Developing a Penang Cultural Tourism Website Prototype: A User-Centred Design Approach

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Abstract

Most Malaysian tourism website designs are text-heavy. They deliver information but reflect little regard for usability. Malaysian web designers and developers are unaware of the importance of user-centred web designs necessary in order to promote cultural tourism. This paper details the development of a Penang cultural tourism website prototype that employs a user-centred design approach. The website aims to disseminate information about the multicultural traditions of Penang, which include the performing arts, crafts and festivals. In the use of personas, this article seeks to examine the effectiveness and functionality of web pages and subsequently develop a Penang cultural tourism website prototype.

Keywords: cultural tourism website, user-centred design, personas.

Introduction

The World Tourism Organisation (WTO) defines cultural tourism as the "movements of persons for essentially cultural motivations such as study tours, performing arts and cultural tours, travels to festivals and other cultural events, visits to sites and monuments, travels to study nature, folklore or art, and pilgrimages". Cultural tourism tends "to raise the cultural level of the individual ... giving rise to new knowledge, experience and encounters" (WTO 1985). For this reason, the development of a Penang cultural tourism website should focus on a wider perspective regarding user requirements. More importantly, it should enhance the user experience with web browsing so that the user can experience first-hand a variety of cultural events and activities of the society even before he/she visits the tourist destination. This paper focuses on a user-centred design approach in which personas were used to identify the needs of the user. Through the user task analysis, the research team developed the first prototype of the website. Jacob Nielsen's (1994) usability heuristics were applied as guidelines for the user interface design and usability testing approach.

Persona Creation

All designs should be initiated according to a comprehensive understanding of the users' characteristics (Schneiderman 1998). These include a user's demographic profile, education, training, motivation, goals and personality. In the development of this website, personas were used to create archetypal characters that would correspond with groups of real target web users in terms of their goals and personal characteristics (Calabria 2004). These prototypes help to guide decisions about the functionality and design of the website. The technique was popularised by Alan Cooper (1998) in his book *The Inmates Are Running the Asylum.* Personas are more appropriate in the context of web development for cultural tourism, as they provide insights into what makes a website work best as well as how it can best be designed. They also assimilate the behaviour and experiences of the users browsing the web.

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Personas were created by using Donald Norman's (2004) 'Ad-Hoc Personas' approach. Interviews with and observations of the stakeholders were carried out to identify the target user group. Later, the group was narrowed down to specific characters based on their goals, patterns and needs. Four groups of target users were identified by the design team. Each group was represented by an archetypal character that would portray the needs, behaviours and attitudes of the group. The personas make the design more human-centred than technology-centred, adding empathetic focus to the design. Summaries of the four personas are shown in Figure 1.

1. Peh Peh (the learner)

"I'm interested, but I'm not sure how to go about it"

Age   : 20
Profession   : University student
Hours online : 40 (per week), high
Travelling seriousness : Moderate

2. Victor (the active tourist)

"I'm interested, but make it work for me"

Age   : 28
Profession   : Admin. executive
Hours online : 35 (per week), high
Travelling seriousness : High

3. John (the pensioner)

"It's good to keep an eye on things from time to time"

Age   : 56
Profession   : Pensioner
Hours online : 15 (per week), low
Travelling seriousness : Moderate

4. Mawar (the researcher)

"I need to know more of the traditional cultural facts"

Age   : 32
Profession   : Cultural research officer
Hours online : 30 (per week), moderate
Travelling seriousness : Low

Figure 1 Summaries of four personas (refer to Appendix for full persona profiles).

The audience segmentation analysis in Figure 2 was used to determine the role of the primary persona. The segmentation was done based on the user's travelling seriousness and frequency of internet usage.
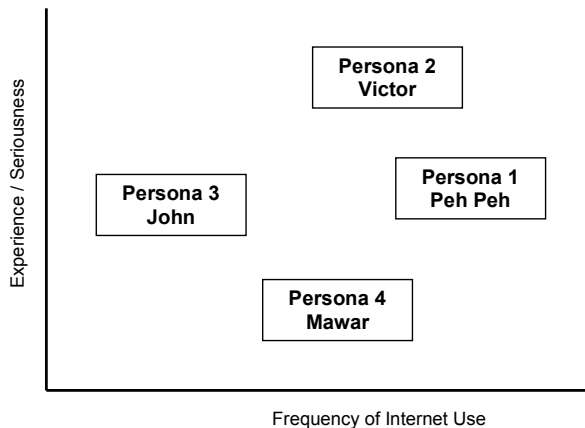
Figure 2 Audience segmentation.

