

# Proposal for Attractive *ASAICHI* website based on Expanded Participatory Design Process Approach

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**Abstract:** Most system designers propose new systems using their intuitive sense based on ambiguous input (or specs) from the client. Clients do not have adequate system knowledge which results in communication difficulties between clients' wants, users' needs and system requirements. This approach also requires additional system design work after installation. We proposed a new *HAKODATE ASAICHI* website (*ASAICHI* website) based on specs determined by an Expanded Participatory Design Process Approach (EPDPA). EPDPA involves all the players from the beginning: designers, programmers, the client, system analysts and consultants. Using the *ASAICHI* website, Users can search and purchase various seafood products, souvenirs and check sightseeing information for *HAKODATE*. In January, 2009, Mr. Kato, a professional system analyst, conducted many *HAKODATE* website evaluations, including our *ASAICHI* website. Six evaluation criteria were used: 1) a get-level search engine, 2) comprehensive website evaluation, 3) accuracy of HTML files, 4) degree of conformance to global standards, 5) appearance-ratio of keywords and 6) bookmark registration number count. Our new *ASAICHI* website conforms to these criteria. From the results, we believe that a website based on our EPDPA ensures a superior system design product.

**Key words:** *Participatory Design, Information design, website.*

## 1. Introduction

There are still some traditional markets in *HAKODATE*. However, the numbers of traditional markets is steadily decreasing due to the large number of new big supermarkets and department stores. Probably the most famous market is *HAKODATE ASAICHI* (*ASAICHI*) near by *Hakodate* Station. *ASAICHI* means *Morning Market* in Japanese. *ASAICHI* is also a very popular tourist destination. Because of *ASAICHI*'s position as a tourist spot, the city of *HAKODATE* often subsidizes events and festivals for the market. *ASAICHI* has had a website for 17 years and often uses it for sales and promotion. Users can search and purchase various seafood products, souvenirs and check sightseeing information for *HAKODATE*. However, the existing website system has some problems, so the administrative board of the *ASAICHI Cooperative Association* decided to modify and upgrade their system.

Most system designers propose new systems based on ambiguous input (or specs) of the client. Clients do not have adequate system knowledge that results in communication difficulties between clients' wants and users' needs and system requirements. This approach also requires additional system design work after installation. Because of the lack of communication between the 'User-side' and 'Designer-side' using the normal system development process, the EPDPA was chosen in this research. Although there are researches available for

Participatory Design Process, the researches focus only on the relationship between the user and designer [1-3]. There is still a lack of research on bringing together ‘User-side’, ‘Designer-side’, ‘System Engineer-side’, and ‘Client-side’ in the information system design field.

Consequently, our proposal for the *ASAICHI* website was based on a broader meaning of Participatory Design Process that included ‘User-side’, ‘Designer-side’, ‘System Engineer(SE)-side’, and ‘Client-side.’ All of the parties are a part of the design process. The results of our EPDPA demonstrate its superiority over the traditional design process.

## 2. Method

The new *ASAICHI* website was proposed using EPDPA for to facilitate and enhance communication between all parties (Fig. 1). EPDPA required the necessary parties to meet and discuss more often. Figure 2 shows the design process flow with the numbers representing the number of people.

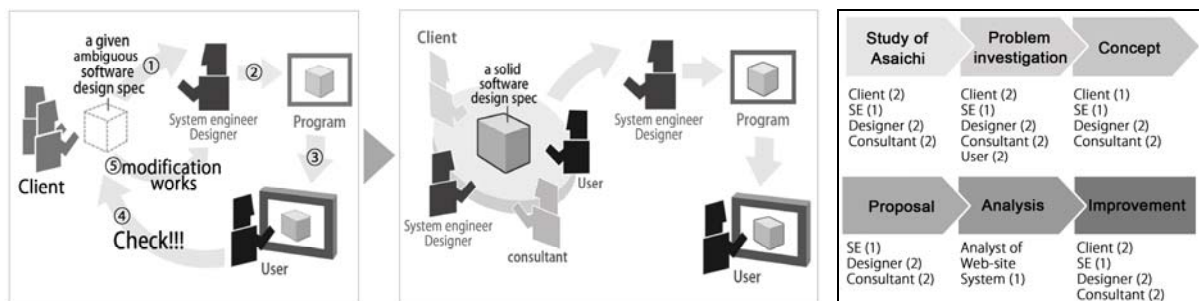


Fig. 1 Traditional Design Process (left) and EPDPA (right) in this research

Fig.2 Design Process Flow

### 2.1 Study of *ASAICHI* and the existing *ASAICHI* website system

Mr. *YOKOSHIMA* (president of the *HAKODATE ASAICHI* Cooperative Association) as ‘Client-side’ explained the *ASAICHI* and the existing website in ‘SE-side’, ‘Designer-side’ and ‘Consultant-side’. This work process is important to decide a direction and a concept for proposal of new website.

