

# Expanding the Experience of Museum Visitors with a Social Application on Facebook

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**Abstract**—Since the early 20th century, museums and art galleries have been responding to a changing, increasingly diverse society, wherein a broader public is interested in culture and/ or arts. They are adjusting their products or adopting the existing technology to the needs of this changing society in order to serve a larger part of the population and gain revenues. With a burst of very popular social media, several museums have utilized the social media such as Facebook, Blog, Podcast, MySpace, and Flickr to communicate with their visitors or interesting group of people. Many visitors will learn new things and gain new experience for a single visit at museum. However, there are a number of silent barriers against the visitor experience, especially for art galleries. This paper proposes a methodology for expanding the visitor experience. Our methodology utilizes the existing social media such as Facebook. We introduce a new application with design decision. The preliminary results are its framework and the evaluation method. We also present a case study on the Southeast Asian Ceramics Museum (SEACM) at Bangkok University, Thailand. By the interview with experts, our application is a new channel to be able to enhance and expand the museum experience.

**Keywords**- *social media; user networks; user experience; digital museums; virtual gallery; art museums.*

## I. INTRODUCTION

In the early 20th century museums have already experienced a shift from their historic mission of collecting, conservation, and research to a role of education and interpretation to serve a wider public. Museums are not longer purely seen as cultural attractions, but also as leisure places. Visitors are not even satisfied anymore with only products or services; they demand experiences, as addressed by Pine and Gilmore [1]. The focus of the visitors is thus not only directed on collections and exhibitions anymore, but also on sociable, recreational and participatory experiences [2]. Experiencing new things and learning new things are up to 65% and 56% of the motives for visiting the museum, respectively. But how do museums in practice deal with the visitor in his search for experiences?

In this paper, the focus is not only for searching a technique for expanding museum experience but also for managing

the after-effects of disasters. Nowadays, a number of natural disasters have been slightly increasing year by year and these are also the main threats against museums. When facing with natural disasters, museums have had a policy for protecting their collections safely on the moment. Unfortunately, the damaged museums might be temporarily closed for restoration. The following question is "how can museums continue run their museum missions, mainly focused on developing the visitor experience, as well as keep in contact with their member without annoying them?"

In order to place our research in the current academic debate and to translate the findings into practice, the following objectives are met:

- Examine the application of experience development for art museums in literature,
- Investigate the need of art museums in aspect of developing the experience of visitors,
- Design our proposed application of experience development, and
- Develop, install, and evaluate the proposed application.

In the primary stage, the contribution of this paper is to serve the first and third objectives in order to understand (1) a changing of museum mission, (2) definition of museum experiences, and (3) the necessary of a new approach/application to meet the museum mission. We also proposed our application on social media as a solution to expand the museum experience, especially the dimension on social context.

## II. MUSEUM EXPERIENCE

### A. Types of Experience

As addressed by Falk and Dierking [3], combination among individual, group of people, places can develop the experience of each museum visit. Three dimensions are the personal context, the social context and the physical context. The interaction of these three dimensions constitutes the way in which a museum visit is perceived by every individual museum visitor.

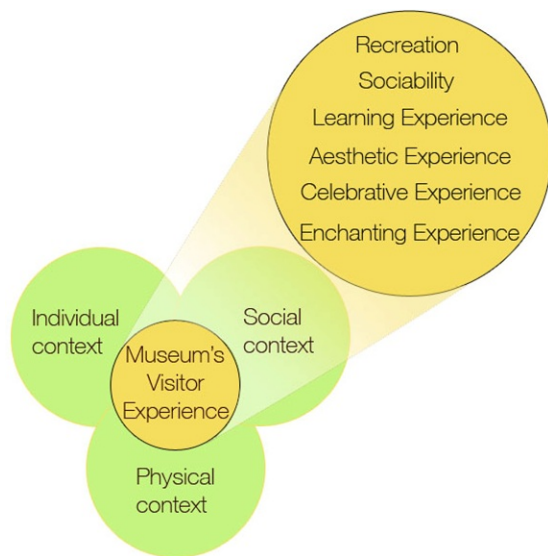


Figure 1. Concept of museum experience.

