

Managing Business Innovation With Web Technology To Reach Hybrid Consumers

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Abstract— Purpose - Managing business innovation with web technology is a critical issue for Thai SME (Small and Medium enterprises) entrepreneurs. The statistics of secondary data had shown that the second important factor that has had an impact on B2C (Business to Customer) model businesses is the management of online commerce and the way entrepreneurs design and create websites to reach customers.

This study proposes the guidelines for designing information architecture of an e-commerce platform (model B2C) by understanding future online society in Thailand and new consumers' behaviors called hybrid consumers who have a second life in the internet world and interaction with companies that combine physical and virtual transactions.

Design/methodology/approach - Use of qualitative methods and specially structured interviews with fifty selected young generation individuals, web design specialists and secondary data to see the trend of technology and demand site.

Findings - The study has found that

Firstly, 74.0% of Thai companies are using the B2C type.

Secondly, significant information has shown that 70.8% of them are using ready package websites which are web 1.0 technology.

Finally, the finding in this research showed that a new platform must transform the user experience for buying on-line into something personal and unique.

Originality/value - There is plenty of advice on creating a website or information architecture but no actual model or B2C platform. In terms of reaching new hybrid consumers, this study provides an understanding of them.

Keywords: E-commerce; hybrid consumer; B2C; B2C platform

I. INTRODUCTION

Today's entrepreneurs are trying to develop different products and services to compete in the global market and are looking for information technology that has potential to add a higher value to businesses and consumers. Because they understand that information technology has become more significant in products and services development life cycle for an innovative firm.

In an unstable global environment, the traditional factors like capital, land, and labour are not the only tools for firms in this dynamic environment. Information technology is

a new method [1] that a firm should have invested in to be competitive in a knowledge economy.

The global economy is growing at the speed of light. Thailand has 2,350,274 [2] SMEs (Small and Medium Enterprises) playing a major role in economic development.

Being that the global economy is competitive; entrepreneurs should have technology foresight to find the best way in using web technology to reach hybrid users [3] and thus empowering their businesses.

Statistically, e-commerce in 2007 [4] has witnessed a powerful emergence of entrepreneurial activity in Thailand and its value has increased dramatically.

E-commerce is one part of information technology that has a lot of advantages over the traditional model "Brick and Mortar" [5].

However, in implementing E-commerce into a business process, there is plenty of advice on creating a website or information architecture but there is no integration between technology and a hybrid consumer. The studies contain extensive platform guidelines on information architecture for the B2C model. Thai entrepreneurs can use these platform guidelines to design e-commerce sites to make them more usable. All data are findings from detailed usability studies of Thai sites with young users' interviewed, web master, web designer and expertise.

From statistics of secondary data, they had shown that the second important factor that had an impact on volume of B2C is the management of online commerce and the way entrepreneurs design and create websites to reach customers.

Without integrating innovation technology [6] into a firm's process and lack of understanding of hybrid consumers, entrepreneurs may lose business in one day.

1.1 Study Objectives

The objectives of the study are:

The main objective of this study is to propose guideline of developing B2C web platform by determining the integration between Hybrid consumers' behaviours and web technology resulting in appropriate information architecture for the e-commerce website model B2C for Thai entrepreneur with the understanding of the future online society in Thailand.

The study addresses two main research questions. They are:

A. What is appropriated B2C platform to reach new hybrid users?

B. What characteristics of Thai hybrid users from focus group?

1.2 Research Methodology

The study took a qualitative approach using an in-depth interview as well as workshop with 50 young student between ages of 19-22. Results were also mapping with web functions to yield information architecture in a statistics. This empirical study provides to an understanding of young generation’s behaviours that related to using of web technology functions.

II. LITERATURE REVIEW

The study of a new B2C platform or technological invention into a marketable product or process requires the existence of some sorts of theories, scholar’s opinions, journals and existing technology as well as statistic of E-commerce in Thailand.

A. Technological Innovation

Integrating innovation technology into a firm’s process is a very important strategy today. Innovation refers to the economic application of new idea [6], firm need to input this process into all stage of business life cycle.

Many studies of transform this process into company has shown that this process is an important factor.

“Technological innovation is described as a process which transforms idea to the commerce (Subrahmanya, 2005; 269)” [6].

Innovation also characterizes as “a change in technology which is manifested in the development of new products” (Methe 1992 in Stock, Greis, Fischer, 2002; 537) [6].

“The role of technological innovation in this point is for business successes (Gaynor, 1996; 9.1-9.2)” [6].

