiosis and Synergy" theme title:

Creation of location-based service that enables symbiosis of region.

Proposer Organization's Name: IBM Japan, Ltd.

Contact Person's Name: Hiroyuki Goto Contact Person's email: hirogoto@jp.ibm.com

Abstract of your project theme :

Whether the Business model based on LBS consists or not:

- A variety of LBS services are created now. however, there is no one that has succeeded as business model.
- The human and the thing "Symbiosis and Synergy" in a smart city, it is thought that LBS can become a basic infrastructure that support it.
- therefore, the operation scenario of LBS is created as a social infrastructure in the future, We would like to clarify the function performance necessary for LBS corresponding to the scenario, we would like to get the proposal for that.
- The thing that is the proposal to divide into short term/mid/long term is preferable.

Action Plan

Hypothesis

1. Mobile delivery service of coupon and advertising information.
2. Service of safety.
3. Positional game/community system LBS.
4. Platform Services.

The business models design.

1. Range of business activity.
2. Method of acquiring profit.
3. Alliance partner selection.
4. Adjustment with alliance partner.

ALPS Final Report 2011

Group D

Project Title:

Sharing High Quality Information with Friends

Theme:

Creation of Location-Based Service that Enables Symbiosis of Region

Proposer Organization: IBM Japan Ltd.

Proposer Organization's Supporter: Hiroyuki GOTO

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ALPS 2011 Final Report

Sharing high quality information with friends

Group D

Proposed by IBM Japan, Ltd.

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1.Executive Summary

Now, a lot of information is scattered in every part of the world, especially on the Internet. As a result, users don't put more confidence in the information than ever. On the other hand, if the companies and the individuals advertise or provide some services, they also provide the information to their targets inefficiently. So, the purpose of our team's project is to build a business model using Location-Based Services (LBS) and achieve the theme of ALPS this year "Synergy and Symbiosis".

At first, our team conducted the interview in some places, for example Shibuya, Odaiba, Akihabara and so on. From the interview, we got the voice of customers and users' wants. After that, we considered how to improve the quality of information. Mainly by using QFD to how customer requirements are satisfied by the solution elements of a designed system, we got the result that smartphones have high level of portability, and they wanted to communicate with their familiar friends and to get the information based on the location. After that, we reached the conclusion that we should get the information not from individuals but from groups in the community

because the existing services gets from reliable individuals and feedback services to him/her individually and there is no business model that information is collected focusing on a group and it is changed so that it may be helpful to other companies. We realize to build the model, be named "Rovamy", by the three keys, concretely using the location information, sharing the information and reliance among friends. After that, by using CVCA, we visualized the connections and the flow of money and between stakeholders, for example, IBM Japan, problem solving company, stores, and users in some communities. And we performed financial evaluation and rendered visible by making a prototype. As a result, the predominance over existing services was shown.

This paper attempts to present a series of the process of our team's discussion, the result of having used analysis tool, the solution we proposed, the future work and so on.

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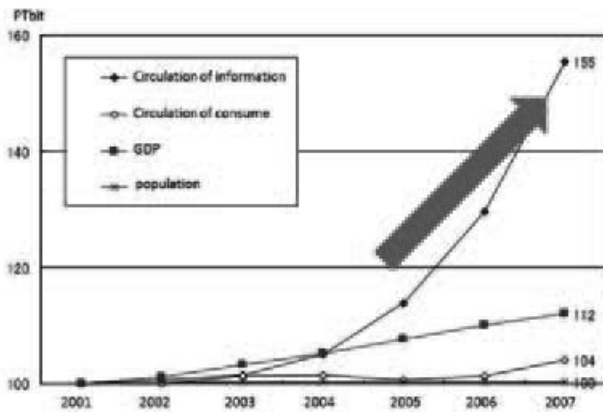
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3.Problem Statement

3.1 Definition of problems

We analyzed stakeholders. As a result, there are important two stakeholders in this case. One is consumer who spends this service. The other is a business company that is a partner of IBM.

The problem of consumer as end users is that the amount of information and consumer confuses this situation. As a result, the reliability of information is declining and then consumers could not believe information.



Reference for Ministry of Public Management [1]

Figure 3.1

It is the fact that while the amount of used information currently is increasing, the amount of information that we can use actually if you see the upper data. Actually, we interviewed to people in Shibuya, Odaiba and Akihabara. Many people said that they confused information because there was a lot of information on the Internet. So they were reluctant to use such information.”

Next, we considered the problem of implementing body. Now they promote to consumers, citizen and so on by using math media. Such promotion is not

efficient and the cost is very high. So this problem.is one of what we have to improve.

3.2 How to solve the problem

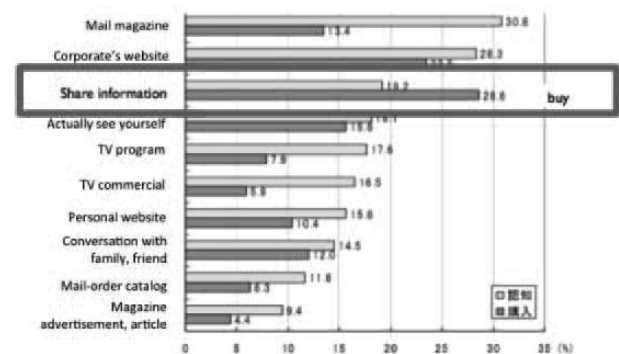
We considered that we should improve the reliability of information to solve two problems by using Information-Technology (IT) that is one of the strongest points of IBM. It is profitable for the customers if the reliability of information increases because they can get only useful information.

It could be the essence for the real estate companies to achieve the cost reduction and to create new strategies by doing the efficient and effective business.

For example, LBS (Location Based Service) and sharing with friends can increase the reliability of information.

There are two reasons to use LBS. One is the fact that real estate, one of the stakeholders for us, has a close relation to location. The other is the increase of the number of the smartphones users that can receive LBS easily. Therefore there are smaller obstacles to use LBS.

Also, sharing information with friends can improve the quality of information according to the result of the commercial research.



Reference for Japan direct marketing association [2]

Figure 3.2

3.3 Competitors and Marketing

The number of information on the Internet is increasing. So, some companies such Amazon Inc., Google Inc. and so on is trying to advertise optimally with seeing the traffic of Web. But above-mentioned service is only in the world of a network, which is a virtual world. So, we considered that the store could provide information that it wanted to let somebody know really by applying analysis that is conducted in the network to an actual realistic store.



Figure 4.1

This is our Mind Map for building new business model of LBS that is our theme.

The branch is divided into five, Stakeholder, Life, Layout, Techniques, and Competitor. Also in it, we considered the service that noted performing conversation and information sharing with friends in their life.

By using Mind Map, we could arrange important information. It is achieving differentiation with Google, or providing the service stuck to the life of people.

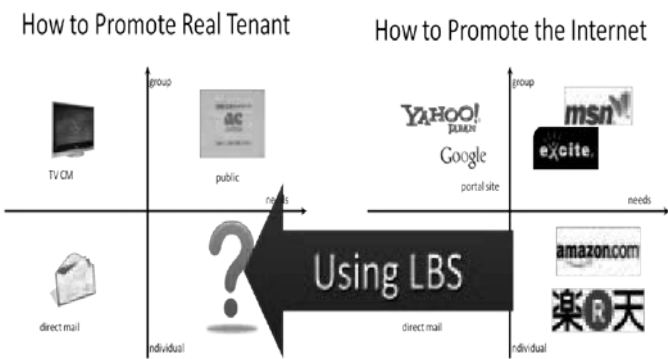


Figure 3.3

4. Analysis and Discussion of ALPS methods

4.1. Mind Map

A Mind Map is a powerful graphical technique for creating and representing associated hierarchical information about a subject. The subject of attention is crystallized in a central image. Main themes radiate from the central image as branches. Branches comprise a key image or keyword. (Topics of lesser importance, successive branches) The branches form a connected nodal structure.

4.2. Project Priority Matrix

The Project Priority Matrix is a powerful consensus building tool that uses a 3-by-3 matrix to clarify the project priority with respect to product performance (features), development cost (cost), and time-to-market (time).

Indicate the highest project priority as "constrained" and indicate the second project priority as "optimize". The remaining project priority is then "accept".

Table 4.2.1

IBM			
	Constrain	Optimize	Accept
Feature	○ ●		
Cost	○	●	
Time	○		●

IBM pushes forward the feature of this system. It is for attaining differentiation with the other company. It does not pay cost because it is a company that provides service. (Mainly offer of a server). It can seldom spend many hours. It will achieve results, before a competitor comes out.

Table 4.2.3

Problem Solving Company			
	Constrain	Optimize	Accept
Feature	○ ●		
Cost	○ ●		
Time	○		●

Problem solving company attaches importance to the feature. They are good if people's demand analyzed from reliance in a group can be known. They want to predict a market at a low price rather than they ask a consultant. Since they just expect a market at a cheap price, time is not thought as important.

Table 4.2.2

Store			
	Constrain	Optimize	Accept
Feature		●	○
Cost	○ ●		
Time	○		●

Store thinks the feature of this system as important. By this system, store gets reliable information. IBM asks for a cheap charge rather than requesting a consultancy firm.

Store will require about 1~5 million yen per affair, if it asks for a market by a consultant. Store tends to hold down to below the charge.

4.3.Scenario Graph

The Scenario Graph is a tool for capturing the possible contexts in which a solution is offered

We should begin by establishing the core competence. First, list the Who, What, When, Where, and User State. Next, indicate links between attributes: linked attributes indicate scenarios that should be supported by the system.

The first Scenario graph

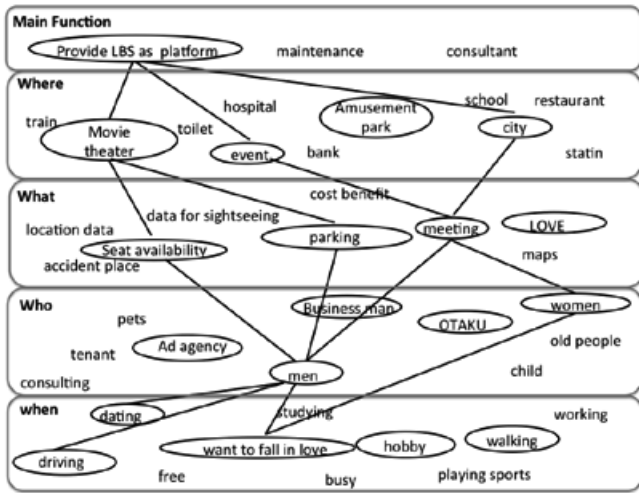


Figure 4.3.1

We carried out brainstorming. We all mentioned what is not likely to have that which is likely to be related to position information, either. And we connected the language related to each language with the line, and made the scenario.

It is a scenario that carries out total navigation of a couple's date. Although a couple wants to see a movie, they lost their way. But, by using LBS, they can see the map of the city to arrive at the movie theater and can reserve the seat.

This service is total navigation system that is different from existing services just connecting point to point.

The last Scenario graph

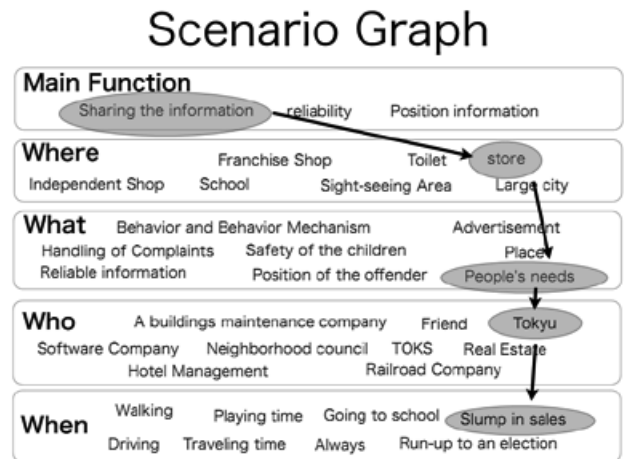


Figure 4.3.2

It is necessary to perform Scenario graph once again as the project progressed.

As for the scenario selected at this time, when Tokyu is holding the slump in sales, IBM solves this problem using location information and information that shared among friends.

However, it has become unexpected to the common scenario. It is especially at first Scenario graph. Scenario graph is a tool that finds a more unexpected scenario.

4.4.CVCA

CVCA (Customer Value Chain Analysis) is a system analysis tool that captures the system stakeholders and their relationships in terms of flows of money, information, material, complaints and so on.

First, we began with a list of system stakeholders. Next, we draw in flow signals between the stakeholders; these include money, information, complaints and product or material.