- **Individual.** The personal contexts involves a variety of experiences and knowledge, including varying degrees of experience and knowledge on the content and design of the museum, the visitors interests, and the visitors motivations and concerns. These factors together determine what an individual visitor appreciates, what he wants to do with the time available in the museum and what experiences he seeks for self-fulfilment. Every single museum visitor has different past experiences, related or not related to museum visits, which have an influence on the expectations and experiences in the museum [2].
- **Group of people.** The social context involves the interaction with other people in the museum. Most people visit museums in a group of friends or family and even people who go alone have interaction with other museum visitors or staff. The social interaction has a strong influence on the behaviour of people. Parents with little children show different behavioural pattern than a group of friends or an elderly couple. Also, the crowdedness of the museum is of great influence on the museum experience.
- **Place.** The physical context includes the architecture and feel of the museum as well as the objects and artefacts. Not only the placing of the artefacts, but also the size of the rooms, marble or carpeted floor, the sent, the presence of benches, a shop, a restaurant etcetera have a strong influence on the experience and behaviour of visitors.

From the aforementioned dimensions, the other experience types will be developed inside the visitors (as illustrated in Figure 1), but the formulation is depend on the intensity of each dimension. For example, the level of interaction among visitors that can develop a social network of special interest group for a particular museum. Increasing the degree of interaction will extend the size of social network. This is one of museum goals because the more shared knowledge and interest, the more experience will be perceived. The other types of experiences are listed below:

- **Recreation;** Visitors enjoy of free, relaxed, unstructured

time and activity playful and diversionary activity. They can try out interactive devices, sit down for a meal, shopping in a gift shop, etc.

- **Sociability;** Visitors meet with or participating with others, look at and spend time together with others, take part in shared, public activity.
- **Learning Experience;** Visitors gather and acquire information, perceive new things and new patterns, exercise curiosity and a sense of discovery.
- **Aesthetic Experience;** Visitors engage in sensory perceptions, especially visual and tactile, see objects with a view toward their beauty, rather than what is moral or useful, compare things and find patterns.
- **Celebrative Experience;** Visitors observe and honor a leader, event, group, or organization, share in historical achievements.
- **Enchanting Experience;** Visitors encounter things that uplift the mind, imagination, and spirit, find magic, delight, fascination, and rapture in things and places.

### B. Barrier of Developing Experience from Art Museums

Although museums almost all offer tangible objects, there are enormous differences in collections and missions [2]. Most museums have their own collection like SEACM, but there are also museums that own no collection at all; these are often childrens museums, science and technology centers and history centers. The objects they posses have the function of demonstrating science and technology. These museums integrate on average more realistic of experience than museums that own collections comprising valuable objects of art, nature or history. The followings are reasons:

- **Invaluable limited the visitor interaction.** The value and delicacy of the objects does not allow people touching or coming close and often the objects can only be on exposition in highly cultivated spaces, with the right amount and sort of light, humidity and temperature. This restricts the contexts in which the artwork can be placed and the possibilities for interactivity.
- **Individual preference.** History and natural history museums, anthropological and ethnographic museums on the other hand suffer less from this perception of tourists, because they are seen as exhibiting parts of everyday life of normal human beings in the past or present. Art museums have therefore a more difficult job attracting audiences attracted by entertainment and experience such as the culture-peripheral tourist. In addition developing memorable experiences for arts museums is more complicated, since the visitor relates less to the objects because they are less obvious connected to everyday life.

Therefore, art museums therefore have an added role in education, which can undermine, if not being outbalanced, the total multifaceted experience.

## III. SOUTHEAST ASIAN CERAMICS MUSEUM (SEACM)

### A. Background

The Southeast Asian Ceramics Museum (SEACM) at Bangkok University houses and preserved valuable collections



Figure 2. the Southeast Asian Ceramics Museum (SEACM) at Bangkok University, Rangsit Campus, Thailand.

of ancient ceramics. SEACM established in 2002 is responsible for housing and preserving valuable collections of ancient ceramics covered in Southeast Asia. Most of them were made in Thailand or imported into Thailand in ancient times that were prehistoric Thai pottery, dating from 2500BC to 0AD years ago. The collection includes Khmer ceramics, mostly from old kiln sites in the province of Buriram, and also some from other countries such as Burma, China, and Vietnam.