### 2.2 Problem Investigation

A total of nine people (two Designers, one SE, two Clients, two Consultants, and two Users) used and analyzed the existing *ASAICHI* website. They used the existing system as is, and cited problems with eight main pages: *Top Page*, *What’s New*, *About ASAICHI*, *Access Map*, *Shop Introduction*, *Coupon Page*, *About ASAICHI United Association* and *Overall*. Next, they evaluated and graded 46 criteria. The grading used was Totally Unsatisfactory, Unsatisfactory, A Little Unsatisfactory and No Problems. Using the KJ method by four people, the 46 criteria were then categorized into four categories.

Based on the results, the data was broken down into the following categories: *Appearance*, *Arrangement of Information*, *Construction* and *Etc*. The 46 criteria were rated on a four-point scale to help visualize and prioritize the necessary improvement areas. This work process could prevent differences of opinion and future miscommunication between clients, designers, and SE because everyone’s opinion was heard, identified and quantified. Table 1 shows the results.

The biggest problems were the following categories in order of magnitude: *Overall*, *Shop Introduction*, *Top Page* and *Access Map*. The results of the criteria scores showed that *Arrangement of Information* was the biggest problem in the current website system (Fig. 3). The result means that the existing website needs to improve *Arrangement of Information* before *Appearance*.

Table 1. Criteria Score Results

Designer	SE	Client	User	Consultant	Total	Category by the KJ method	Problems on the existing system				
<b>Top Page</b>											
3	1	2	2	3	2	1	2	2	18	Arrengement of Information	Unclear wording "Learnig by Experience".
2	1	2	2	0	2	2	1	2	14	Arrengement of Information	Mixing with selectable and unselectable options under "Learing by Experience".
1	2	0	2	2	3	3	2	2	17	Arrengement of Information	Not useful search function within this website.
3	2	3	2	3	3	3	3	2	24	Arrengement of Information	Lack of information on top page.
1	0	1	1	3	1	1	1	2	11	Appearance	Illegibility by overlap of letters and photo.
1	1	2	1	3	2	2	1	2	15	Appearance	Unclear link anchor on a big client name.
2	2	1	0	2	0	0	0	1	8	Appearance	Unprominent logo mark in bottom of page.
<b>What's New</b>											
1	1	3	0	1	0	1	2	2	11	Appearance	Needless triangle eye-catchers in the beginning of information lines.
0	2	3	3	3	3	3	0	3	20	etc.	Unrenewal old information in What's New column.
<b>About Asaichi</b>											
2	2	2	1	2	2	1	2	2	16	Construction	Inappropriate categorizing of original goods.
2	2	2	1	2	2	1	2	2	16	Construction	Inappropriate categorizing of prize winners page.
0	0	0	3	3	3	3	0	3	15	etc.	Unrenewal old names of prize winners until 4 years before.
<b>Access Map</b>											
3	2	3	3	3	3	2	3	2	24	Arrengement of Information	Lack of access map for all transportations.
2	2	2	1	3	0	0	2	3	15	etc.	Useless PDF files.
2	3	1	1	2	0	0	2	3	14	Appearance	Useless map on PDF file.
2	3	2	3	3	1	0	3	2	19	Arrengement of Information	Lack of information on map
2	2	1	1	2	2	0	2	3	15	Arrengement of Information	Inappropriate categorizing of Hakodate sightseeing map.
<b>Shop Introduction</b>											
3	3	3	3	2	3	3	3	3	26	Appearance	Mojbake on almost pages of each shop introduction.
2	3	1	2	2	0	3	3	2	18	Appearance	Illegibility charactors only pages of each shop introduction.
3	3	2	3	2	2	3	2	3	23	Arrengement of Information	No location map of each shop on shop introduction.
2	2	2	3	1	1	3	2	2	18	Arrengement of Information	No information to contact to shops, such as phone number.
2	1	1	1	2	0	2	1	3	13	Construction	Too many detailed categorized groups on shop introduction. Categorizing matter.
2	1	0	1	2	3	2	0	2	13	Construction	Mixing different kind of shops on one same page.
3	3	3	1	2	2	3	3	2	22	Appearance	Different page style only for shop information page. Lack of continuity.
3	2	2	2	2	1	0	2	2	16	Arrengement of Information	Poor information
0	1	0	1	2	1	2	0	1	8	Arrengement of Information	No reason to show hotel top page graphics in hotel introduction page.
0	1	0	2	2	0	1	0	2	8	Arrengement of Information	Lack of information about more hotels around Asaichi.
3	3	2	3	3	2	2	3	2	23	Arrengement of Information	No clue to find the shop that has a coupon or website
<b>Coupon Page</b>											
1	1	0	2	2	2	0	2	2	12	Appearance	Inappropriate graphic, banana and orange, on farm products coupon.
2	2	1	1	2	3	1	2	2	16	Construction	Many steps to print a coupon
2	2	1	2	3	2	2	2	2	18	Arrengement of Information	Red coupon information only on shop name. No all maps to find