The first CVCA

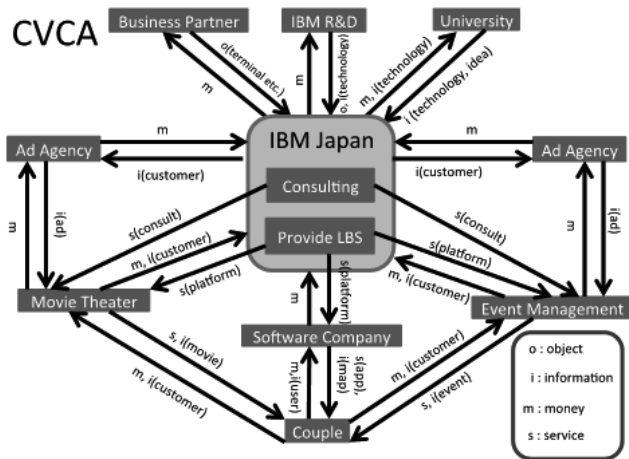


Figure 4.4.1

Because IBM offered a platform, we observed stakeholders connected through IBM.

However, like this CVCA, in order to offer a platform, it is not necessary to become mediation between stakeholders. In CVCA in the last WS, IBM offered the technology of IT.

The last CVCA

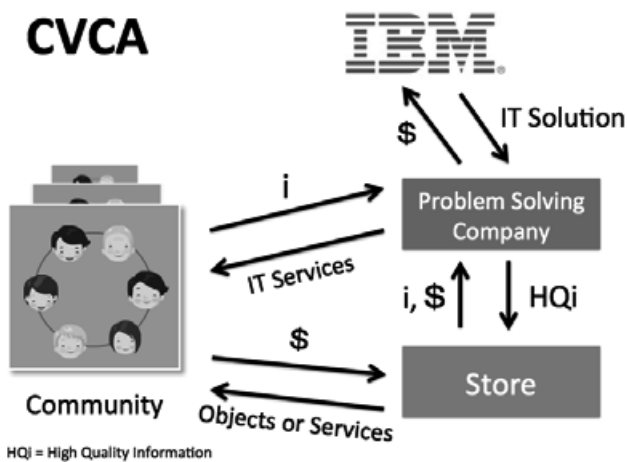


Figure 4.4.2

By using CVCA, we could consider the stakeholder's role. For example, IBM performs the technological tie-up that used IT, and a problem solving company

sucks up information.

4.5. Interview, Observation

Interview or Observation is important method to know users' or companies' opinion. Moreover, there is also a method of carrying out a questionnaire.

At the interview we carried out first, it turned out that total navigation that was discovered in the scenario graph is required. When we interviewed IBM at first, the opinion that he would like to make a platform was heard. After that interview, we advanced the argument focusing on making a platform.

Then, in order to interview users, we went to Shibuya, Odaiba Akihabara, and Futako-tamagawa to do the questionnaire survey.

As a result, we heard many opinions "There is too much information on the Internet and really required information is not known".

If we did not interview users, we did not notice this opinion. Especially, when we considered the service in connection with lives, such as LBS, it turned out that the interview is indispensable. Then, this opinion takes the lead in service.

4.6. Scenario Prototyping Rapidly

Scenario Prototyping Rapidly is the method that prototype our scenario. Almost anything can be a prototype.



Figure 4.6.1

In Workshop#1, we tried to float clouds on the town and express platform for collecting information. This is the scenario discovered in the scenario graph. All the members' view over a platform could be coincided by carrying out Scenario Prototyping Rapidly, and arguing in order to visualize.



Figure 4.6.2

In Workshop#4, we made the prototype of sharing location information with friends. Several sheets of

papers are hung on the hanger. There are the stores recommended by Kawakami, by Sakurai and by Okamoto on some layers. The user of this service can choose a specific friend who displays a recommended store. For example, the layer of only Okamoto and Sakurai, or only Kawakami can be displayed.

The prototype that we made in WS4 displays only a friend's recommended information reliable for users because the opinion "There is too much information and really required information is not known" that we got from the interview to users.

Finally, for Workshop#5, we made the "Rovamy" which is a software application that can be used on a smartphone in fact.

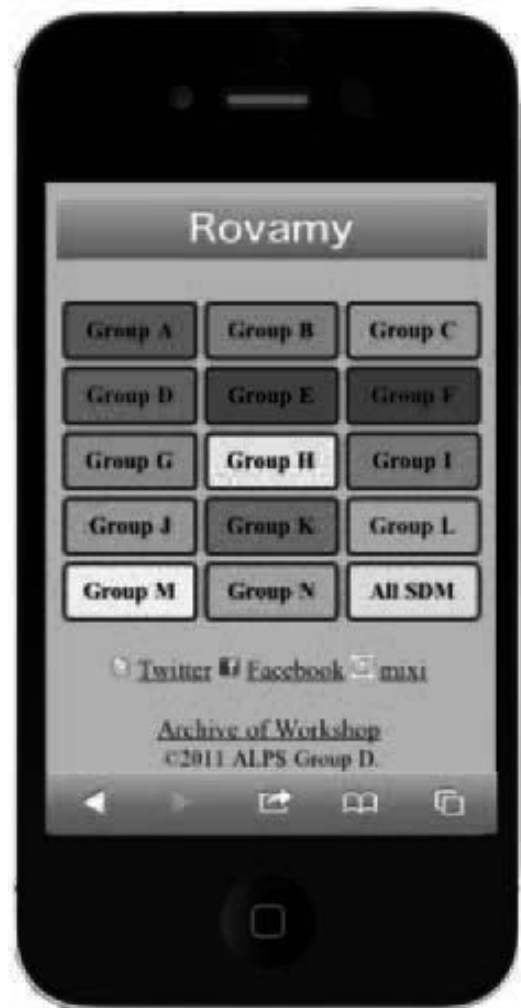


Figure 4.6.3

Let us explain how to use this application.

At first, you choose the group to which you belong on this screen. Then, what you want extracted from the word that comes out in the conversation of your group with the POI (Point of interests) will display on the next screen as follows.



Figure 4.6.4

Next, if you want to add comments, you can input into the comment field in the lower of this screen and touch the button to post the comment with the location information. And if posted, you will the following screen.



Figure 4.6.5

In fact, you can see this web page on URL: <http://spazions.com/alps> and if you want to see this page, you had better see on a smartphone.

In total, we made three prototypes. Each prototype differs also in a concept and a form. However, we could discover the point that an argument was insufficient, by making a prototype, and we could decide the more detailed point of service.

4.7.Value Graph

The Value Graph is a brainstorming tool for clarifying the goals of a product and exploring alternate concepts. It is also used to capture the “what” of the system –the Voice of the customer, the

Engineering Metrics, and Physical Structure.

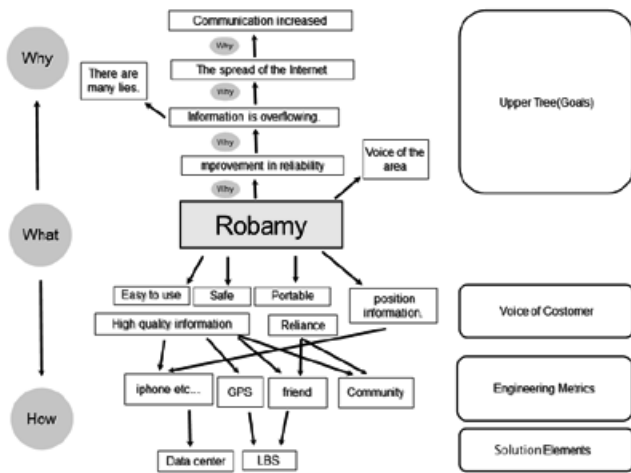


Figure 4.7

"Rovamy" has begun from the question "why does it be required?" in the analysis of the value graph that we conducted. We considered why it would be required to use this system. This value graph started "in order to raise reliability", and "the Internet spread" through the question why to raise reliability. We thought that the reason was "People's communication increased." That is, as the Internet spreads, people can take communication with their friends (or others) always anywhere. As a result, it can be said that information increased too much. From this result, we focused on community. And we decided to analyze for every community that is large "several persons' group" of the range for a while rather than to analyze "every human person." Furthermore, by pinpointing their position, we decided to improve the reliability of the information more.

4.8.Function-Structure map

Function Structure map is a hierarchical representation of the functions of a system. This tool is valuable in itself as conceptual representation of the

system. So we used this tool, in order to systematize a function and verify whether the function is required really or not, as follows.

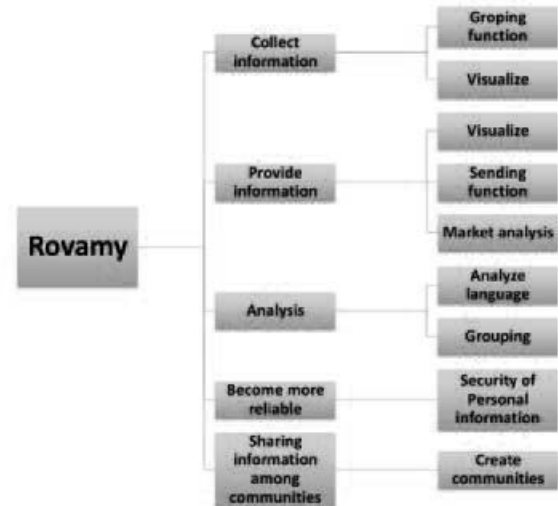


Figure 4.8

By making the function structure map, we recognized that Rovamy has five main functions, "Collect information", "Provide information", "Analysis", "Become more reliable" and "Sharing information among the communities". And this function diagram allowed us to get to know all function we thought we would need were indispensable. And we thought that even if there is a progress of technology and change needed, it turned out that it is necessary not to change the main functions but to change the branches and leaves in a system.

4.9.QFD

4.9.1.QFD I

QFD is a tool for exploring how customer requirements are satisfied by the solution elements of a designed system. QFD House I maps the Voice of the Customer (VOCs) to the performance (engineering) metrics of the system.

4.11.FMEA

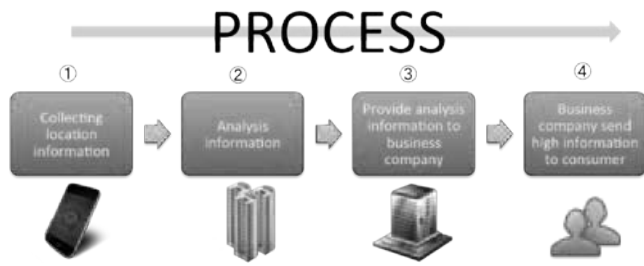


Figure 4.11

FMEA (Failure Mode Effect Analysis) was devised by NASA (National Aeronautics and Space Administration) in the 1950s. This is the technique of evaluating what kind of harm occurs, when failure mode happen for every part (component) of a system, process, phase, and period. This is the functional technique that used "what kind of harm will occur if it is FMEA".

Then in order to specify what and where the risk is, we carried out FMEA. We evaluated by roughly dividing three standards of Occurrence, Effective, and Detection.

As a result, in service of this system, it should carry out carefully about the point whether the individual has a device, the point whether there is any incentive, and the point of the treatment of information was obtained.

Because this tool carries out element decomposition of the risk, it can evaluate a risk objective. FMEA is good at this point. However, although it is easy to grasp a physical thing, it can be said that it is hard to grasp a risk of an immaterial thing.

Table 4.11

FMECA	No.	Function (Element)	Factor	Hazard	Assessment			Risk
					Occurrence	Effective	Detection	
1	Collect information	There is not incentive of send information	Could not collect information	2	4	2	16	
			Have not device	2	3	2	12	
			Data base is full	2	2	1	4	
2	Analysis information	Loss data	Could not acceptable data	1	4	1	4	
			There is no data	1	2	1	2	
		Problem software	Could not analysis data	1	2	1	2	
			Could not analysis data	1	2	1	2	
3	Provide analysis information business company	security countermeasure is poor	information leakage	2	4	2	16	
			Different from those obtained	3	3	1	9	
4	Business company send high information to consumer	Different from those obtained	Consumer do not want to high quality information.	3	3	1	9	
			Have not device	2	3	2	12	

4.12.Design for Variety

Design for Variety is a tool for graphically representing product variety in a concise format.

We began by listing the product variations in columns from left to right. Then, we drew the branched tree that represents total product variations.

We discovered the opinion "Internet has too much information" from the interview to users. Because there is too much information, it is required for you to acquire more reliable information. But we were puzzled what reliable information is then.

We thought that it was probably the information shared with friends. User's true desire appears in conversation with friends. Therefore, we considered the service that raises the reliability of information using the information shared with friends. A user's location information is added to this information, and also reliability is raised.

Next, it is required to suck up and analyze the information shared with friends. It is difficult to do this work only IBM. Then, we decided that a problem solving company takes charge of sucking, and IBM takes charge of analysis.