“In many industries technological innovation is now

the most important driver of competitive success (Schilling, 2005; 1)” [6].

“Technological innovation can create new industries and transform or destroy existing ones (Cooper, Schendel, 1976; 61)” [6].

B. Information Architecture: the concept for finding a new look of B2C

Building new usability to catch new users, we need to understand the concept of information architecture. To derive a new interface of B2C, we have to review information and ideas as shown in an iceberg diagram [8], user (needs and behaviours), content (structure and meaning) and context (culture and technology).

The term “information architecture” was first coined by Richard Saul Wurman in 1975. Wurman’s initial definition of information architecture was “organising the patterns in data, making the complex clear”. [7]

To translate the need of users and current technology into structuring, we have to define information architecture.

In Information Architecture for the World Wide Web, Lou Rosenfeld and Peter Morville define information architecture as

1. The combination of organization, labelling and navigation schemes within an information system.
2. The structural design of an information space to facilitate task completion and intuitive access to content.
3. The art and science of structuring and classifying web sites and intranets to help people find and manage information.
4. An emerging discipline and community of practice focused on bringing principles of design and architecture to the digital landscape.” [7]

C. B2C function in Thailand and its technology

TABLE I
Technology perspective: Elements of existing functions in Thai B2C e-commerce website.

| Functions | Technology | Web 1.0 | Web 2.0 | Web 3.0 |
|---|------------|---------|---------|---------|
| Self adjustable such images, layout, colour, banner, font and background. | CMS | x | | |
| Template and layout sample | | x | | |
| Changing the appearance of your site: A tool to create intro page(Page or flash before entering web site) | | x | | |
| Web site administrative system | | x | | |
| Managing extensions | | | | |
| Support HTML And JavaScript | | x | | |
| Rich-Text Support | | x | | |
| Statistics report on each content | | x | | |

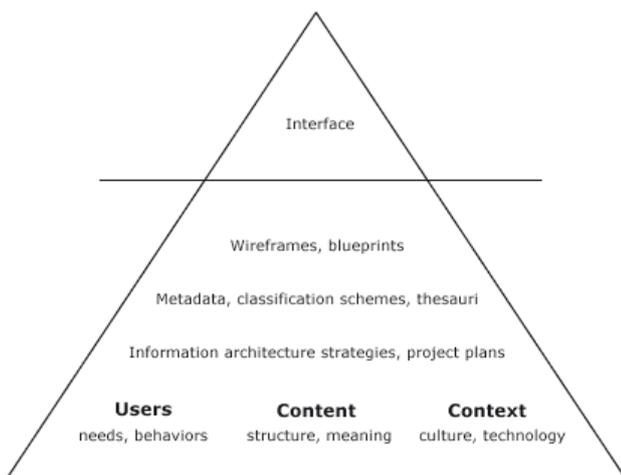


Fig. 1 An iceberg diagram [8]

| | | | | |
|---------------------------------|--|---|---|--|
| Web board Management System | | x | x | |
| Link management system | | x | | |
| Photo Gallery management system | | x | | |
| Download | | x | | |
| Product Catalog | | x | | |
| Search System | | x | | |

As shown in table I, B2C website in Thailand is now still using web 1.0 in its application, which mean that entrepreneurs do not use the new concept of web 2.0 in term of collaboration concept and social networking in doing their business. Web 2.0 applications have proven important for innovation, however, Thai entrepreneur are still not efforts in utilizing social networks for their external marketing. According to a review of more than 30 websites in this study, B2C platform currently used by entrepreneur's shows that 90% the web applications in their websites are web 1.0.

D. Situation of Thailand's e-commerce

TABLE II
THE NUMBER OF ONLINE USERS IN THAILAND [9]

| Year | Total | % of Growth | Year | Total | % of Growth |
|------|-----------|-------------|------|------------|-------------|
| 1999 | 1,500,000 | +123.8% | 2008 | 16,100,000 | 20.0% |
| 1998 | 670,000 | +204.5% | 2007 | 13,416,000 | +17.5% |
| 1997 | 220,000 | +2,142.9% | 2006 | 11,413,000 | +15.18% |
| 1996 | 70,000 | +55.6% | 2005 | 9,909,000 | +42.17% |
| 1995 | 45,000 | +95.6% | 2004 | 6,970,000 | +16.17% |

Statistics from NECTEC showed that internet in Thailand is still low comparing to the population of 70 million. However, the internet's growth has been truly remarkable and it's the sign for entrepreneur to be prepared for doing business.