Victor was identified as the primary persona, because he has a very high potential to travel and high frequency of internet usage. His profile is used as the key reference in the website development. However, the profiles of the other personas are also used as references. Each of them represents a different user group whose needs have to be considered in the web features as well.

Peh Peh represents a younger generation user group. She is a heavy internet user and has great potential in becoming an active traveller in a few years time. Social networking features such as blogging and forums would be required in the website to gain attention from this user group. These features will help in terms of building efficient networking and accessibility of the website.

Mawar represents the researcher and information seeker group, who might not be interested in travelling, but is interested in getting information and making the website the main source of reference.

John is the pensioner who might not be active in internet activities and travelling, but he is the key reference when it comes to the web accessibility matters.

Scenarios were created by using the personas based on their individual roles. Scenario design described the persona's process in achieving a goal and highlighted opportunities for features and functionality development. This was carried out by role-playing the part of the persona on the web page paper prototype. This gives a good insight of the website functionality to the developer. Factors taken into consideration during the scenario design are as follows:

- Action taken
- Fluctuation, emotion, questions that arise
- Information needed
- Features and functionality to address needs

Information Architecture

The information architecture is the key aspect to determine the structure of the website based on its content. This is the next step after the creation of personas.

The design process for the information architecture included:

- Content inventory
- Affinity diagramming
- Design draft information architecture

A content inventory was created to list all the pages on the website. This was used to gain a comprehensive understanding of what was needed to be included on the website. It was also used to place content in the information architecture, and would be invaluable when migrating and rewriting content. With the new website being created from scratch, this inventory would be used as a check list for the website. Moreover, this content could supply additional clues about information needs, supporting or adding to user research.

A paper based affinity diagramming was used to synthesise contents into manageable chunks based on themes that emerged from the content.
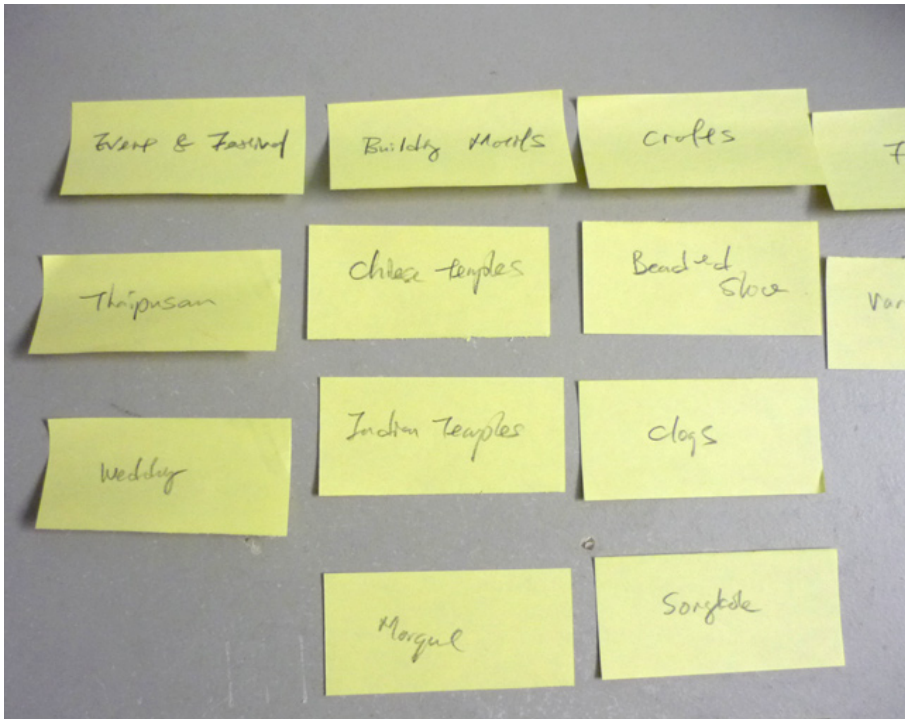
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Figure 3 Affinity diagram for the website.
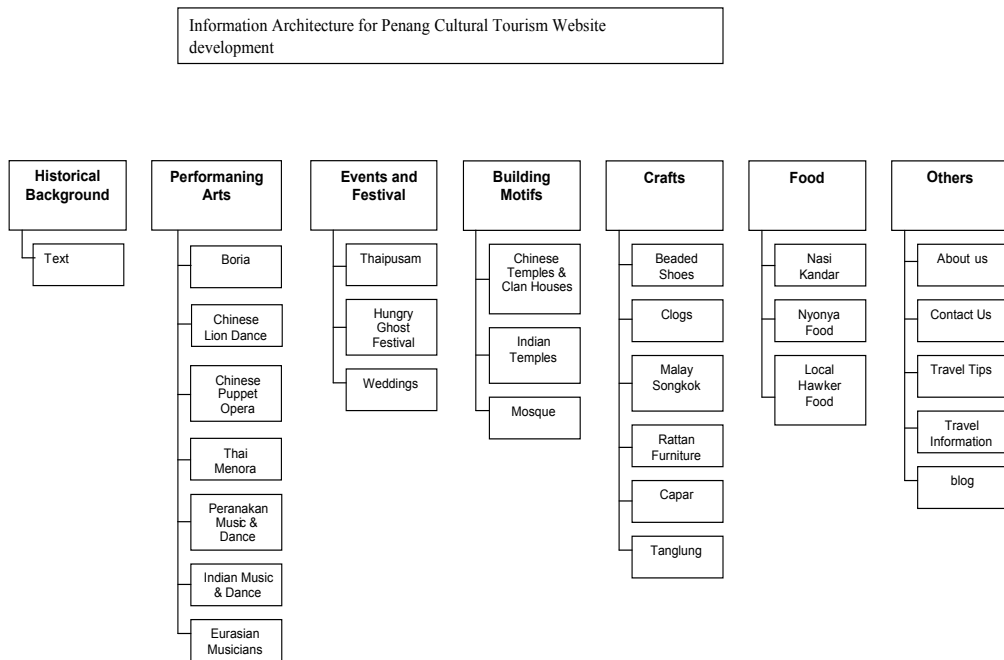
The design draft of the Information Architecture is shown in Figure 4.