Finally, we judged that it was necessary to be an application that can be used on a smartphone in consideration of using location information and ease of use. The service that we made as mentioned above is "Rovamy."

4.13.Environmental Complexity/Recyclability

In order to share location information with familiar friends, the result that it was required to use a smartphone and use a problem solving company was brought from QFD or WCA. However, service cannot be performed only by it because the place where conversation is held is needed in order to suck up an actual conversation. Then, spaces of SNS, such as Facebook and Twitter, are also included with the community in CVCA.

Moreover, we did not know that IBM plays which role only by neither QFD nor CWA. We could clarify IBM's role of analyzing by IT because we used CVCA.

4.14.Quality Scorecarding

The Scorecarding Framework is a method for broadly considering the factors that might influence a project valuation model. The Scorecarding Framework explicitly links overall project valuation back to design decisions (control factors) and uncertainties (noise).

The most challenging aspect is the development of suitable transfer functions. We suggest that starting with a basic cost-benefit NPV model, and then adding detail as more information is developed.

■Project objective (Biggest Y)

- The number of active users

■Objective Measures (Y)

- The number of total users
- A user's utility time

We did the brainstorming of the thing related to location information, and decided the following as a factor.

■Control factors (Vital X)

- The degree of exposure
- Frequency of updating
- Novelty
- Security
- Fee
- The quality of location information

■Noise/Uncertainty factors (V's)

- The degree of propagation
- Charm of service
- A user's income
- Density of information
- Page view

Expression is as follows.

Transfer function

$$Y = F(X, V)$$

$$= f(x_1, x_2, \dots, x_6, v_1, v_2, \dots, v_5) \propto \prod_{p=1}^6 x_p \times \prod_{q=1}^5 v_q$$

x_1 : The degree of exposure	v_1 : The degree of propagation
x_2 : Frequency of updating	v_2 : Charm of service
x_3 : Novelty	v_3 : A user's income
x_4 : Fee	v_4 : Density of information
x_5 : Security	v_5 : Page view
x_6 : The quality of location information	

$x_1 = f(x_1, x_2)$	v_1 : The number of introduction to other people per one user
x_2 : The number of advertisements per month	v_2 : Customer satisfaction
x_3 : The number of tie-ups with other services per month	v_3 : A user's annual income
$x_4 = f(x_1, x_2)$	v_4 : The amount of information per page currently displayed
x_5 : The number of times of updating function per year	v_5 : The number of the page view per day
x_6 : The number of times of changing page layout per year	
x_7 : There is any same service or not	
x_8 : There is any privacy protection function or not	
x_9 : A user's monthly amount fee	
$x_{10} = f(x_1, x_7)$	
x_{11} : Accuracy of GPS	
x_{12} : Acquisition time of location information	

Figure 4.14

By using Quality Scorecarding, we could arrange what affects service. Furthermore, relation of factors could be discovered by making expression.

4.15. Net present Value Analysis

$$NPV = \sum_{n=1}^5 \frac{FCF_n}{(1-r)^n}$$

$$FCF_n = \Delta x_n N_n R_e - \overline{C_1} - \overline{C_2}$$

$$r = 5\%$$

$\Delta x_n = \text{increase of profit}$

$N_n = \text{number of company}$

$R_e = \text{revenue share} = 30\%$

$\overline{C_1} = \text{operating cost}$

$\overline{C_2} = \text{expense cost}$

Figure 4.15.1

Net Present Value (NPV) is the amount of money of the net that deducted the current value of the cash outflow (cash drain) that is investment from the current value of future cash inflow (cash inflow). This is an index that shows the profitability of investment (financial investment and business investment), and is the most general standard of investment rating.

We used NPV, in order to know that the business model which we considered can actually profit.

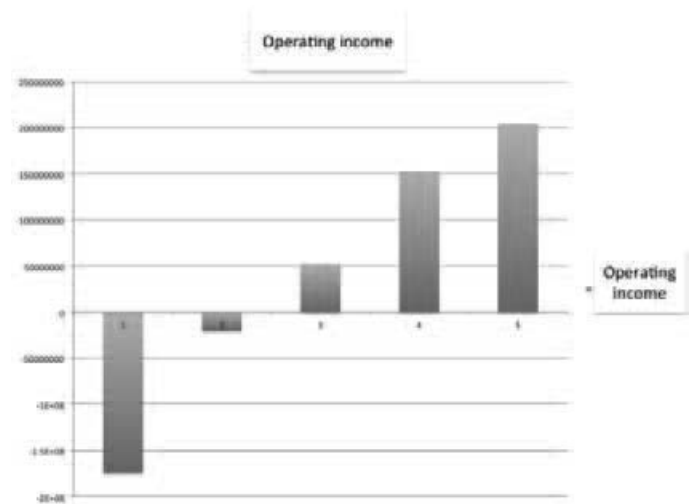


Figure 4.15.2

As a result, because our business requires capital investment first, it goes into the red, but as the whole, it can be into black figures in the 3rd year. In addition, this result assumed that the store that uses this service for every month paid the fee of 30,000 yen. The subscriber to this service assumes that it will be 300 affairs the first year, 500 affairs the 2nd year, 700 affairs the 3rd year, and 1000 affairs the 4th year. Moreover, 100 million yen is added up as initial expense and 200 million yen added up as an annual running cost.

4.16. Design Structure Matrix

Design Structure Matrix (DSM) is a two-dimensional matrix representation of the structural or functional interrelationships of objects, tasks or teams. DSM allows us to understand the present condition of development process correctly and an optimal order of the task is drawn.

At first, we made a project graph as follows to visualize the tasks and the turn of them.

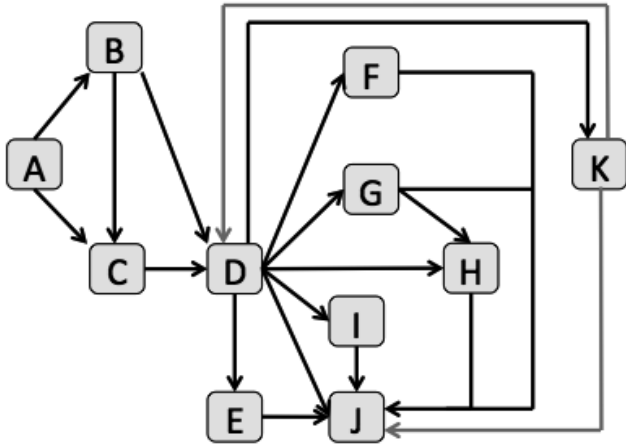


Figure 4.16

A: Interview / Observation

B: Problem analysis

C: QFD / Pugh selection

D: Setting the concept

E: CVCA/ WCA

F: Competitor

G: Think the application for other services

H: Financial analysis

I: Making and evaluate the prototype

J: Assess the scenario and the system

K: Be approved by proposer

After then, we made the DSM as follows from the project graph.

Table 4.16.1

		Provider of the information											
		A	B	C	D	E	F	G	H	I	J	K	
Receiver of the information	A												
	B	x											
	C	x	x										
	D		x	x									x
	E				x								
	F				x								
	G				x								
	H				x			x					
	I	x			x								
	J	x			x	x	x	x	x	x			x
	K				x							x	

As the result of DSM, we analyzed the developer process by the partitioning to minimize the number of the loops of a dependency and the size of a loop or clustering to clarify the domain that should strengthen cooperation.

Since there is no return that is not desirable, most elements that improve most processes cannot be found. However, if we dare to say, we should change the order of E and K because it is far from the point of K to a diagonal line. Furthermore, we clustered the processes as follows.

Table 4.16.2

		Provider of the information										
		A	B	C	D	K	F	G	H	I	J	E
Receiver of the information	A											
	B	x										
	C	x	x									
	D		x	x		x						
	K				x							x
	F				x							
	G				x							
	H				x			x				
	I	x			x							
	J	x			x	x	x	x	x	x		x
	E				x							

As the result, we found that CVCA and WCA we made didn't affect other processes we enumerated here. And it turned out that our processes are divided into two big clusters. The former is an investigation process to set up a concept, and the latter is a process for visualizing a concept, realizing and represent for others. On account of the tool of DSM, although exchange of the process was performed this time, also finally we have to be approved by a proposer in practice. So we found that the process we have done was an efficient way of advancing. And the matrix after an improvement cannot be the best in such a sense. Therefore we think that it can be said that it is one of the faults of this tool.

4.17. Design of Experiment

Design of Experiment helps us to select a set of independent factors from the design space and build a data response set with sufficient fidelity to properly

assess the effects of the factor levels on the response. We used "Design of Experiments" to improve and optimize the performance of the model we proposed and the process.

Then, we thought three axes, concretely the means for acquiring location information, the object for analyzing and store's strategy, as the following cube.

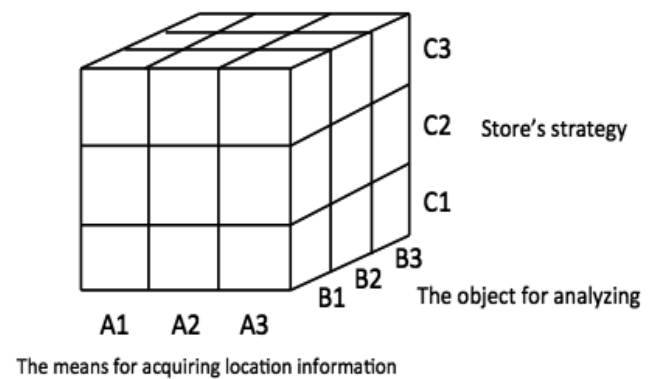


Figure 4.17

And then, we also thought all the 27 patterns as follows. In this connection, A1 means GPS (Global Positioning System), A2 means IMES (Indoor Messaging System), A3 means RFID (Radio Frequency Identification), B1 means comments, B2 means e-mail, B3 means telephone, C1 means advertisement, C2 means coupon and C3 means new services.

Table 4.17

No	A	B	C
1	A1	B1	C1
2	A1	B1	C2
3	A1	B1	C3
4	A1	B2	C1
5	A1	B2	C2
6	A1	B2	C3
7	A1	B3	C1
8	A1	B3	C2
9	A1	B3	C3
10	A2	B1	C1
11	A2	B1	C2
12	A2	B1	C3
13	A2	B2	C1
14	A2	B2	C2
15	A2	B2	C3
16	A2	B3	C1
17	A2	B3	C2
18	A2	B3	C3
19	A3	B1	C1
20	A3	B1	C2
21	A3	B1	C3
22	A3	B2	C1
23	A3	B2	C2
24	A3	B2	C3
25	A3	B3	C1
26	A3	B3	C2
27	A3	B3	C3

As a result, we found that all patterns must be experimented in our model because each variable is independent and there is no duplication. So it turned out that it was difficult for our model to optimize the process of experiments

And, the proposal we considered is not physical design but a business model so we thought it can be said that it is not fit for our model.

4.18.Object-Process Methodology

Object Process Methodology (OPM) is an integrated approach to the study, development and representation of systems. Here, we used OPM to visualize function and connection with each other. Although model is divided into various layers and being thought usually, we made only the level 0 of OPM in order to consider a large frame this time as follows.

OPM level0

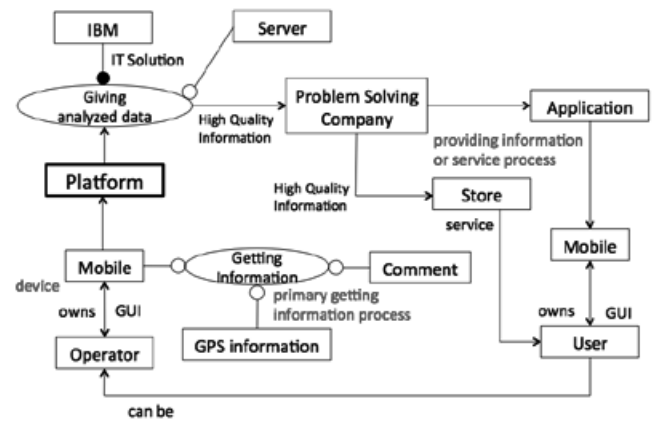


Figure 4.18

This model allowed us to understand that there are mainly two kinds of processes, getting information process and provide information or service process.

Though making this, we thought that it was difficult to visualize connection between objects and processes in the model we propose. The reason why we thought is that what is given from “Problem Solving Company” doesn’t become settled in one but various things are assumed, and although what “Operator” and “User” are plurality is our model’s feature, it cannot be expressed fully.

5.Design Recommendation

Our new system, “Rovamy” is revolutionary data mining method. It is comprised of three points, “Location information”, “Sharing information among friends” and “Grouping people”, and these three points are used for data mining.