On the other hand, statistic of e-commerce value in 2008 has witnessed a powerful emergence of entrepreneurial activity in Thailand and its value has increased dramatically. Statistics illustrate this fact. For example, in 2008, the sales value on e-commerce was 427.46 billion baht (approx. \$12.950 billion). 54.8% (233.982 billion baht) from e-Auction by the government and 45.2% from non-government online business (B2C, B2B). First, from surveys (40,200 entrepreneurs interviewed and only 1,678 completely replied) of entrepreneurs in Thailand in 2008 by the National Statistical Office of Thailand found that 74.0% of small online businesses has staff of less than 5 people, 29.4% of them are in the fashion industry, gems and jewelry industry, 21.1 % is in electronic peripheral, computer and internet and nearly half of them are "Click and Mortar". Second, industries that mostly use B2C model in doing e-commerce are textile,

apparel, fragrance, cosmetics, travelling, hotel, computer and insurance. The entrepreneurs' experience in using e-commerce from surveyed businesses is approximately 3 - 5 years.

TABLE III
TREND OF ELECTRONIC COMMERCE'S VALUE
CLASSIFIED BY E-COMMERCE MODEL

| Model | 2007 | | 2008 | | % of Growth |
|-------|---------------------|-------|---------------------|-------|-------------|
| | Value (\$ millions) | % | Value (\$ millions) | % | |
| B2B | 2,415.94 | 26.1 | 3,858.33 | 29.8 | 59.70 |
| B2C | 1,439.42 | 15.6 | 1,921.97 | 14.8 | 33.52 |
| B2G | 5,391.88 | 58.3 | 7,173.03 | 55.4 | 33.03 |
| Total | 9,247.24 | 100.0 | 12,953.33 | 100.0 | |

Third, the survey shows that 25.9% of sale on B2C model is from the automobile industry and consumer products. The survey also showed how these entrepreneurs do marketing for their online business. The research found that approximately 42.2 percent of e-Commerce businesses are using public relation marketing and 29.0% of those are using both offline and online marketing. For online marketing, 66.7% advertised on Web-boards, 46.5% on Search Engines and 42.2% by e-mail. Additionally, the table III also implied that the growth rate of B2C model's value is still significant (33% increased from 2007).

Fourth, for the ownership of a website, 73.5 % of online entrepreneurs has their own website, 16.8% did not have own website but they have planned to build it up. The remaining 9.7 % have no plans. Among entrepreneurs who have their own website, 70.8% use standard packaging website and only 14.9 per cent hire developer to build website up to their requirements.

Fifth, the logistic statistic of e-commerce showed that 59.3% deliver product by post, 46.3% by messenger, and 30.4% by logistic provider.

Sixth, time for delivery to customers, 42.8% of online entrepreneur deliver goods within 2 - 3 days and another 22.0% is within 1 day and the problem of the delivery business on survey found that 67.9% came from high transport cost, 30.3% is from delay of delivery and 27.2% is quality of delivery.

Finally, the survey shows that entrepreneur still face many problems that are obstacles in doing e-Commerce. The data showed that 21.3% have identified obstacle on data security or antivirus attack, 20.7% feel no confidence in doing e-Commerce and 20.7% is the low speed of internet broadband.

Moreover, entrepreneurs indicate that they need support from government in many areas such as promoting support for doing e-Commerce, e-business consulting, skill and knowledge training.

E. Understanding the Characteristics of Hybrid consumers

To understand the behaviours of consumers is studying a theory of consumers' act on obtaining consumption and shopping goods and services, including decision-making

processes that occur both before and after such action. E-Commerce is one channel of services that relates to the process of purchasing decisions.

Today's consumers are a centaur [3], lifestyle of consumers has been changed by powering of technology, it allows consumers to access and receive information quickly, communicate with others across the continent in the seconds, view products from around the world as needed. Consumers today are impatient with waiting and not satisfied with the delay of delivery and with a non-technology's service.

Moreover, consumers need to involve in products development life cycle which means they want to customize products that they want to consume not standardization. The communication among them has changed radically, they are now interact via media for example email, mobile phone, internet social network service such as facebook.com, hi5.com, twitter.com/or instant messages rather than face to face, for social, professional, educational or other purposes. Moreover, they want to connect to each other anywhere anytime with no limitation of border. Entrepreneurs today have to review the way to do with new consumer's behaviours because they have already changed their life style according to the influence of technology speed, "the 3-click world".