### 2.3 Concept

With all parties meeting, some keywords and the color scheme for the new site were selected. The key words were *Animated Feeling*, *Fresh*, *Friendly* and *Cheerfulness*. The main color chosen was red. This work was a very important part of the EPDPA as it prevented future disagreements and revisions.

### 2.4 Proposal

The results in Figure 3 show that most of the problems are concentrated in *Overall*, with *Shop Introduction*, *Top Page* and *Access Map* also needing improvement. From these weighted evaluation results we determined our priorities for work concentration. All proposals were the result of everyone's input and evaluations.

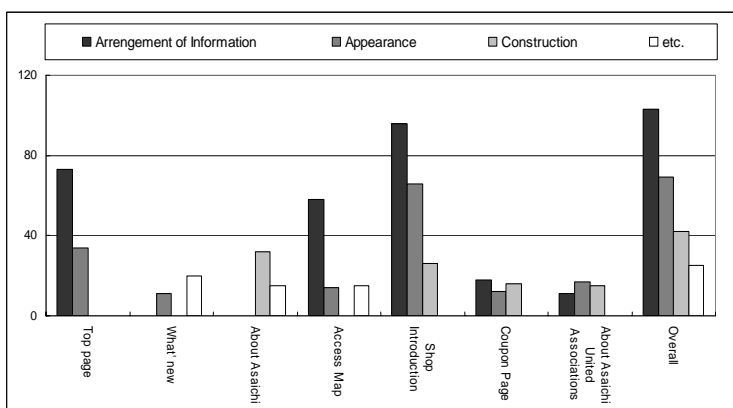


Fig.3 Problem categories on the web-pages



Fig.4 Top page of new ASAICHI website

### 3. Analysis

#### 3.1 Clients' evaluation

Table 2 shows the results of evaluations done on our proposed site by the administrative board of the *HAKODATE ASAICHI* Cooperative Association. They were extremely impressed with our new *ASAICHI* website based on the EPDPA and they became aggressive opinion leaders within their Association to use new website.

Table 2 the evaluation result by Administrative board of *HAKODATE ASAICHI* cooperative associations

Positive Comments	Negative Comments	To Themselves
The right atmosphere of <i>ASAICHI</i> by good main color.	Difficult to understand locations of each shop.	A need of international versions (English, Korean and Chinese).
The new system is easy to use.	Too small font size for elders.	A scheduled survey to improve the new web-site with EPDPA.
The blog of new system shows friendly.	Lacking contents (Coupon and Motion picture)	A need of User's feedback to new web-site.
Simple information to easy understand.		A need of plan to lead users to <i>ASAICHI</i> .
Organized information to compact.		
New bland power of <i>ASAICHI</i> market,		

#### 3.2 Professional system analyst's evaluation

In January, 2009, Mr. *KATO*, a professional system analyst, conducted many website evaluations for *HAKODATE*, including our new *ASAICHI* website. Table 3 shows that our *ASAICHI* website conforms to the six criteria he used.

Table 3 the evaluation result by *KATO*

Criterion	Matter	Evaluation	Criterion	Matter	Evaluation
A get level search engine	Google	○	Accuracy of HTML files	Top page	21
	Yahoo!	○	Degree of conformance to global standards	Top page	27 Errors
	MSN	○		Appearance ratio of keywords	Hakodate
Comprehensive web-site evaluation	Rank (S,A,B,C,D)	C	Asaichi		6.88%
	Points	40 / 170	Kankou		1.96%
	Google page Rank	4 / 10 / 09	Shoukai		0.98%
	Number to be linked (Google)	31	Mise		0.98%
	Number to be linked (Yahoo!)	7	Bookmark registration number count	Number of registered	25
Self-domain acquisition	○				

### 4. Conclusions

Through EPDPA, the following results were clarified: 1) Communication based on client needs, designer and SE inputs and user comments helped us to evaluate and analyze the current system more effectively. 2) The very specific, quantifiable and achievable design specs we determined were the direct result of the EPDPA. This approach and the results reduced needless modification works. 3) New *ASAICHI* website was evaluated by the client and a professional system analyst. Their conclusion is that our new website is a great system and better than their current one.

Based on these results, using the EPDPA is superior to the traditional design process. Our next step is to conduct user feedback evaluations to further improve the *ASAICHI* website.

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