You heard “There are Google+, Twitter, Facebook and so on. A lot of companies provide services similar to Rovamy”. Is it true? If you said so, please give us the evidence. We think these companies or services use just location information and what users said. They don’t use our three key points for data mining at same time.

You heard like too “Will these three keywords make profit?” Our answer is “Of course”. For example, Rovamy get a conversation on e-mail between father and son. Father wrote “Today I will go to bed now. Then do you have a key? If you don’t have it, I will open the window. And what time will you go back home?” and son wrote, “Oh, thank you father. Today I left my key at home. Please open the window. Maybe I will go home at 1 am. ”. If you were burglar, if you can get this information added location information, where this family’s house stands, you will be very happy. This is dark side of Rovamy, but if you transpose the burglar to security, the security company has to focus on this house and family may thank to the security company.

We thought that you clearly understand our proposal. Data mining from our three key points – Location information, Gathering information between people, Grouping people – is very powerful method. Therefore if you use this method wrongly, our method will occur huge problem.

Now let’s present another key point. If you want to win on the stock market, will you lay on the only past data? Maybe you want recent analysis reports, news, IR information and rumor from your friends. If you can get all of such information, which information is intelligence - the most important information for your decision - for you? We think that open source information is not important so much. Of course, it needs to decide but what your heard unopened information from your friend was most valuable information.

On the other hand, when you buy something, for example, TV, house, clothes and so on, too. When you have to go to the restaurant with your special person, and if you don’t know good restaurants, what will you

do? Maybe you will use the Internet, then you can get just information but that information never be intelligence. We think you lay on your family, friend or somebody that you can trust.

On the Internet, there is a lot of information. These include SNS, blogs, C.M., and News. You easily get these information and you think how much it can be trust. Human can get information from around himself but that information’s credit equals the credit of the person who gave the information.

We can understand that C.M. will be lay on the friend’s relationship from this.

Probably you wonder how we can secure the quality of information after data mining’s one. Then we might answer “Groping ”.

The human lives in a number of groups that is family, friends, co-worker, hierarchical society, community people and PTA (Parents-Teacher Association), and so on. Of course reliability will be change each group. In co-workers, PTA and community people talk about common good, so we think information from this groups’ conversation have high reliability. On the other hand, in hierarchical society, often people have a flating tongue. So information from these groups has low reliability. When you are Rovamy’s user, you have to choose group very carefully.

The Rovamy is revolutionary data mining method. Rovamy has no killer app, consumer can’t know, who, what, when, where, why and how. If you can’t understand these things, let us read next paragraph.

From here, we present whole design of system by CVCA and WCA.

This is the CVCA.

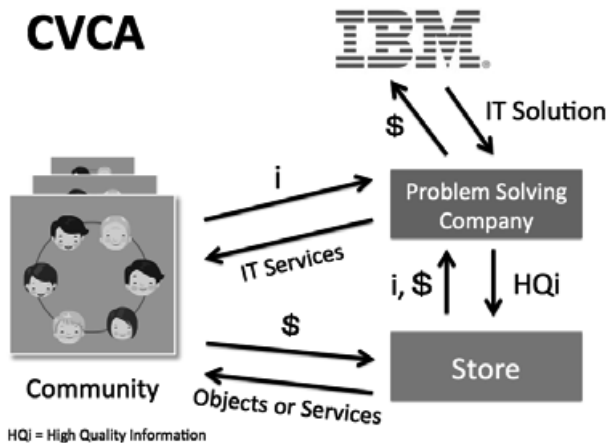


Figure 5.1

Community talks with IT service, which provides from Problem solving company. It gathers a lot of information from the talk and data mining with Rovamy. After being used the Rovamy, Problem solving company gets high quality information. High quality information consists of where community's people said, what they need and when they said. Problem solving company provides the high quality information to Store. Store has to sell some services or materials. So the store thinks where and when we can sell based on high quality information. Each stakeholder pays for service.

This is WCA.

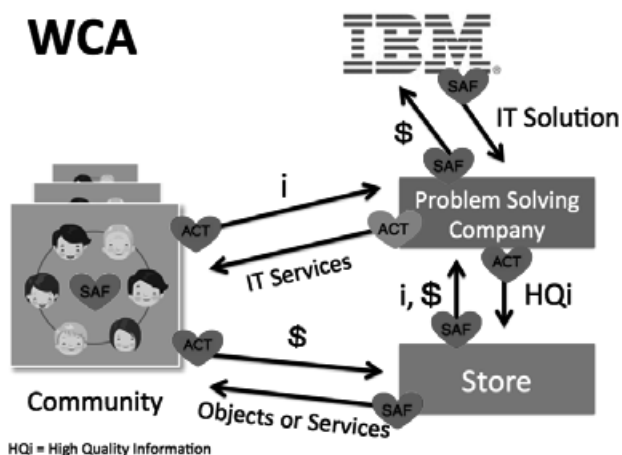


Figure 5.2

We especially focus on community. We research how

we can provide incentive to communicate with them.

Finally we reached this answer, people don't want killer application to be collected their data. The people want to use application because it is so useful, helpful for their life. If we can make killer app. under some needs – to collect user's information –, people's lives will change and the needed application will change. So we reached that answer. But what should we do next? We thought that let's raid on the killer app that can collect users' data. That is the most effective.

The human want to communicate with each other in groups. So Problem solving company thinks that we want to get money from user and IBM, want to help their life and want to help their conversation by some application. Now we know just huge SNS, Skype, but we will certainly meet new revolutionary apps. Now we can't imagine, but that future surely comes and our Rovamy will change the way of marketing and the people's life style.

Let's see the life style in the future. You live near Hiyoshi station alone and discuss this Christmas's plan with family and friends by app.

Then these conversation data through Rovamy, Problem solving company can understand how many people want to stay at home on Christmas in Hiyoshi, to do party, to eat chicken and how much they may pay the money. If you were Problem solving company, what company will you sell these data? If I were Problem solving company, I will sell the data to Kentucky Fried Chicken (KFC), liquor shop, and to provide catering service company. Then stores want to increase the sales and will increase C.M. for people who want to hold party at house. C.M. way is lay on each Store. One will advertise on app., one will distribute handed out around the station and one will

open the new store.

We think Rovamy will be easy to introduce into our real world but not easy to describe life-cycle plan. In general, life-cycle plan show how to make, sell, use and reject. On Rovamy case, doing the programing, going to negotiate and making contract with problem solving company, problem solving company use for their object, cut off the contract.

We especially focus on the use part. We suppose that Rovamy’s business ecosystem will have 3 types stakeholders. Firstly, one is a community, for example, family, friend, local community, PTA (Parent-Teacher Association), and the others. We want them to discuss freely, so we want to develop software that is easy to communicate with each other. Secondly, one is problem solving company, for example, local government, real estate owner, advertisement agency and the others. We think this segment’s stakeholder is the most important. They can use Rovamy for each group’s object. If you were local government, you want to know resident people’s needs for government.

Finally we will explain the reason why IBM has to create Rovamy. IBM has a lot of customers and these customers want to increase the sales. Because IBM can use only IT and computing science, they can’t advertise by posting. If we can create Rovamy systems, it may run on huge server. On the market of selling servers, IBM is one of the KINGs. IBM wants to quantify everything. If you quantify this area’s needs, you have to use Rovamy. Rovamy is the best solution.

6.Competitive Analysis

We analyzed the competitors of our business model here. It is very important to conduct competition analysis in order to understand the strong point, the

weak point and the novelty of the model that we proposed. There are a lot of companies that offer LBS like the business model that we proposed. For example, they are Foursquare, Google Map, Google Latitude, Yahoo! Loco, Nakamap and so on. In order to raise the quality of the information, they are using either “Location information”, “Sharing of information” or “Reliance among the friends”. And two or more unknown people receive the information to which one person disseminated or it is only mere effluence of information in existing model. However, we want to emphasize that our proposal is regarding the limited group in the community as one group and collecting the information from it. Then, the following table shows the difference between the existing services and our proposal. There is no service that has provided such services. Therefore, it can be said that our proposal is fresh.

Table 6

	Analyze	Share	Reliability	Personal Information	Accumulative Property	Regard as Group
Google Latitude	○	○	○	○	○	×
Foursquare	○	○	△	○	○	×
Naka Map	×	○	○	○	○	×
Loctouch	×	○	○	○	○	×
Google Map	×	○	×	○	○	×
Facebook	×	○	○	○	○	×
Twitter	×	○	○	○	×	×
Rovamy	○	○	○	○	○	○

In Google Latitude, Foursquare, Nakamap, Google Map and Facebook, advertising revenue is mainly made into the source of funds. On the other hand, in Loctouch, which is provided by livedoor and Naka Map, the income has been obtained on the collaboration campaign with other companies, and sponsor contract.

Next, we considered the cost. As for almost all services, systems development expenses, server administrative expenses, and personnel expenses are mentioned as expenditure.

It seems that it will hardly change to the existing services from the viewpoint of users. However, in spite of hardly changing as cost, stores' sales can be improved and Problem solving company as Tokyu Corporation can improve the worth of its buildings. And furthermore, IBM Japan can get the revenue to IT solutions. So all stakeholders may be happy because of using the model that we proposed.

We described assumptions of our forecast and Net Present Value calculation on Chapter 4.16, and development time/risk on chapter 8.

7.ALPS Roadmap and Reflections

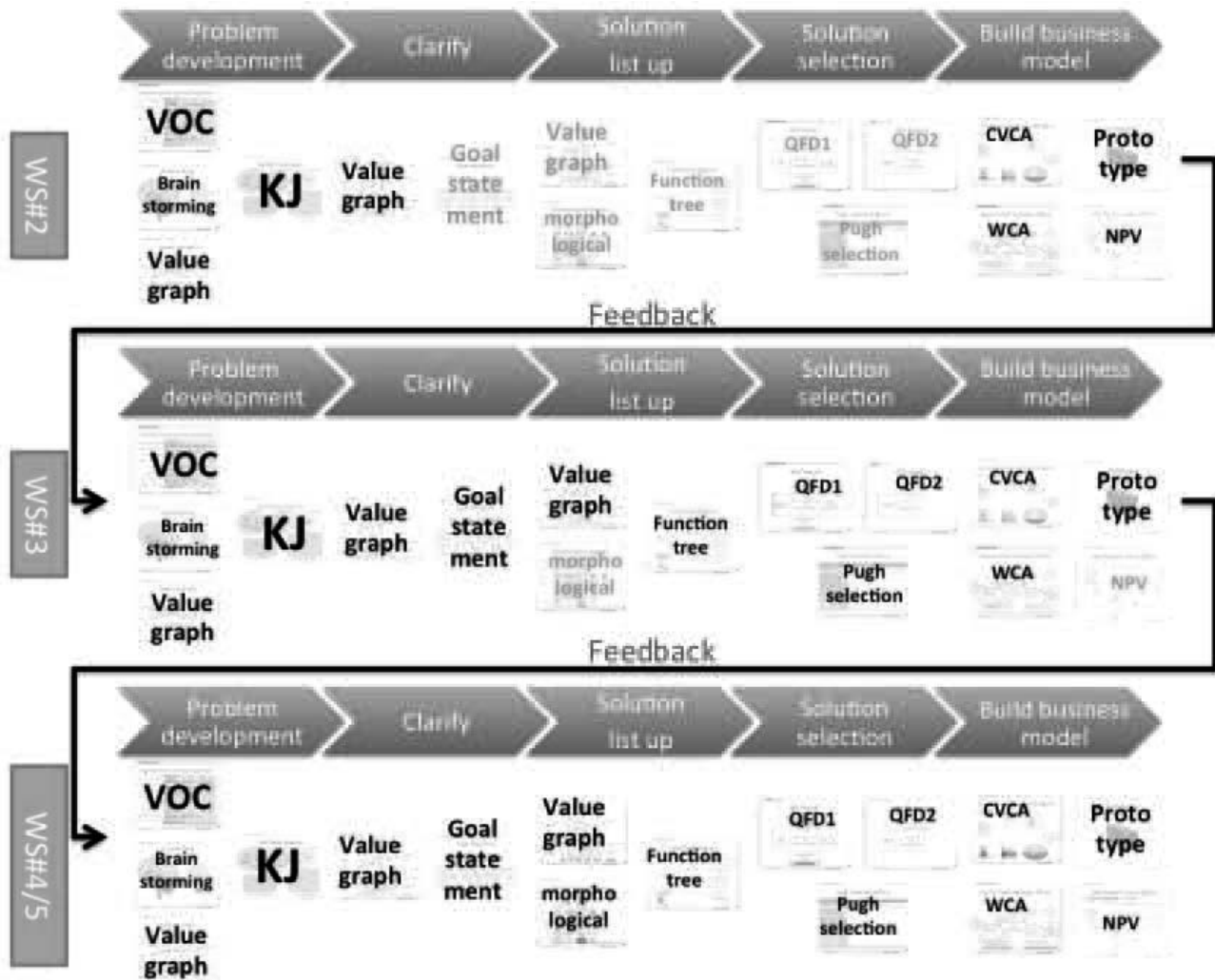


Figure 7

7.1 Summary of Roadmap

We used method of ALPS in five phases, "Problem development phase", "Clarify problem phase", "Solution list up phase", "Solution selection phase" and "Build business model phase". This cycle was turned some times by Workshop#2, Workshop#3 and Workshop#4&5 respectively.