Another theory for understanding hybrid consumer, Peter Kollock and Marc Smith [10] gave the definitions of people in contribution to online communities that "A person is motivated to contribute valuable information to the group in the expectation that one will receive useful help and information in return" called the Anticipated Reciprocity. They want to increase recognition from joining virtual community. They may want to share their valuable information in expectation of changing the world, sense of efficacy and for the sense of community, users draw other users (chromatic 2002), community is built up by motivating people to receive direct responses to information contributions among them by allowing people to reply back to contributions.

However, another part of the consumers are still not changed. They are still satisfied with touch and see. They are still emotional and psychological needs as well as difficult to predict.

Consumers are living between the virtual world and real world. Some consumers still like to read short news from e-mail, send e-mail via Internet but still read newspapers, some compare product information from the Internet as well as love to go shopping real products at department stores.

Statistic from ABAC poll[11] that researched on young generation age between 15-24 shown that type of online web that they always participate are as following table.

TABLE IV
TYPE OF WEBSITE ACCESSED BY THAI GENERATION
(AGE BETWEEN 15-24) [11]

| | |
|--|-------|
| BLOG and Diary for example MSN Space, Exteen | 42.7% |
| Online Encyclopaedia for example Wikipedia | 38.3% |
| Photo gallery for example Flickr | 28.2% |
| Video online for example You Tube | 27.7% |
| P2P download for example Bit torrent, Kazak, Lime Wire | 23.9% |

TABLE V
PERSONAL AND LIFESTYLE CHARACTERISTICS
BY GENERATION [13]

| | Veteran (1922-1945) | Baby Boomers (1946-1964) | Generation X (1965-1980) | Generation Y (1981-2000) |
|----------------------------|---|--------------------------------------|--|--|
| Core Values | Respect for authority Conformers Discipline | Optimism Involvement | Skepticism Fun Informality | Realism Confidence Extreme fun Social |
| Family | Traditional Nuclear | Disintegrating | Latch-key kids | Merged families |
| Education | A dream | A birthright | A way to get there | An incredible expense |
| Communication Media | Rotary phones One-on-one Write a memo | Touch-tone phones Call me anytime | Cell phones Call me only at work | Internet Picture phones E-mail |
| Dealing with Money | Put it away Pay cash | Buy now, pay later | Cautious Conservative Save, save, save | Earn to spend |

Before we reach to the characteristics of Hybrid consumers, generation Y will be the first information to review related lifestyles that resulting in decision making on buying online.

Generation Y was born during 1981-2000 and later, and just entering the workforce. Generation Y familiars with internet technology, communicate and work with laptops, mobile phones, e-mail and text.

III. EMPIRICAL SURVEY AND FINDING ON RESEARCH.

From the study, the research had been studying on four dimensions, Thai e-commerce business view, new consumer's behaviors, and web technology and e-commerce statistic. Additionally, the study used qualitative methods especially structured interviewing and secondary data to see the trend of technology and demand site as well as in-depth

interview and workshop with filthly selected Y generation. This study found that firstly, in term of Thai e-commerce business view, 74.0% of electronic commerce's companies in Thailand are small business that has staff less than 5 employees and 72.5% of them are a B2C type. Secondly, significant information shown that 70.8% of them are using ready package website solutions those are out of date from web technology. The research on web solution also indicated that web technologies used in package program are web 1.0 which is not compatible with hybrid user's behaviors. Finding new consumers' behaviors: Hybrid user in Thailand the information of behaviors from an in-depth interview and workshop with filthly selected Young generation are show in following table.

A. Finding new consumers' behaviours: Hybrid user in Thailand

The information of behaviours from an in-depth interview and workshop with filthly selected Y generation are show in following table.

TABLE VI
PERSONAL AND LIFESTYLE CHARACTERISTICS OF THAI YOUNG GENERATION

| Generation Y in Thailand (Interviewed age between 19-22 years) | |
|---|--|
| Core Values | Earn to live much more than in the past, More Confidence, Virtual social community participate |
| Family & Life | Single families, Less time participate with family's activity due to economy issue, Online and internet use mostly at night from 8.00 pm – 1.00 am |
| Education | An incredible expense |
| Work Ethic and Values | Always ask reason, Multitasking and speedy tasks Tenacity, Dream catching, Stick with TV, WEB, Mobile and not reading book |
| Work is ... | Fulfilment, Work Balance, Wok for Money, Money is everything, Looking for much paid work rather than hard work |
| Leadership Style | Stay in a virtual community, use web community for increase recognition and sense of efficacy |
| Interactive Style | Participative, always use net more than face to face Hate command people, Sharing and collaboration. Sharing and collaboration |
| Feedback and Rewards | Whenever I want it, at the push of a button, Meaningful work |
| Messages That Motivate | You will work with other bright, creative people Shown to public/TV/radio |