### B. Experiences Perceived from SEACM

The museum has even had the Shard archive and an extensive library available for use by researchers, but we observed that 70% of visitors often ask for interpretation of displayed objects. Comparing with science museums, they are developing their product in order to make it more attractive to the new type of museum visitor that seeks a leisure experience. Exhibition objects do not need interpretation. At most, they need explanation, but usually, the hands-on interaction with the object speaks for itself and increases participation of the visitor.

### C. Impact of Severe Flooding in 2011

The 2011 Flood of the Makong and Chao Phraya Rivers spread through the provinces of Northern, Northeastern and Central Thailand killed hundreds of people and affected the lives of about three million people. Flooding persisted in some areas until mid-January 2012, and resulted in a total of 815 deaths (with 3 missing) and 13.6 million people affected. Sixty-five of Thailand's 77 provinces were declared flood disaster zones, and over 20,000 square kilometers (7,700 sq mi) of farmland was damaged. The disaster has been described as "the worst flooding yet in terms of the amount of water and people affected."

The impact of this disaster to SEACM is not as serious as happened to the World Heritage property like Ayuthaya. For Ayuthaya, because of the loss of evidence, it will result



Figure 3. SEACM was seriously affected from the worst flooding in Thailand 2011.

in incomplete integrity, and a restoration without sufficient budget and scientific support will certainly affect authenticity of the monuments and the sites. For SEACM, the collections are absolutely migrated to the safe place before the flood but the museum place itself was damaged of 100% as shown in Figure 3. At present, the museum has been underconstruction for renovation and the finishing takes many year.

## IV. LITERATURE: APPLICATIONS FOR DEVELOPING EXPERIENCES

### A. Museums and Web 1.0 Technologies

Web-based museums have been proposed to improve preservation of and access to cultural heritage [4]. Their examples are Australian National Maritime Museum in Sydney that aims at dynamic and innovative managing and exploring Australia's maritime heritage [5], Art gallery of Ontario that publishes the museum content on-line [6] to help new citizens learn more about their new home country through art. Another example worth mentioning is Smithsonian Institution that is the world's largest museum complex and research organization composed of 19 museums, 9 research centers, and the National Zoo.

All museums under Smithsonian Institution found in [7] have developed their digital museums where visitors of National Portrait Gallery can search more than 80,000 portrait records from the Catalog of American Portraits and new material is added regularly, and automatically published to the Website after being cataloged and validated.

Currently, the website is supposed to be developed for every museum. This is because of the following characteristics as mentioned in [4], [8]:

- Operation with reliability and availability
- Availability for anyone who can access through the Internet
- Convenience for users who are willing to be collaborative
- Reduction of cost for housing and exhibiting artifacts

Marty [9] concluded that as museum information resources become more technically complex, and the users of those resources become more information literate, the needs and expectations of visitors become increasingly sophisticated. Users of museum resources are no longer satisfied with limited access to information about museum collections, and many desire twenty-four hour access to museum data, no matter where these data are located, or how the data are organized. While the ability to manipulate and manage information resources has long been an important skill for museum professionals, meeting these changing expectations can pose new challenges for museum professionals. The coming of social media can be a solution.

### B. Emerging Web 2.0 or Social Media

Emerging of Web 2.0 (social media) has dramatically changed the communication media of the world. With social media, all participant can be both sender and receiver of messages, which are news, information, knowledges, etc. It is a term that describes web-based applications on which users generate, share, and curate the content [10]. Over the last three years, the sites, from blogs to YouTube to Wikipedia, have transformed the ways that web users interact with content and with each other on the web.

Since museums have had a strong desire to be welcoming places, a use of social media can turn them into virtual community centers as their desire. Such as Facebook or Twitter, everyone has a voice, and a vote. Curators and online visitors can communicate, learning from one another. The engagement of the social media with a museum organization requires some protocols, applications, or systems to fulfill the museum needs. An example of health care, Kamel Boulos and Wheeler [11] offered a special-purposed application based on social media. Their design is very promising and potentially fit for purpose in many health care applications.

### C. On-Site Applications

Games are a way to entertain visitors in museums and to support cooperation among museum visitors through games [12]–[14]. For example, Dini et al. [15] introduced a multi-players game in a museum. The game is to use the mobile devices for individual game play, and the situated displays for

synchronized public views of shared game play; the individual game play contributes to the shared game. A number of applications with the same purpose are also addressed in [16], [17].