7.2 Aha Oops Eureka

The point of "Aha" is interview and questionnaire of Workshop#3. Some people said that such as an advertisement tended to be disliked for consumers

because there was much information. On the other hand, we found that it was useful for "Recommend for You" of Amazon, YouTube and so on.

The point of "Oops" is when we got feedback in timing between Workshop#2 and Workshop#3. Although we got feedback from Mr. Goto, a proposer, the feedback is not clear for me. So, we couldn't find the way to breakthrough in the future and we reached Workshop#3. As a result, we needed to adjust an orbital.

The point of "Eureka" is problem development. We recognized what we wanted to do really is not "Local

Area Point” in the timing between Workshop#3 and Workshop#4. As a result, we clarified that LBS is a means for attaining the purpose to the last and we clarify problems again. Then we can reach sharing the intention with IBM.

Below, we explained concretely what we did in each phase.

7.3 Problem development

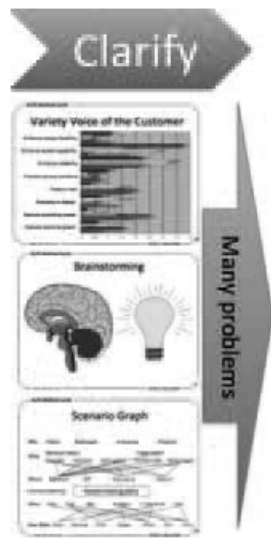


Figure 7.3

First phase is for finding problem. We used three tools here.

First one is brainstorming. We shared an idea. Second one is to hear the voice of customers. We interviewed the customers as end users in Shibuya, Akihabara and Odaiba. And as mentioned above, we interviewed Tokyu Corporation as implementing body because we can regard the implementing body as one of the customers. Third one is scenario graph to get hold of where the problem is in present life.

By using three tools, we listed up what are problems.

7.4 Clarify problems

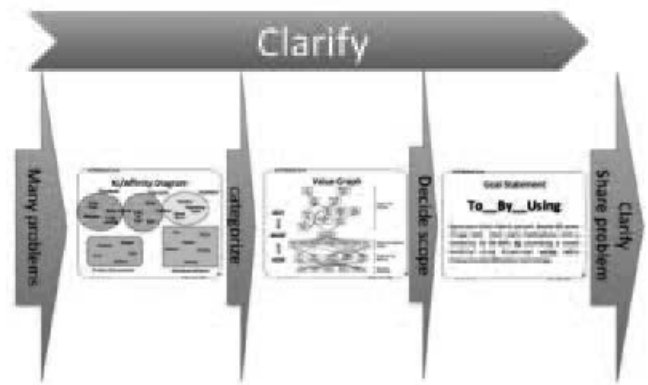


Figure 7.4

Clarify problems phase is to clarify the problem. We categorized problems by using KJ method because there were problems. Next, we narrowed the scope in problems and then we wanted to get hold of a fundamental problem by clarifying why the problem is existed. Then we used “Value graph”. And In order to become more clearance, we used “Goal Statement”, that wrote “To”, “By” and “Using”.

7.5 Solution list up

We listed up solution that correspond to problems after grasping the present condition. By using “Value graph”, we advanced with decomposition of how we realize it. In addition, the function for which customers are asking was subdivided and in order to realize it, we recognized what kind of things there was. Although the free listing was only carried out until then, we analyzed structurally.

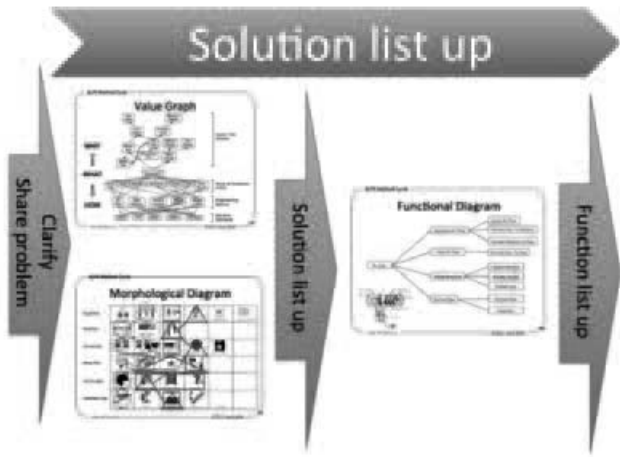


Figure 7.5

7.6 Solution selection

Solution was listed up. So, we investigated what solution suited the voice of the customers the most by using QFD (Quality Function Deployment) and Pugh selection to evaluate the solution.

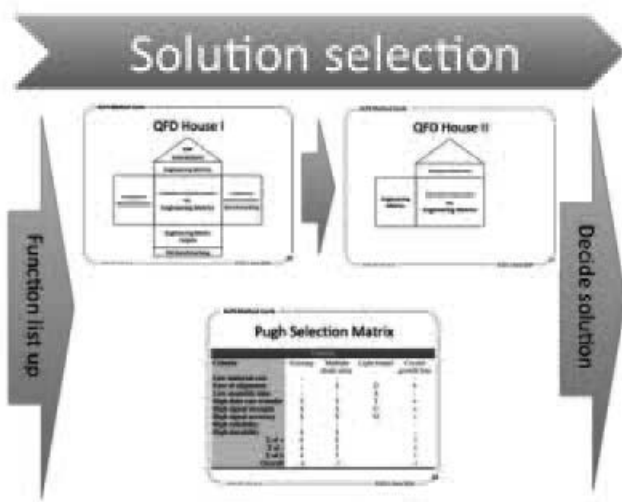


Figure 7.6

7.7 Building business model

Next, we built a business model because the solution was decided. The tools that we used in building a business model are CVCA (Customer Value Chain Analysis) and WCA (Wants Chain Analysis). Based on it, we calculated NPV (Net Present Value).

Then we visualize how each stakeholder is related to another one, for example, about the flow of information or money.

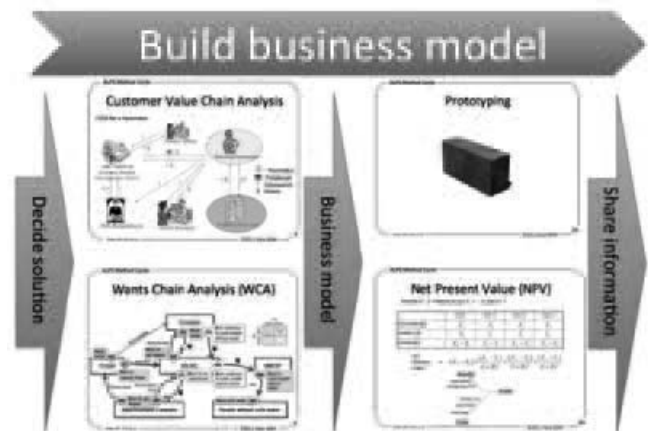


Figure 7.7

After that, we shared information with Mr. Goto, a proposer, and got feedback from him.

Next, we described how we corresponded to in each workshop in detail.

8. Conclusion and Future work

We can't reach the future only by personality but by correcting and classification what the person said. On the other hand, we didn't show that method would really work.

So we have to verify our hypothesis in the future. In this report, we thought people can get information from other people through letters, sound, body language and anyway. Please imagine how you learned in school. When you were young, you go to some schools and learn almost everything. Now you get information from round of you, in other words "your word", were made from what you saw and heard. We just said very simple thing. The people just know what he knows.

Our hypothesis is based on this thinking. We

especially focus on what people shared information in their groups. Please imagine which one you will trust, what anonymous said or what your familiar friend said.

We have to verify these hypotheses and then we have to come out algorithm. The algorithm will be used for analyzing the data gathered from the community.

If another group will research this problem in the future, that group has to verify these hypotheses because these were key points for our system and the group has to verify the hypotheses will work, you will see the next big mountain, how you will gather group's conversation. You have to contact with some SNS groups, social game services and chat services. Any service will be good, but have to choose GPS service nothing to say.

Then you will need 530 hours, \$ 3,000,000 and 5 members. It came from using by the Fermi estimation. Our hypothesis no.1, people know just what he knows, will easy to verify. Check the documentation for 35 hours, and go to discuss with some specialists for 15 hours. So totally it needs 50 hours. On our hypothesis no.2, we have to make algorithm and need 180 hours. We find the key word for 80 hours and validate 10 times so each validate and rebuild the model for 10 hours. At last, we have to strike hands on the bargain with some companies. We think that it needs 300 hours.

When we face some bad things, we have to decide to go on the plan, to change it or to end it. If we can't verify the hypotheses, we must stop the plan. If we can't find out the algorithm, we have to change the viewpoint. We recommend that we have to doubt common knowledge. If we meet a man who said what our project's killer application is and what our

project's novelty is. We must not change our thinking because just the man cannot understand our new idea because it is not appeared now.

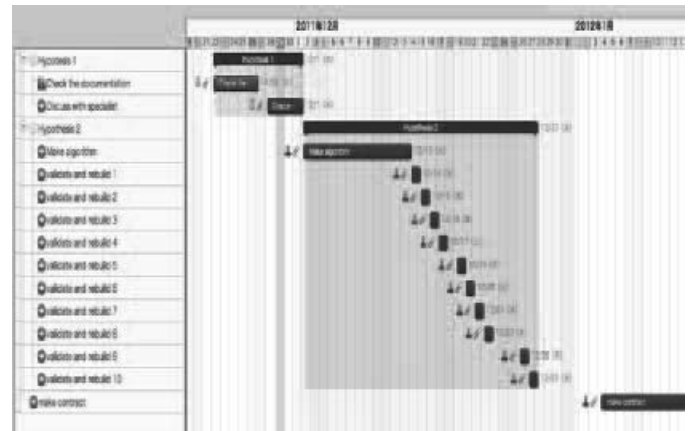


Figure 8.1

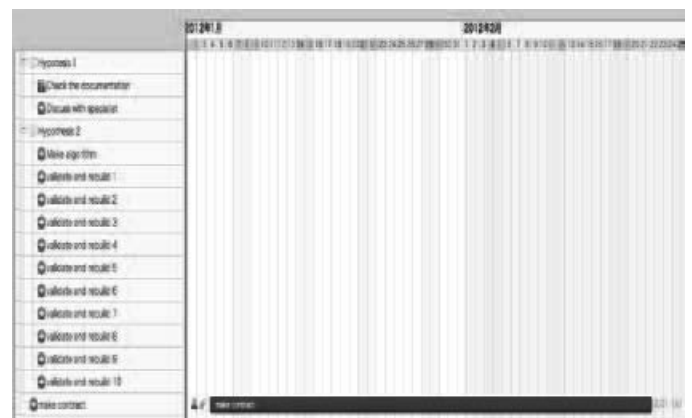


Figure 8.2

9.Acknowledgement

We would like to thank Mr. Goto, a sales specialist of IBM Japan, Ltd., for the kind sponsor and thoughtful care from the first day we know each other till now. Without him, we don't think we can accomplish the whole project.

And during ALPS, our mentor, Mr. Makino gave us a lot of ideas and comments. We really appreciate his great help and feel very lucky to have him on this project.

Last but not the least important, we would like to

give our sincere thanks to Prof. Kim, Prof. Kurt, Prof. Dijkema, Mr. Kevin and all the professors who taught us a lot on everything. We have really learned a lot.

Many thanks to who helped us during the project and forgive us not listed here one by one.

10.References

[1][2] ”The report about the index system and the measurement technique of the amount of information distributions of our country”, Institute for information and Communications Policy, the Ministry of Internal Affairs and Communications, 2009

11.Appendix

Questionnaire



The Result of Interview

Shibuya

- Want shops to collaborate with coupon magazines
- Wanna know the inside of buildings by using web-map

Akihabara

- Children’s security : especially inside building
- Collaboration with Sports

Odaiba

- Collaboration with Sports
- Wanna share meeting places more easily

The Result of Interview

Futako-Tamagawa

- Wanna share information with others
- Web-Map is not accurate.

Atagawa

- Hate to expose personal information to unknown people.
- Hate to use pay apps.

Atami

- Plan to travel based on information of the Internet.
- Wanna share information with friends who are close.