TABLE VII
Thai e-commerce website's technology and Management perspective from in-depth interviewed.

| | | |
|-------------------------------|---------------------------|---|
| Communication and application | Communication Application | [1] Young generations prefer simply design for example Google. [2] Web site's application should have combination of physical and virtual interaction. |
| Business and Commerce model | Customization Commerce | [3] Products and services customize tools. [4] Tools on web for creating their own fit. |
| Service model | Convenience | [5] Personalized pricing tools. |
| Community | Content Community | [6] Virtual community for anticipating and sharing |

As summary, the characteristics of new users from the study above are shown in table.

B. Finding Proposed guideline B2C platform

Finally, Web 2.0 doesn't have a hard boundary [12]; after researching with 50 young users (age of 19-21), the finding in this research founded that new platform must transform the user experience for buying on-line into something personal and unique.

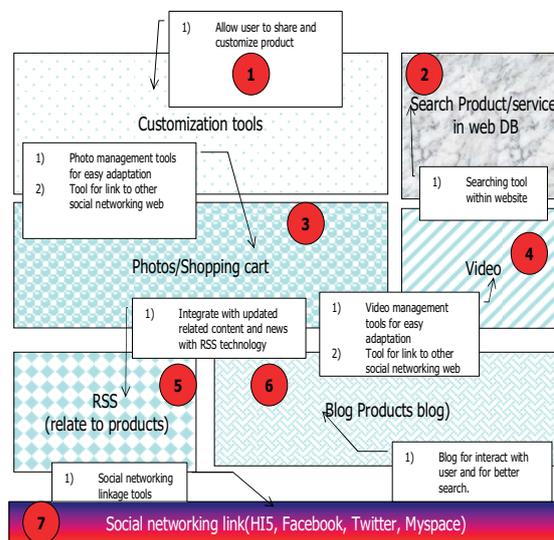


Fig. 3 The guideline of new platform is as figure below

1) Customization tools: a tool that allow users to set their own preferences for a site experience or for products and service blending with their requirement.

2) A searching tool for user to looking thoroughly web in order to find something or someone on web.

3) A Photo/shopping cart tool: a tool that allow user conveniently upload and link photo to their social network web like Face book while on the go.

4) A video tool: a video sharing tool on that allows users to upload and share videos, and view them.

5) RSS tool: Really Simple Syndication tool that used to publish frequently updated related contents and news from other web.

6) Blog tool: Blog will be for business purposes either used to enhance the communication with user or externally for marketing, branding or public relations purposes.

7) Social networking link tools: allow user conveniently upload and link all information to their social network web like Face book while on the go

IV. CONCLUSIONS

Understanding new user behaviors has shown to be critical in e-commerce business. Creating an effective web site to interact with new user's behaviors can help the company to gain information about market needs, derive an experiences sharing among customers as well as use it as a tool for cost-effective marketing.

New web platform techniques need to reach hybrid user for urging them in visit and revisit. The recommendations are as following;

1) The structural design should have shared information tools.

2) New platform must be a combination of web 2.0 factions such as search, blog, video sharing game and navigation systems within web sites.

3) The linkage tools with current social network website for example facebook.com, HI5, twitter within web sites.

4) An emerging discipline of web 2.0 and community of practice focus on ability to interact with hybrid user through videos, discussion or instant messaging and in terms of community engagement with product development.

5) A simple design is needed for an easy use.

Creating an effective web to reach hybrid user, entrepreneur need to consider the following guidelines for creating effective communication.

- Understand users who are the intended audience of a website.
- Define a number of common web technology,
- Understand how to use technology concept of sharing and collaboration as well as social networking: connecting people to people.
- Review design principles with the concept of '3 click world'.
- Planning for who will maintain the content, and what do e-skills they require.

Developing an effective web site is an essential step for innovation firm to sustain in knowledge economy. This platform is a guideline for only SME within a small budget of below 70,000 Baht (~2,000 US\$)

Limitation of the study

- Depending on the interviewees, some answers might not be based entirely on students' opinions.

There might be subjective to the technology they have found during workshop.

- This platform has to be reviewed with SME's entrepreneur in real business situation again to prove that it is appropriated to hybrid consumers.
- Innovation on web technology itself is rapidly changed. Thus, new web technology, new applications and new devices may yield different results, and different type of innovation may also yield different platform.

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