

A Context Information Center for M-commerce Applications

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Research Objective:

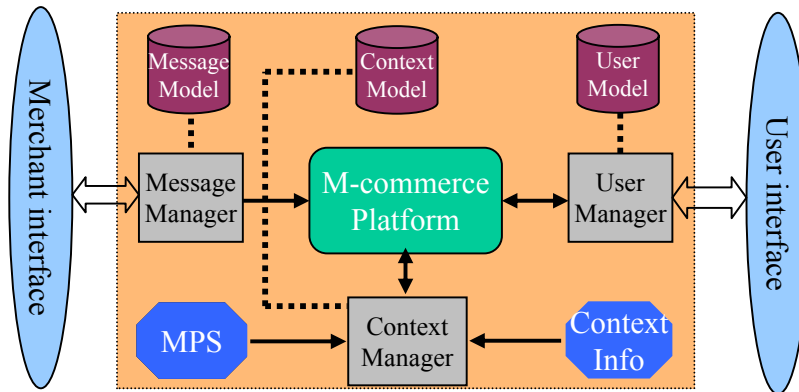
To enable the context-aware ability for M-commerce applications.

Research Background:

Do you want your service provider to send an e-voucher when you are passing a shopping mall? Do you want your service provider to stop sending messages when you are attending a meeting? In order to accomplish the above, you need a M-commerce application that has the ability to deliver relevant information to the right users at the right time. We proposed to build such an application.

Research Design:

We propose to combine three centers in a M-commerce application. They are user information center, content information center, and context information center. The following figure is the system architecture of our proposed M-commerce application. In this study, we mainly focus on the context information center.



System architecture of our proposed M-commerce application center

There are many types of context information that can be used, for example, location, weather, and Date-Time. The more context information a context information center can reason from, the better context-aware ability the context it has. In our research, we examine five kinds of context information, including user's activities, user's preference, user's location, weather and Date-Time.

We intend to use a unified format, RDF, to present the context information. The foundation of RDF is a model representing named properties and property values of any resource. The following table shows different types of context information.

Types of Context info.	Provided by	Examples
Location	Context information center	<code><InPlace rdf:about="Meeting Room"><person rdf:resource="Tom" /></InPlace></code>
User's Activities	User information center	<code><Meeting rdf:about="Weekly Meeting" /><holding rdf:about="TimeInst" /><holding rdf:about="Meeting Room" /><holding rdf:about="Tom" /></Meeting></code>
User's Preference	User information center	<code><Person rdf:about="Tom"><like rdf:resource="Chinese food" /></Person></code>
Weather	Context information center	<code><Weather rdf:about="Hong Kong"><Time rdf:resource="TimeInst" /><Weather rdf:resource="Cloudy" /><Temperature rdf:resource="27" /></Weather></code>
Date-Time	Context information center	<code><Time rdf:about="Mon, 24 Feb 2003 16:00:00 UTC" /></code>

Table: Five types of context information

Research contributions:

1. Proposes a unified format to represent the data in a M-commerce application.
2. Describes the design of a context information center and points out the functionalities and modules in a context information center.