Stakeholder’s Voice



IBM Japan don’t marketing but provide IT solution to other companies mainly. The idea that users share the information in the limited group is fun and the simple solution is the best.



The idea of sharing the information with only the member of specified and closed community is very interesting.

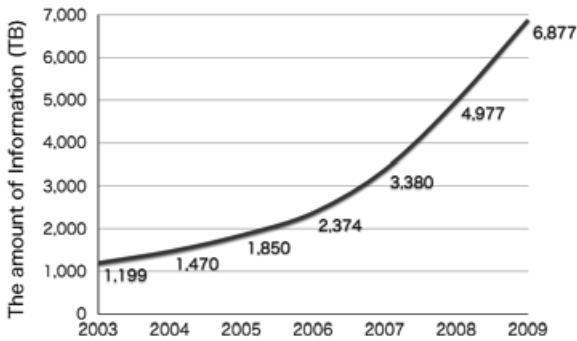
Goal Statement

To Get only high quality information

By Analyzing the data

Using Location Information
Sharing Information
Reliance among Friends

Increasing the Amount of Information



(Referring) Ministry of Internal Affairs and Communications, "The number of users of Search Engine on the Internet" 2009

Stakeholders' Want Analysis



Easy to communicate and get reliable information

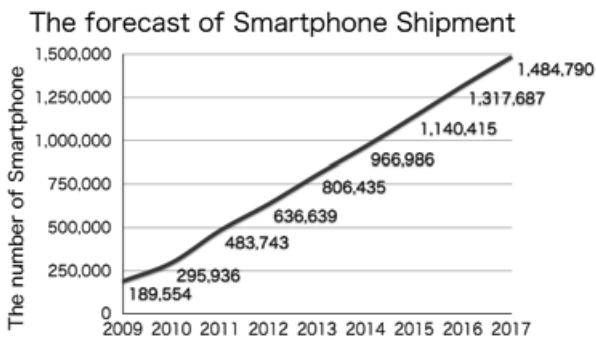


Increase the number of customers and the amount of sales



Make the new LBS platform

Increasing the number of Smartphone



(Referring) IDC, "The forecast of Smartphone Market", 2011

Persona



Name : Mayumi
Gender : Female
Age : 21

- She lives in Hiyoshi, Yokohama.
- She has many friends there and often chat with them.
- She wants to eat chicken on X'mas.
- She wants to hold a party and enjoy with friends nearby the place.

Derivation of Rovamy

Rovamy = **Rova(Donkey)** + **Mimi(Ears)**

For catching more useful information

Story of "King Midas has donkey's ears"

A king, who has donkey's ears, had kept the secret except a barber. One day the barber shouted the secret into a well, then it echoed



from other wells in all the city and the fact become famous. After that, the king said "I have these ears to be able to hear everyone's opinion." as an explanation.

Persona



Name : Fumie & Yone
Gender : Female
Age : 75

- They live in Kyoto.
- They often communicate with each other by e-mail.
- They want to eat a hot-pot, nabe outside.
- They want to know a delicious restaurant.

Group D's Final Presentation Slides

ALPS

Final Presentation

Graduate School of System Design and Management, Keio University

Group D (Proposed by IBM Japan, Ltd.)

Miki OKAMOTO, Yasuyuki KAWAKAMI, Takahito SAKURAI,
Noriyuki SASAKI, Tomoyuki FUJITA

Theme

Synergy & Symbiosis by LBS

Workshop #2



Workshop #3



Workshop #4

The system of reserving the seat of movie theater

Creating love for hometown by adopting virtual money

Sharing location information among Friends

What is Synergy & Symbiosis?

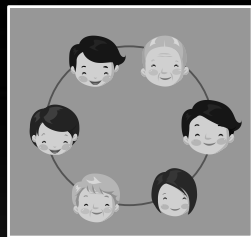
Human made some communities.

In the community, Synergy and Symbiosis comes from communication.



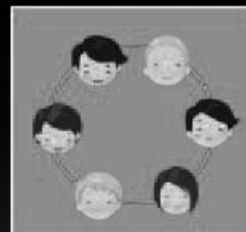
“Communication & Community”
is one of the key points for Users

Style of Community's Communication



Want to Share
Public Interests

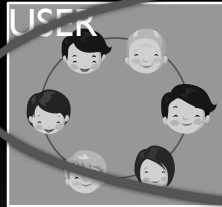
Community example;
PTA, Neighborhood
Community Association,
Local Party



Want to Know about
some information

Community example;
Family, Friends, Corporation

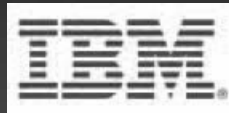
Stakeholders' Want Analysis



Easy to communicate and get reliable information

Function
Provider

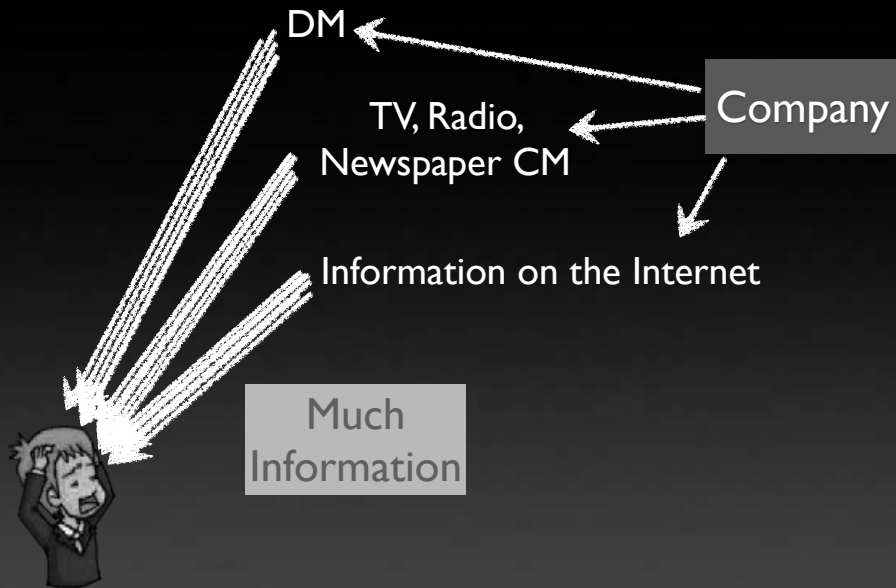
There is some association.
Local Government, Company
and any other organization.



Make the new LBS platform

The Viewpoint of Users

How does company give us information ?



Voice of Customer



The more information there is on the Internet, the lower reliability they feel.



What should we do to improve the quality of information?

QFD

Customer Requirements	Customer Weights	Technical Specifications	Technical Weights
can use it wherever I am	1	improves the quality of the information from search results reading	1
can operate easily	3	improves the quality of the information from conversations with a friend, and other	3
cheap	3	improves the quality of the information from conversations with a friend, and other	3
communication	9	improves the quality of the information from location information	9
privacy	3	improves the quality of the information from personal information	3
convenience	3	improves the quality of the information from personal information	3
everyone can use it	9	improves the quality of the information from personal information	9
get information quickly	3	improves the quality of the information from search results reading	3
share	9	improves the quality of the information from location information	9
reliability	9	improves the quality of the information from search results reading	9
need information easily	9	improves the quality of the information from search results reading	9
Row sum	42		42
Relative Weight	40%		40%

High Portability of Smartphone

Communication with Friends

Providing Information based on Location

As Is

A lot of information is scattered on the Internet



To Be

To get only high quality information

Location Information

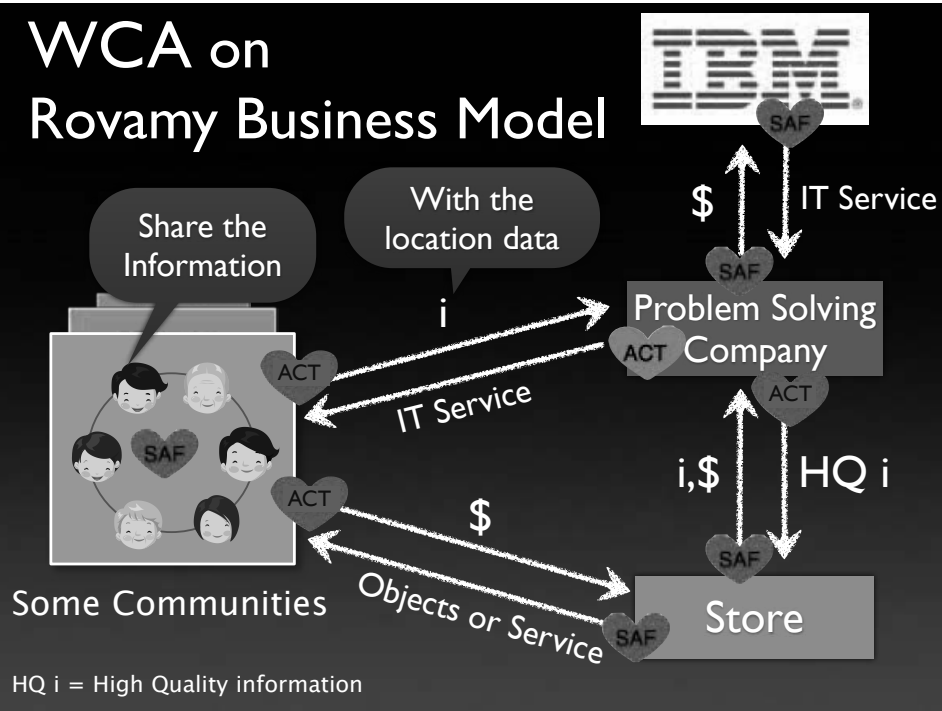
Sharing Information

Reliance among Friends

Rovamy

Rumor changes the world

WCA on Rovamy Business Model





From the viewpoint of users,
the usefulness of advertising will change.