Unlike a game, another application is called *Artlinks* developed by [18]. *Artlinks* is classified as an information visualization tool with three goals: helping visitors make connections to exhibits and other visitors by highlighting those visitors who share their thoughts; encouraging visitors reflection on the social and aspects of museum-going.

## V. THE PROPOSED APPLICATION

We proposed an application for improving the social context for museum visitors. Our application has an idea of migrating the *Artlinks* [18] to social media as shown in Figure 4. This application will be developed on the social media; without loss of generalization, Facebook is chosen as a platform of our application. Facebook have been the highest popular used for social purpose since January 2009, and it had the registered users of 900 million in April 2012 as reported in [19]. The advantage of Facebook application is that we can exploit the user information in Facebook; however, the information have to be authorized by owners following the Facebook policy. The feasible post-processing modules are below:

- Identifying their preference/interest. To analyze the first-registered users, the explicit questionnaire has to be used, but it can burden user task and waste their time. Thus, Facebook will provide some useful information (such as their interest groups, member subscription, and previous joined applications) about users. The further analysis on these information can describe their preference.
- Supporting a reputation system. Essentially, the application in social media requires a protocol for tracking and scoring user activities. The more information about users, the more accurate assessment of users' comments/opinion we can design and develop.

### A. Features of the Application

The features of our application are mainly listed below, and their graphic design and cross functions are shown in Figures 5-7.

- Virtual gallery. Displaying the selected objects (i.e. most of them are masterpieces) with their Flash format. That means the objects are built with the Flash technology containing of a series of photographs in several angle views (top, bottom, 4-Sides).
- Item description. Holding a mouse over a particular object will show its pop-up description (written by experts and curators).
- Annotation for user opinion. With adopting the Wiki concept, users can write their comments/opinions for each displayed object.
- Links to users' Facebook page. A social network of museums can be built by gathering a number of existing personal social networks.





Figure 4. Our proposed application for linking the displayed objects to a group of people who have the same interest with the following features: virtual gallery, item description, user annotation, hyperlink to users’ Facebook pages, souvenir shop, and information visualization.

TABLE I

INTERVIEW WITH THREE CURATORS ABOUT THE MUSEUM EXPERIENCE WHERE X MEANS NONE AGREED, Δ MEANS SOME AGREED, AND O MEANS ALL AGREED.

Museum experience	Art museum	Our application	Artlinks [18]
Recreation	Δ	O	O
Sociability	Δ	O	X
Learning	O	O	O
Aesthetic	O	O	O
Celebrative	O	O	O
Enchanting	O	Δ	O

TABLE II

SUMMARIZATION OF THE RELATIONSHIP BETWEEN MUSEUM EXPERIENCE AND OUR APPLICATION FEATURES.

Museum experience	Application features
Recreation	Virtual gallery, and souvenir shop
Sociability	Annotation for user opinion, and Links to users’ Facebook page
Learning	Virtual gallery, item description, and visualization
Aesthetic	Virtual gallery
Celebrative	Annotation for user opinion, and visualization
Enchanting	Virtual gallery and visualization

- Souvenir shop. Similar to many real museums, visitors are happy to have anything for their presence, memorization, and fun.
- Visualization. Visualizing a network of people who have the same opinions/comments can make an implicit link from objects to people.

*B. Desirability in the Expert Domain*

After we designed the application, we did a desirability research method for collecting visual design feedback from domain experts. We have had an interview with three curators about the museum experience that visitors are able to gain it during their spent time at a real gallery, our application, and Artlink. The interview results are summarized as shown in Table I where the curators summarized that our application features are able to develop the museum experience as shown in Table II.

VI. CONCLUSIONS AND FUTURE WORKS

Two main reasons of our proposed application on social media are as follows. First, everyone in anywhere can access whenever they are available. This feature of our application is an alternative way for museums temporarily closed because the museums must keep contact with their visitors. Also, the experience of visitors can be expanded without visiting the real place. Second, very-shy participants become less shy in social media. Thus, they would like to share their opinions with other people as well as to join museum activities in special events.

We can conclude that this paper has met the first and second objectives of our research project. First, we did the study of the application of experience development for art museums in the previous works. Second, we also finished the design of our proposed application of experience development. The remaining work is about the third objectives of the evaluation part. We are developing this application for SEACM during temporarily closing. Lastly, the evaluation will be conducted on the real visitors including university students and cultural tourists (excursion of school kids, foreigners).

