A Requirement Model of Local News WAP/WEB Application for Rural Communities

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Introduction

- Rural is an adjective. Which identify the people who live in these areas, in another words its the life outside of a big countries or the city (Rural Communities, 2008).

- The communities can define as, the people living in an area, also mean the area itself (Rural Communities, 2008).

- Urban the mean of urban is the people those who live in the big towns or the cities.

- Many people in the rural community have the mobile phone; in fact 88% of Malaysian people have mobile phone (MCMC, 2007).

Cont...

- For this study it is important to identify and determine the requirements model, which used to gathering and analysis the requirements for any study (Requirements Modeling, 2008).

- A requirement modeling can be used to reduce the time and cost that need to develop the large or the complex systems by determine the requirements to make the system able to work (Darrell, 2008).

- The WAP can define as the open international standard for application layer network communications for different communication fields, which its aim to provide and support the users with the internet accessing from a mobile phone or PDA (WAP, 2008).
Problem Statement

- Many rural communities do not have access to the ICT.
- The traditional way to read the local news from the newspaper/television is not always available in this communities.
- Some communities may be included people who don't know the local language of this communities. So I support my prototype with languages options: include: English, Malay, and Arabic.
- Traditional ways to publish news between the people in some communities; such as: mosques, public announcements etc. All these ways to publish the news might not be feasible because the majority may not be meeting.

Research Question

- What are the requirements for rural community news application?
- How to evaluate the proposed application?

Objectives

- To design a requirement model for the local news WAP/WEB application using the unified modeling language (UML).
- To develop the prototype.
- To test the prototype and it’s usability.
**Scope of The Research**

- This Study focuses on the designing of the requirements model to the rural community news in Kampung Changkat Setol area, the selection of this area because of the nearest destination from UUM, otherwise this area do not provide the TC for the people, and the majority of the people in this area can not access to the Telecenter in another far places.

![Map of Kampung Changkat Setol](image)

**Significance of The Study**

- This study is important for the rural community in the Kampung Changkat Setol area where provides them with opportunities to access the local news from mobile device in any time and anywhere quickly and easily, the user can see the local announcements, local news (Agricultural and Education news……), the persons who died or married in this area, and the users can add news to this application using mobile devices.
1. The Rapid Growth of the Mobile Phone in Malaysia:

- Hand phone users by urban and rural sector in Malaysia.
- Hand phone users by ethnicity in Malaysia.

<table>
<thead>
<tr>
<th>Sector</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>78.0</td>
<td>81.5</td>
<td>81.9</td>
</tr>
<tr>
<td>Rural</td>
<td>22.0</td>
<td>19.5</td>
<td>19.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malay</td>
<td>53.9</td>
<td>57.3</td>
<td>61.1</td>
</tr>
<tr>
<td>Chinese</td>
<td>46.1</td>
<td>42.9</td>
<td>38.9</td>
</tr>
</tbody>
</table>

- Hand phone users by nationality in Malaysia.
- Hand phone users by gender in Malaysia.

<table>
<thead>
<tr>
<th>Gender</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>56.4</td>
<td>57.4</td>
<td>58.3</td>
</tr>
<tr>
<td>Female</td>
<td>41.7</td>
<td>42.6</td>
<td>41.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nationality</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysian</td>
<td>92.5</td>
<td>90.3</td>
<td>90.7</td>
</tr>
<tr>
<td>Non-Malaysian</td>
<td>7.5</td>
<td>9.7</td>
<td></td>
</tr>
</tbody>
</table>
2. The WAP Protocol Stack:

According to figure 2.1, the WAP layer stack contains the following:

- Wireless Application Environment (WAE).
- Wireless Session Protocol (WSP).
- Wireless Transaction Protocol (WTP).
- Wireless Datagram Protocol (WDP).

3. Telecenters:

Telecenters are physical space that provides public access to information and communication technology (Riley & Gomez, 2001).

4. Requirements Model:

- The requirements model aim to define the functionality that the system should offer (Jacobson et al. 1992).
- Requirements modeling will improve the quality of systems because it improves the quality of the specification (Darrell, 2008).
5. Applications of WAP in the rural community:

- **Mobile device in the learning:**
  Mobile learning can help students to select the type of information that is needed in their studies. And also help the administrator of a school to monitor the students, and they can get real time feed back from their staff and students on certain things (Nor et al, 2006).

- **How will life change in the future mobile information society?**
  This study focused on enhances of the information society in the rural of India, and present using WAP technology to achieve the flexible communicates between the people in this area (Ashok, 2008).

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**Research Methodology**

- Research methodology is a systematic way to solve the research problem.

- The research methodology that used in this study is the General methodology. (Vaishnavi & Kuechler, 2007).

![Figure 3.1: General Methodology (Vaishnavi & Kuechler, 2007)](image)
Continued...

- **General Methodology Phases:**
  
<table>
<thead>
<tr>
<th>Awareness of Problem</th>
<th>choosing the domain /Understanding of the problem to solve it/ Data gathering.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suggestion</td>
<td>In order to develop a well-design for local news WAP/WEB application for the rural communities, I am use Unified Modeling Language-UML.</td>
</tr>
<tr>
<td>Development</td>
<td>The system prototype developed through the ASP.NET technology and Microsoft SQL Server 2005 to build the prototype database.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Two techniques to evaluate and test the M-Rural Community News system:</td>
</tr>
<tr>
<td></td>
<td>➢ Use case testing: to minimize prototype from bugs and errors.</td>
</tr>
<tr>
<td></td>
<td>➢ User Testing: questionnaire.</td>
</tr>
<tr>
<td>Conclusion</td>
<td>The WAP/WEB news application for the rural community are developing in order to enhance the services in this areas.</td>
</tr>
</tbody>
</table>

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**Analysis And Design**

**Use Case Diagram**
WAP Pages

- Login Page.
- Main Page.
- Read News.
- Upload News.

2012/03/22
WAP Pages

- Login Page.
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2012/03/22
Usability Testing Result

- Most of the points about the kind of the information that the rural people looking for was focus on the local news, which presented 78%.

- Most of the points about the facilities to get the news, focus on the mouth to mouth, which presented 60%.

- The evaluation of the benefit and the user satisfaction was highest agree that mobile can provide the benefit and easy to use by those people (85%).

![Bar Chart](image1)  
Figure 5.1: The User Benefit and Satisfaction

Conclusion

- The main aims of this study are to develop the prototype, and to design the requirement model for Mobile News using UML.

- This prototype will help the people in the rural community to access different news about this area at any time by using their mobile phones.
Future works

- This research could be extended in the future to include other applications that can be computerized in these communities such as: marketing of agricultural products, development of local homepages to provide useful and interesting information for the rural residents, and sending messages from the administrator (SMS) to the rural to inform him/her about the important news.

References


The End

Thank you