Feeling Advertisement

Boring Things



More Useful Things

Prototype

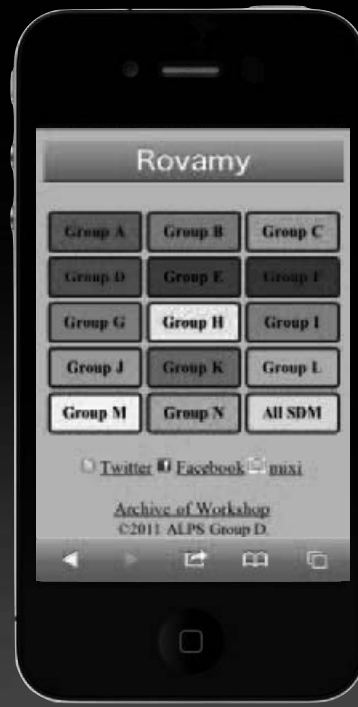
Prototype



<http://spazions.com/alps/>



<http://spazions.com/alps/>



<http://spazions.com/alps/>



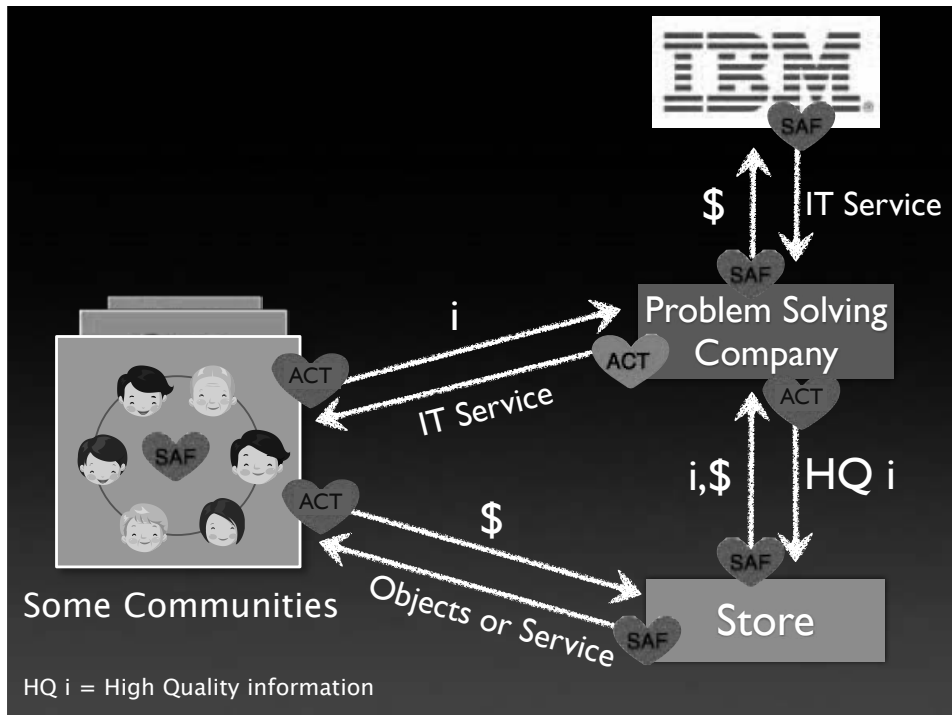


<http://spazions.com/alps/>



<http://spazions.com/alps/>





The Viewpoint of Problem Solving Company

They want stores to increase the sale
and want to increase the value of building

Selling

Lead the customers' action



Catch up the customers' potential
desire based on location information



The Viewpoint of Store

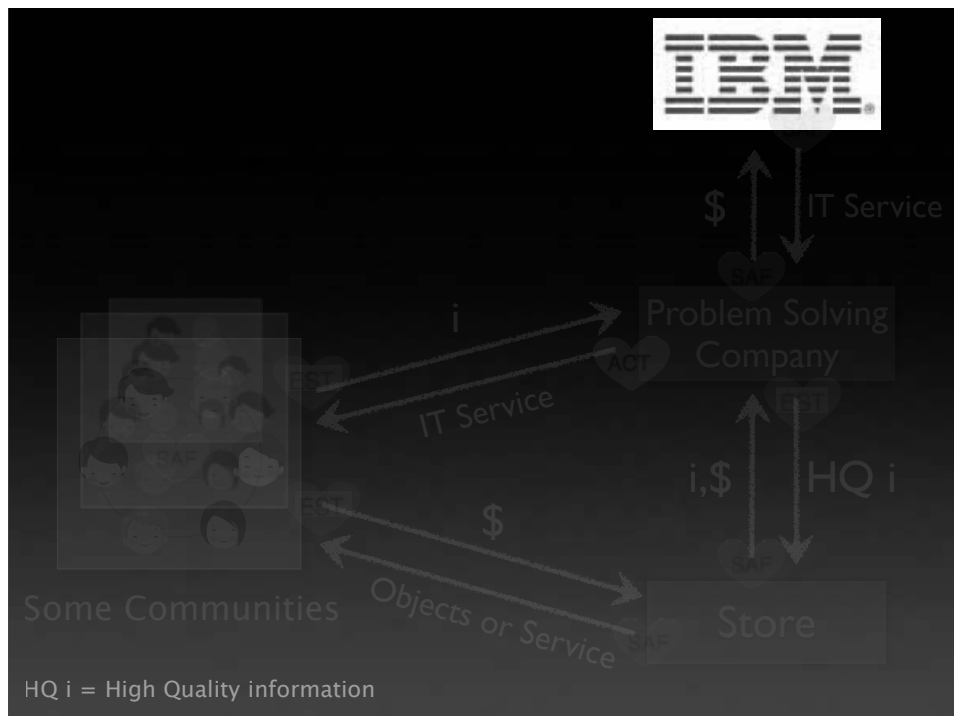
Store wants a lot of customers' needs
and want to increase the sales

The way of Selling

Inefficient Marketing



Can respond customers' needs efficiently



The Viewpoint of IBM

IBM provides IT solutions to other companies and want them to be happy.

Provide IT Solution

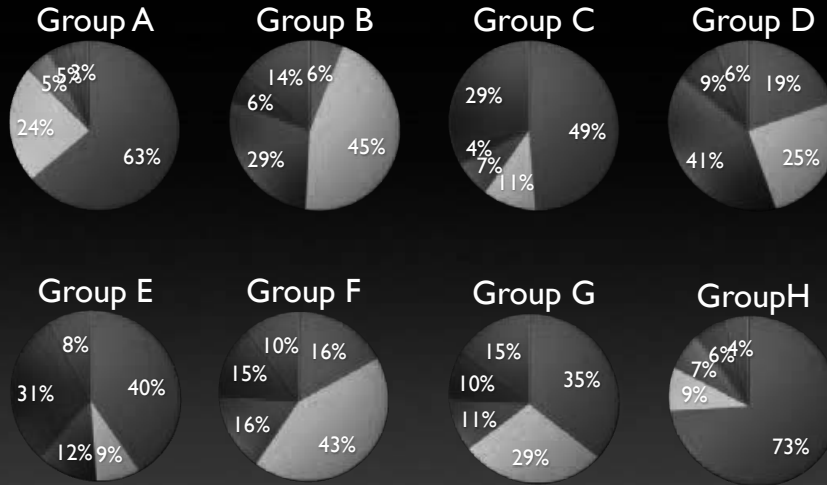
Analyze the mere personal information



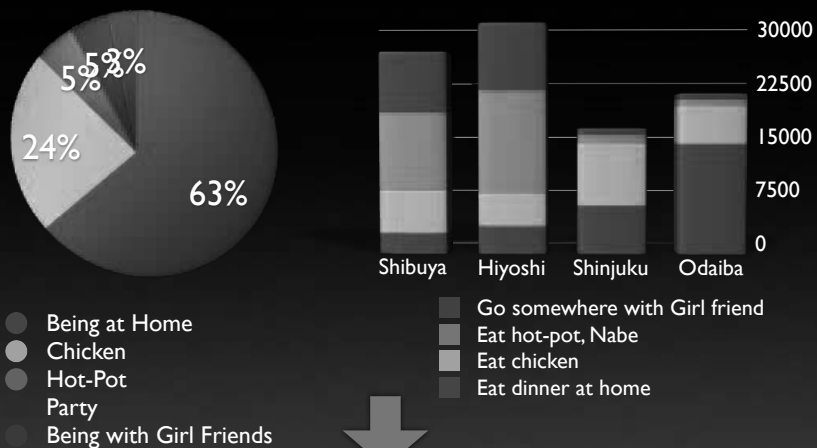
Build a system to respond customers' needs based on location information

Viewpoint of IBM

Analyze the Data



For Example; How to Sell Chicken on X'mas



You can know where to sell chickens and how to get much money from these data.

Video



One more thing ...

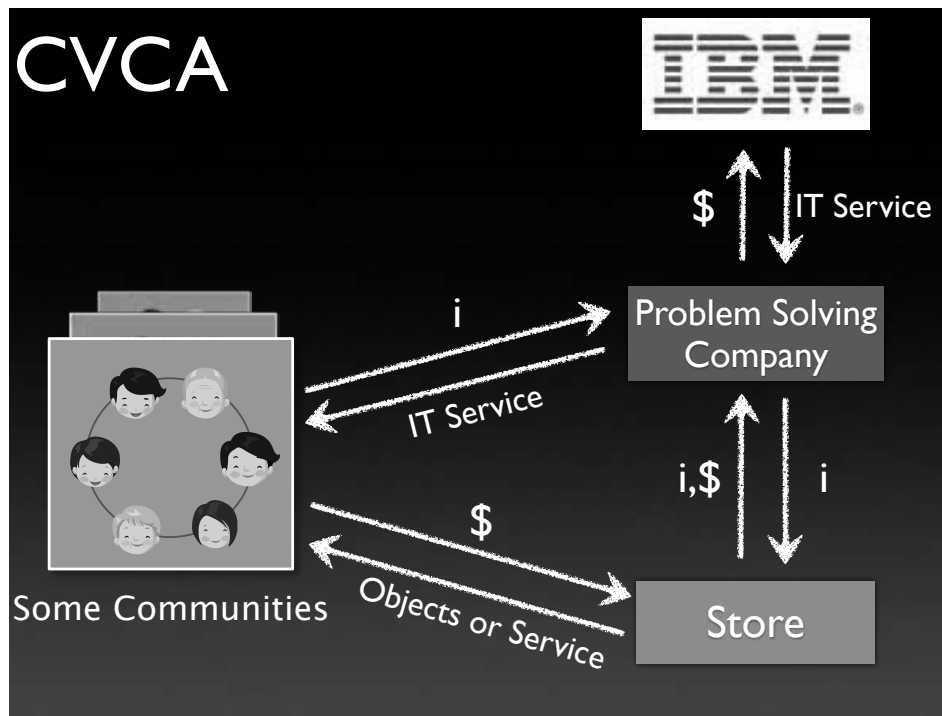
Six month ago we started ALPS.



END

Thank you for your attention.

Appendix



Existing Services

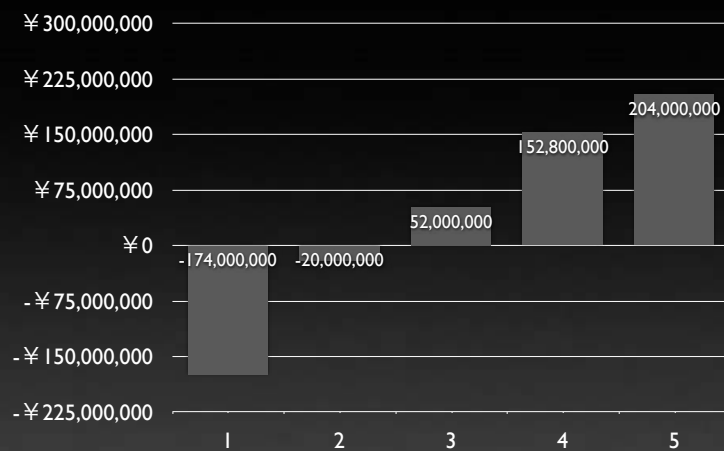


These are sharing services of location information.

But they don't regard people as groups and don't build business model such as providing IT solution to other companies.

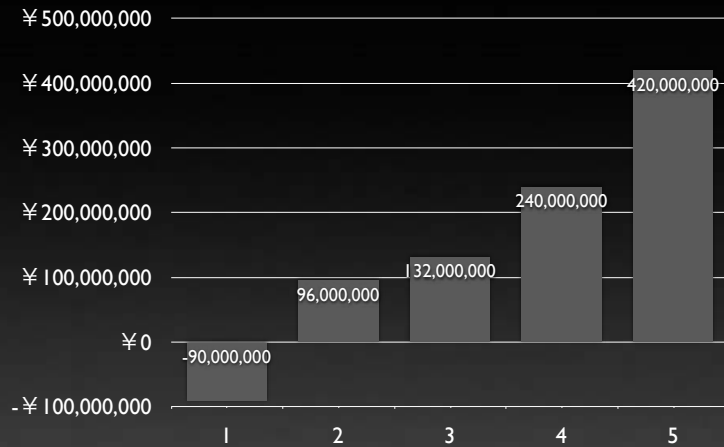
Operating Profits

Turnover Increase Rate(1.2 million)



Operating Profits

Turnover Increase Rate(2 million)

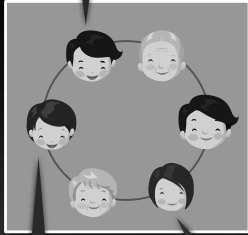


Competitor Analysis

	Analyze	Share	Reliability	Personal Information	Accumulative Property	Regard as Group
Google Latitude	○	○	○	○	○	×
Foursquare	○	○	△	○	○	×
Naka Map	?	○	○	○	○	×
Loctouch	×	○	△	○	○	×
Google Map	○	○	○	○	○	×
Twitter	○	○	○	○	×	×

Application Example①

I wanna eat chicken.

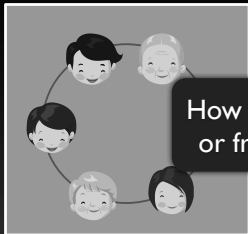


I wanna eat out.

I wanna be with friends on Christmas



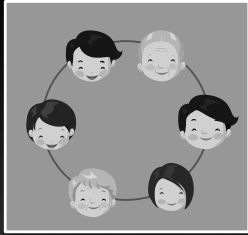
Application Example①



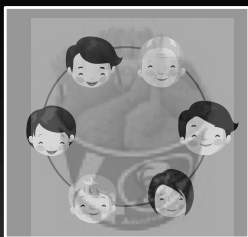
How about selling family or friends set outside?



Application Example①



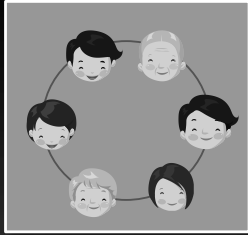
Application Example①



Happy!

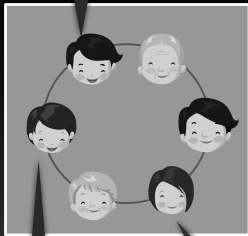


Application Example②



Application Example②

I wanna eat hot-pot,
NABE.

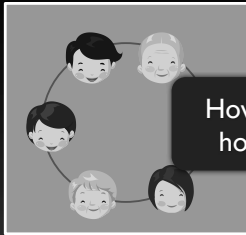


I wanna eat
something hot.

I wanna enjoy
with friends in
winter.