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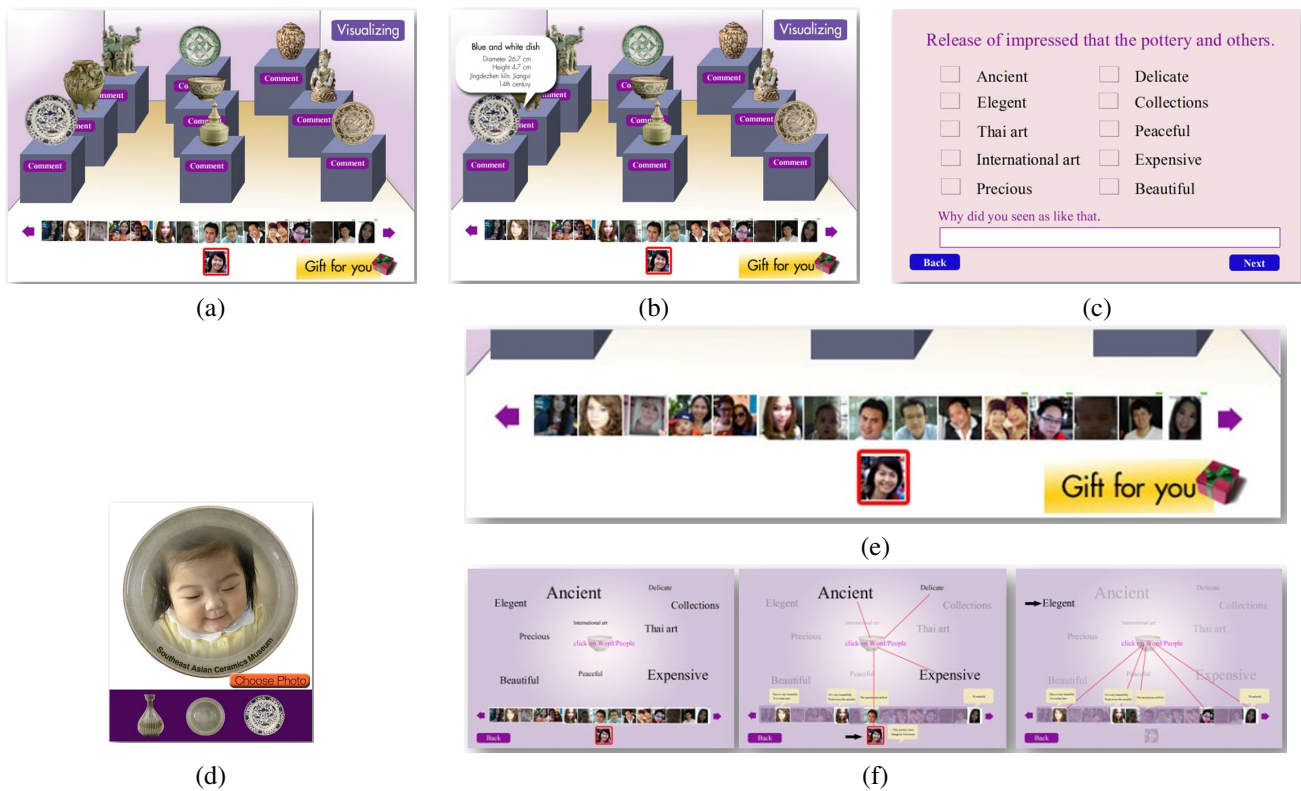


Figure 5. Application features: (a) virtual gallery, (b) item description, (c) user annotation, (d) souvenir shop, (e) hyperlink to users' Facebook pages, and (f) information visualization.