Information Architecture for Penang Cultural Tourism Website development

Historical Background	Performaning Arts	Events and Festival	Building Motifs	Crafts	Food	Others
Text	Boria	Thaipusam	Chinese Temples & Clan Houses	Beaded Shoes	Nasi Kandar	About us
	Chinese Lion Dance	Hungry Ghost Festival	Indian Temples	Clogs	Nyonya Food	Contact Us
	Chinese Puppet Opera	Weddings	Mosque	Malay Songkok	Local Hawker Food	Travel Tips
	Thai Menora			Rattan Furniture		Travel Information
	Peranakan Music & Dance			Capar		blog
	Indian Music & Dance			Tanglung		
	Eurasian Musicians					

Figure 4 Information architecture.

Based on the information architecture, the development team was able to create the graphic user interface of the webpage more precisely.

Graphic User Interface Design

Starting with the design of the homepage, the team examined the layout of other tourism websites, discussing the strengths and weaknesses of those websites through role-playing using the created personas. A list of features to be included in the homepage was then brainstormed, referring back to our information architecture. Jakob Nielsen's usability heuristics were used as guidelines for the layout design.

As Dantin (2005) has written in his research on the applications of personas to user interface design for educational software, this method is not time consuming and requires no additional software applications. This is indeed an inexpensive yet effective option for the user interface design of small software applications, and it has been applied in this instance of website development and evaluation as well.

Figures 5 and 6 show the two examples of the wireframe page layout developed for the first prototype of the website. Figures 7 and 8 show the graphic layout of the webpage based on the wireframe created.
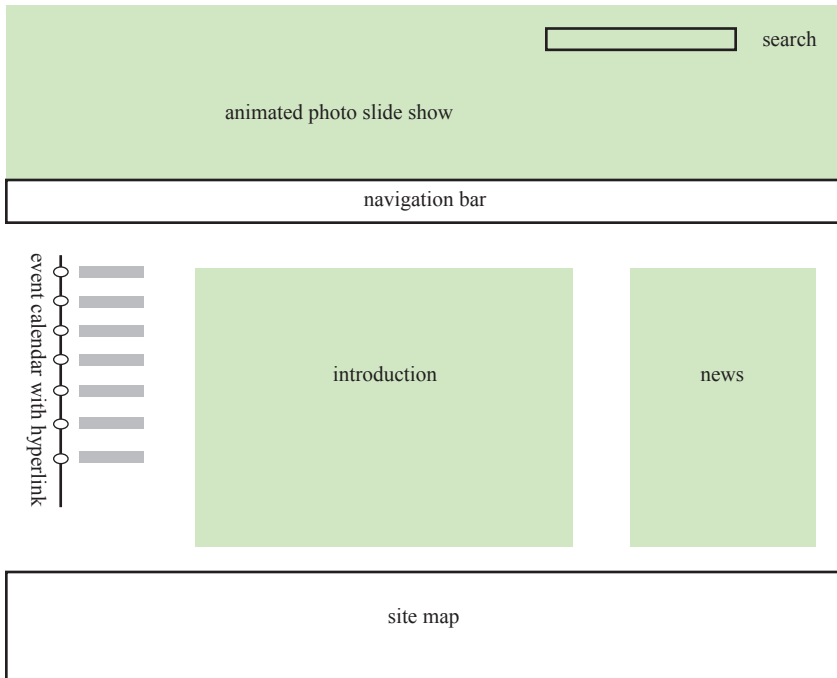
Figure 5 Wireframe for home page layout.