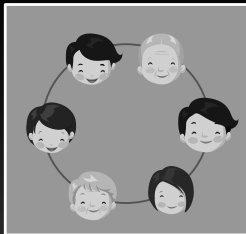
Application Example②



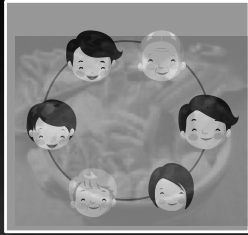
How about selling
home nabe-set?



Application Example②



Application Example②



Happy!



Referred Business Model

Independent Shop

A street of stores

Franchise Shop

TOKS

School

Sight-seeing Area

Railroad Company

Hotel Management

Software Company

Neighborhood Council

Toilet

Real Estate

Scenario Graph

Main Function

Sharing the information

Where

Independent Shop Franchise Shop School Toilet Sight-seeing Area

What

Who

Hotel Management Software Company Railroad Company TOKS Neighborhood council Real Estate

When

Driving Walking Walking

Questionnaire

アンケート

場所：〒100-0001 東京都千代田区千代田
 具体的な場所名：〇〇ビル
 日時：2021年〇月 〇日 時刻：〇時

【年齢】
 〇 あなたの年齢を教えてください。
 ①10代 ②20代 ③30代 ④40代 ⑤50代 ⑥60代 ⑦70代以上

【性別】
 〇 あなたの性別は何ですか？
 ①男性 ②女性

【職業】
 〇 ご職業は何ですか？
 ①自営業 ②フリーランス ③学生(大学生・高校生・中学生) ④無職 ⑤その他

【交通手段】
 〇 この場所へはどのようにして来られますか？
 ①車 ②自転車 ③徒歩 ④バス ⑤電車 ⑥その他

【備考欄】
 〇 その他ご記入の事項はここに記入してください

【滞在時間】
 〇 この場所へ来たときに滞在している時間は？

〇 この場所へ来た理由は何ですか？

【滞在目的】
 〇 この場所へ来た目的は何ですか？

【趣味】
 〇 あなたの趣味は何ですか？好きなことを教えてください。

【スマートフォン利用状況】
 〇 現在お使いのスマートフォンは？

〇 月に何回スマートフォンをダウンロードしますか？

〇 携帯電話で有料アプリは月にどれくらいのお金を使いますか？
 ①100円～200円 ②200円～500円 ③500円～1000円 ④1000円～2000円
 ⑤2000円～5000円 ⑥5000円～10000円 ⑦10000円～20000円 ⑧20000円～50000円 ⑨50000円以上

〇 Googleマップ、Encasquareなど位置情報サービスを使った事はありますか？
 ① あり ②なし
 ある場合はどんなサービスですか？

〇 位置情報サービスで何か困った事はありますか？

The Result of Interview

Shibuya

- Want shops to collaborate with coupon magazines
- Wanna know the inside of buildings by using web-map

Akihabara

- Children's security : especially inside building
- Collaboration with Sports

Odaiba

- Collaboration with Sports
- Wanna share meeting places more easily

The Result of Interview

Futako-Tamagawa

- Wanna share information with others
- Web-Map is not accurate.

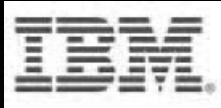
Atagawa

- Hate to expose personal information to unknown people
- Hate to use pay apps

Atami

- Plan to travel based on information of the Internet
- Wanna share information with friends who are close.

Stakeholder's Voice



IBM Japan don't marketing but provide IT solution to other companies mainly. The idea that users share the information in the limited group is fun and the simple solution is the best.



The idea of sharing the information with only the member of specified and closed community is very interesting.

Goal Statement

To

Get only high quality information

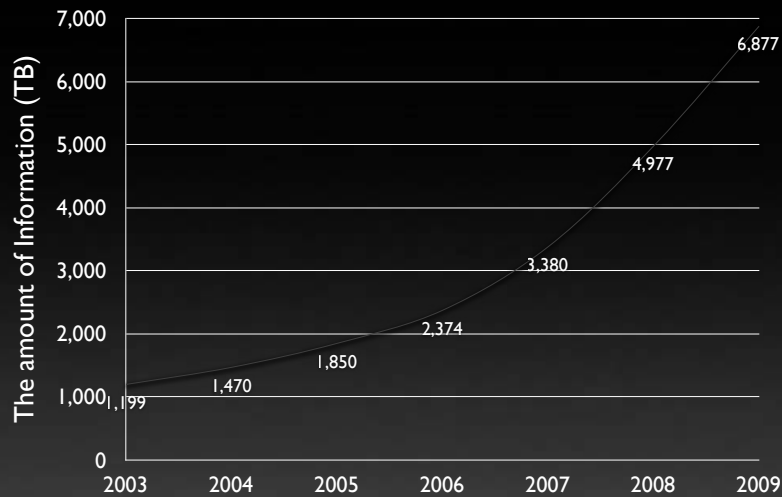
By

Analyzing the data

Using

Location Information
Sharing Information
Reliance among Friends

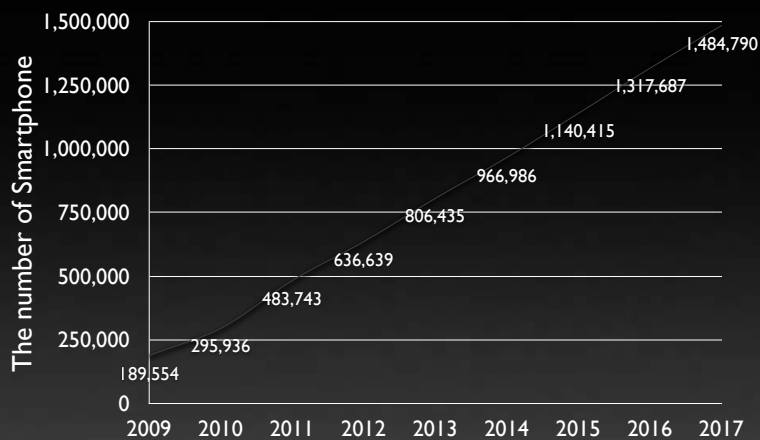
Increasing the Amount of Information



(Referring) Ministry of Internal Affairs and Communications, "The number of users of Search Engine on the Internet", 2009

Increasing the number of Smartphone

The forecast of Smartphone Shipment



(Referring) IDC, "The forecast of Smartphone Market", 2011

Derivation of Rovamy

$$\text{Rovamy} = \text{Rova(Donkey)} + \text{Mimi(Ears)}$$

For catching more useful information

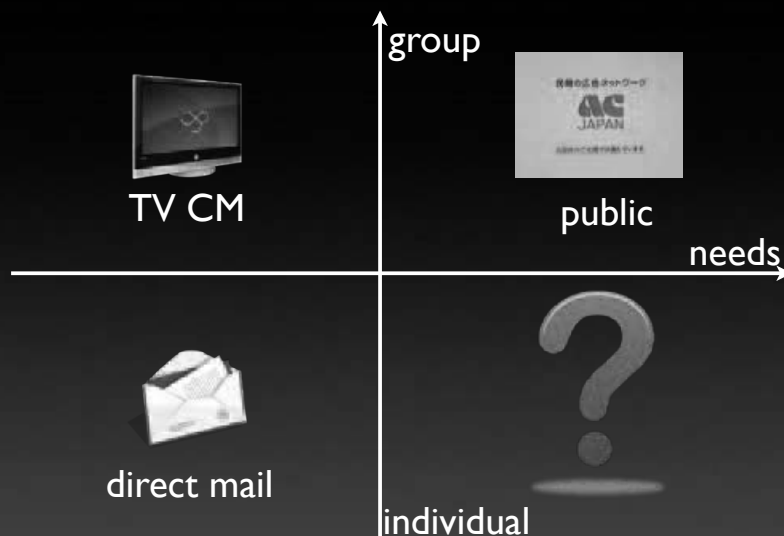
Story of "King Midas has donkey's ears"

A king, who has donkey's ears, had kept the secret except a barber. One day the barber shouted the secret into a well, then it echoed

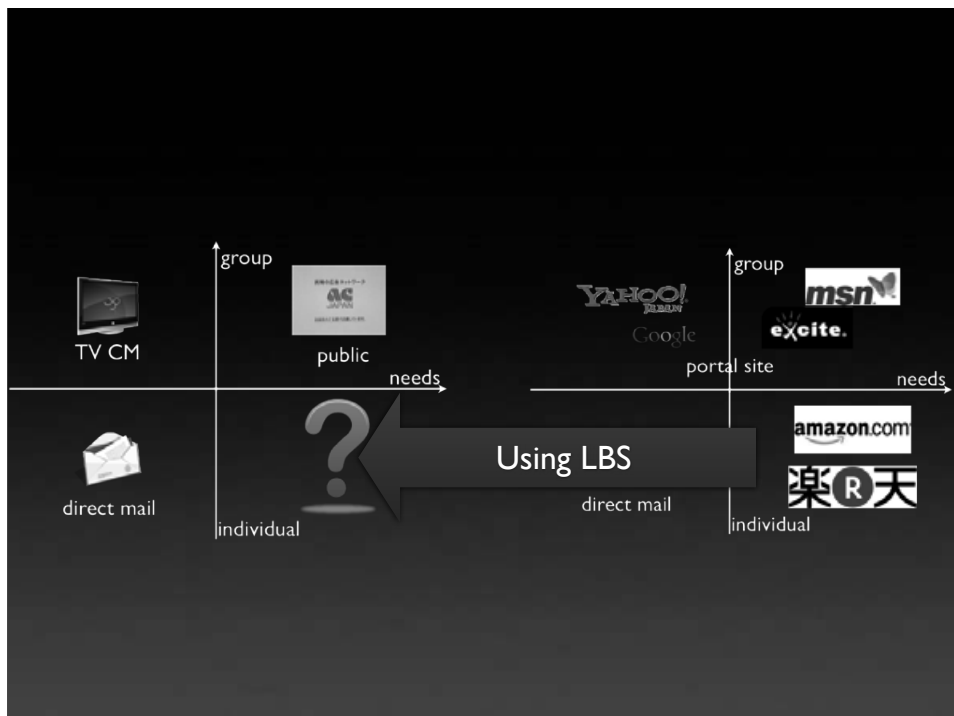


from other wells in all the city and the fact become famous. After that, the king said "I have these ears to be able to hear everyone's opinion." as an explanation.

How to Promote Real Tenant



How to Promote the Internet



$$NPV = \sum_{n=1}^5 \frac{FCF_n}{(1-r)^n}$$

$$FCF_n = \Delta x_n N_n R_e - \overline{C_1} - \overline{C_2}$$

$$r = 5\%$$

Δx_n = increase of profit

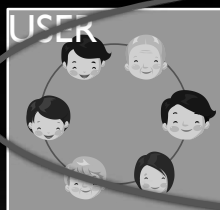
N_n = number of company

R_e = revenue share = 30%

$\overline{C_1}$ = operating cost

$\overline{C_2}$ = expense cost

Stakeholders' Want Analysis



Easy to communicate and get reliable information

Real Estate
Owner

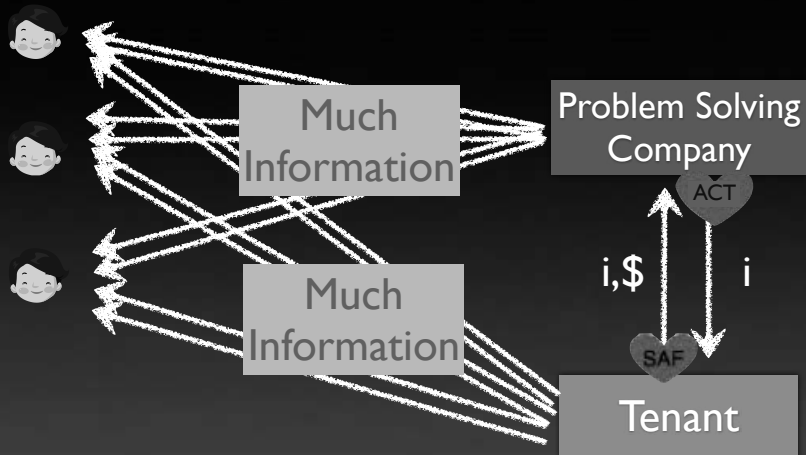
Increase the number of customers and the amount of sales

Tenant



Make the new LBS platform

Current Business Model



Persona



Name : Mayumi
Gender : Female
Age : 21

- She lives in Hiyoshi, Yokohama.
- She has many friends there and often chat with them.
- She wants to eat chicken on X'mas.
- She wants to hold a party and enjoy with friends nearby the place.

Persona



Name : Fumie & Yone

Gender : Female

Age : 75

- They live in Kyoto.
- They often communicate with each other by e-mail.
- They want to eat a hot-pot, nabe outside.
- They want to know a delicious restaurant.