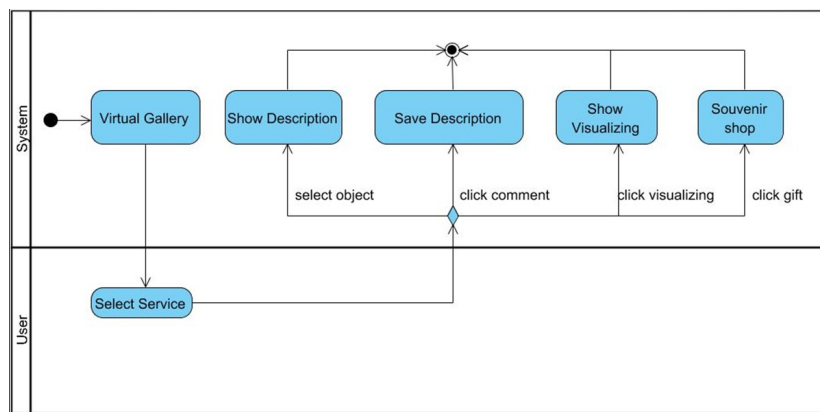


Figure 6. Activity diagram between users and the application.

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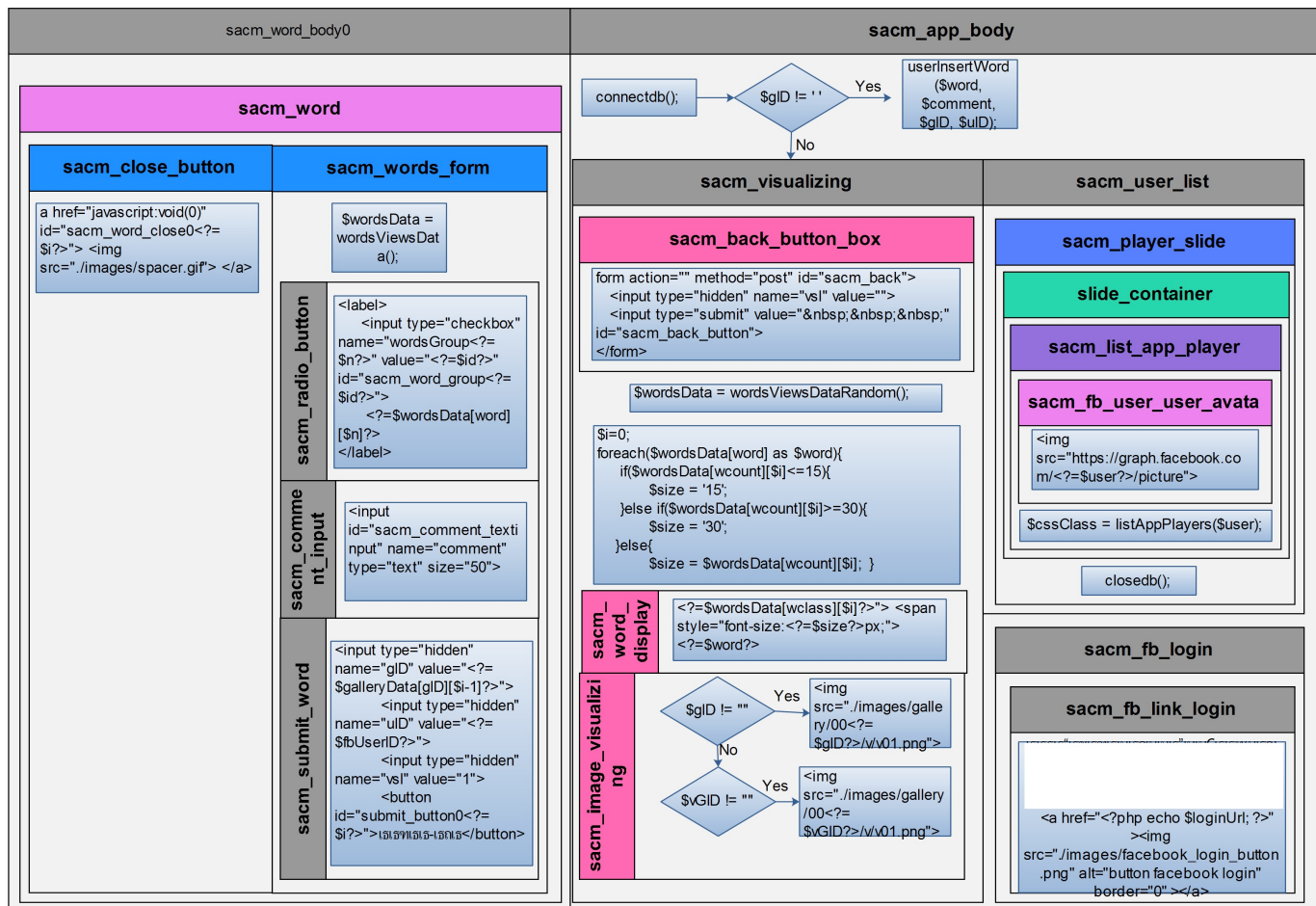
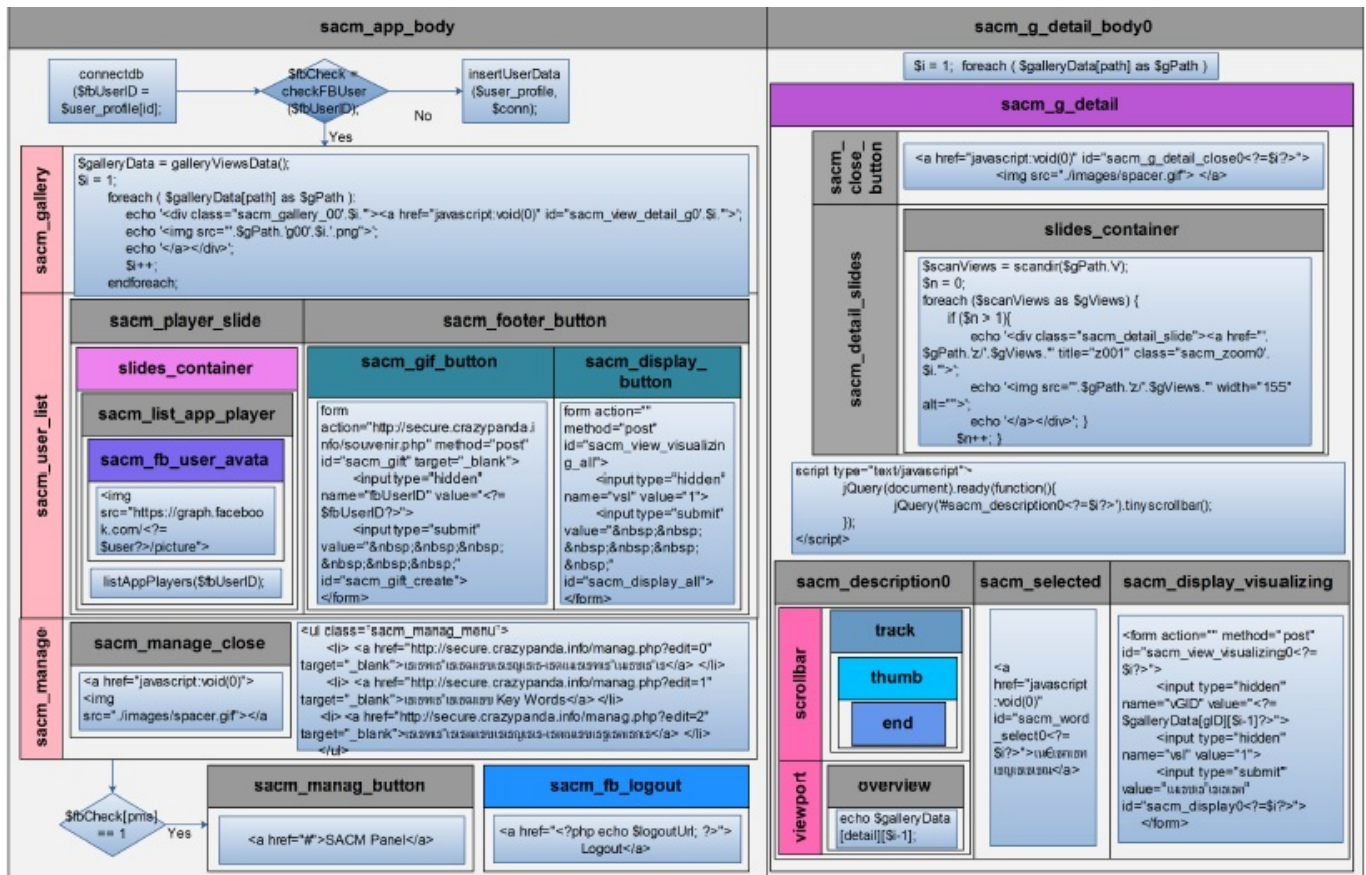


Figure 7. Cross functional diagram of the application.