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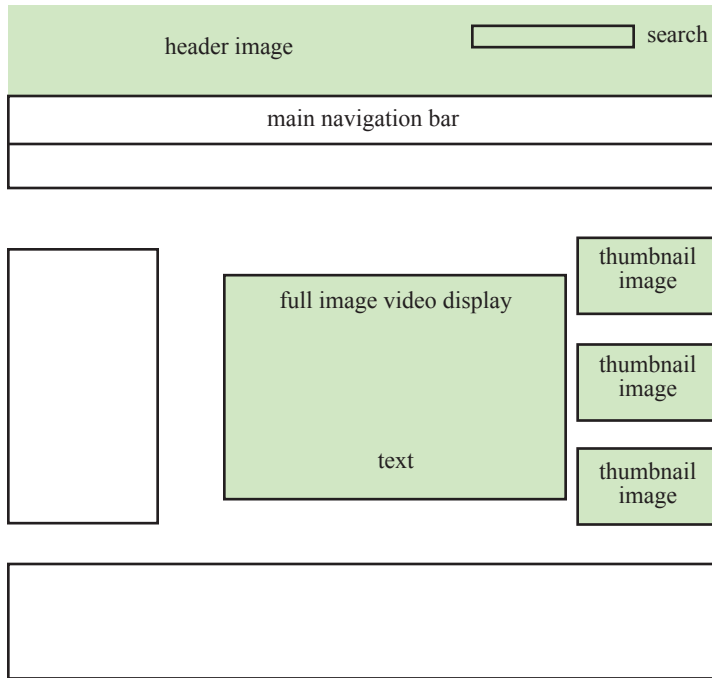
Figure 6 Wireframe for video show page layout.

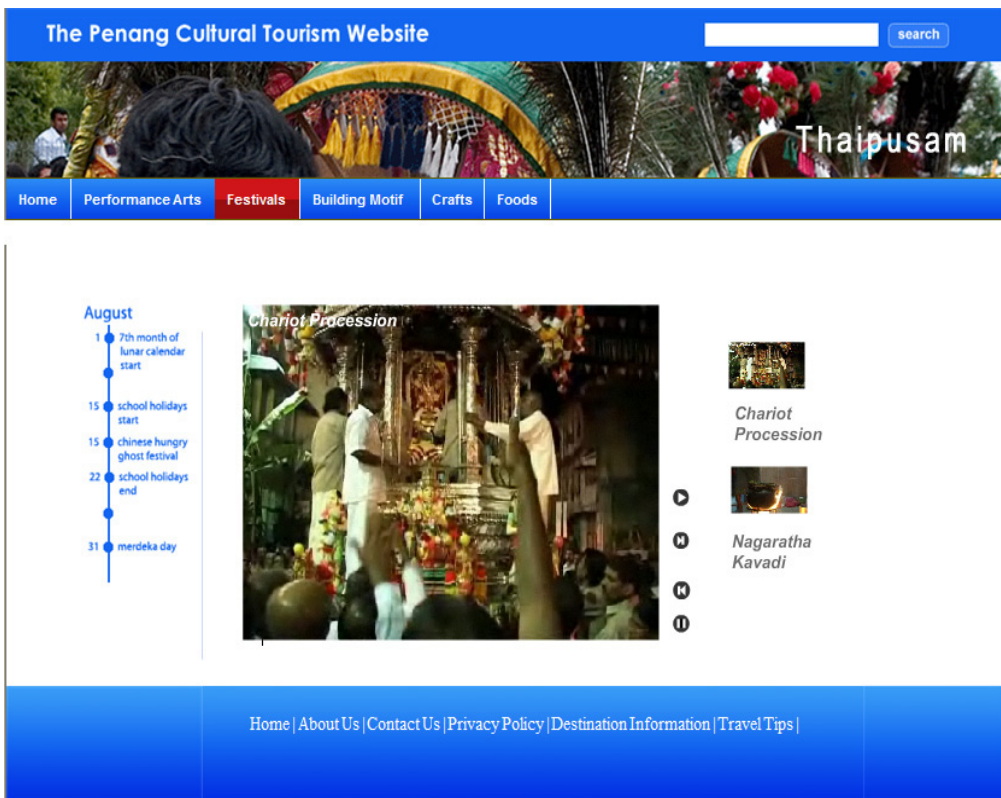**Figure 7** Home page graphic layout.

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Figure 8 Video show page graphic layout.

Prototype

The first static page prototype was developed to ensure that the web page layout would work with the content according to the user requirements and to provide the basis for the usability tests.

Conclusion and Further Work

The use of personas in user-centred design provides a 'human touch' when applied to the subject matter of cultural tourism. It is different from the conventional user case design and user segmentation method, as it focuses on determining the tasks and functionality of the website. This approach is relatively quick to develop, replaces the need to survey the whole user community, and eliminates the need to spend months gathering user requirements.

Further work will include iterative usability testing on the prototype created using the combination of personas and usability heuristics throughout the whole process of the website development until the site's publication on the internet.

Acknowledgements

Appendix
Personas' Profiles

Persona 1: Peh Peh, the learner

"I'm interested, but I'm sure how to go about it"

Computer Usage:

Experience : high
Primary use : chatting, blogs, e-mail, social networking, assignment/ coursework
Favourite sites : friendster, yahoo, google, blogspot, wikipedia
Hours online : 40 (per week)
Computer : desktop or may be laptop

Personal Information:

Age : 20
Profession : university student
Nationality : Malaysian
Home life : single, living in hostel
Hobbies : travelling, web surfing, window shopping
Personality : outgoing, friendly

Travelling Behavior:

Peh Peh likes to travel, especially on weekends and during semester breaks. She mostly makes short trips to local tourist spots with her friends and coursemates. Due to financial constraint, she always travels on a shoestring budget and stays in friends' house. She sometimes participates in homestay programs. She always browses throught tourism websites to seek information, and somestime gather information for her cousework/project.

Persona 2: Victor, the active tourist

"I'm interested, but make it work for me"

Computer Usage:

Experience	:	high
Primary use	:	blogs, e-mail, social networking, travelling tips/forums
Favourite sites	:	facebook, yahoo, google, blogspot, lonelyplanet
Hours online	:	30 (per week)
Computer	:	desktop or may be laptop

Personal Information :

Age	:	28
Profession	:	administration executive
Nationality	:	Australian
Home life	:	single, living alone
Hobbies	:	travelling, web surfing, sports
Personality	:	outgoing, friendly

Travelling Behavior:

Victor likes to travel, especially to foreign countries and get to know about the local culture there. He travels in small groups with close friends or sometimes joins up with other travelers he meets along the trip. He is financially independent. He likes to gather information and learn about the local culture and lifestyle first before he makes his trip. He will usually spend about one week for each of his travelling trips.

Persona 3: John the pensioner

"It's good to keep an eye on things from time to time"

Computer Usage:

Experience   : low
Primary use   : e-mail, words
Favourite sites   : msn, yahoo, google, CNN, wikipedia
Hours online   : 15 (per week)
Computer   : desktop

Personal Information :

Age   : 56
Profession   : pensioner
Nationality   : United Kingdom
Home life   : married, living with wife
Hobbies   : reading, museum, gallery, travelling
Personality   : patient, cheeful

Travelling Behavior:

John and his wife are pensioners who have pension and some savings They like to travel and learn about the culture and lifestyle of other countries. John usually travels with his wife. Due to old age and health reasons, they only travel to countries which they feel safe and familiar with. John will do some internet searching to make sure that he places are suitable for them to visit. Sometimes he learns about the culture of another country through the internet before visiting the place himself if his wife is not interested in joining him.

Persona 4: Mawar the Researcher

"It's good to keep an eye on things from time to time"

Computer Usage:

Experience   : high
Primary use   : e-mail, words, googles, wikipedia, online research
Favourite sites   : google, wikipedia, JSTOR
Hours online   : 30 (per week)
Computer   : desktop

Personal Information:

Age   : 32
Profession   : cultural research officer
Nationality   : Malaysian
Home life   : married with 3 children
Hobbies   : sports, cultural performance, music
Personality   : demanding, motivated

Travelling Behavior:

Mawar is a research officer of a local cultural research agency based in Kuala Lumpur. Her work task is to gather information regarding local cultural events and create a database on them. She might not have the time to travel / or participate in all the cultural events, but she will seek information and monitor the development of the events via internet.

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