

FIG. 8, motorcycle promotion interactive message) and is interested in buying one. The user can preview the pictures and prices (LINK relationship) of different kinds of motorcycles simultaneously by simple select from the model options menu. In other words, as the user chooses a model of a motor the picture and the corresponding price are displayed in consequent. Furthermore, if a user wants to buy a model of motorcycle, a Buggy for example, what he needs is only to select the model and click the order form submit button (to submit an order form) as well.

[0054] FIG. 9 schematically shows a data model of an embodiment of the present invention. Wherein, the object 1 is included in the object 2. The object 1 and the object 3 have an ally relationship. The attribute of the object 1 define those of the object 2. If the object 1 is changed from one condition to another, for example the attribute 1 changes, the object 2 and 3 are changed in consequence.

[0055] FIG. 10 schematically shows a data model of an example of motorcycle buying. In the portion of presentation structure, the data model of the message shows five options including motor, models, and types of the wheels, pictures, prices and order form submit buttons of bicycles. Generally, instance data gives actual data on the basis of a data model. Two pieces of message may have the same data model but different instance data. In FIG. 11, the instance data is information about motorcycle promotion. The user interface defines the position, format and size of the individual items.

[0056] Relationship or action portion describes the relationship between the object and the action at the time an event takes place. Usually a message comprises information about one or more objects no matter how to present the information. Relationship or action portion describes the internal relationship between data and the internal relationship between the attributes. For example, one attribute is defined by other attributes or other attributes are defined by one attribute. There are also external relationships between the objects.

[0057] For example, in the relationship/action portion, the relationship between motor, models, pictures, prices and types of the wheels of bicycles is shown in FIG. 10. Motorcycle types have a group of models; therefor motorcycle objects include model objects. When a type of motorcycle is selected, models that belong to this type can be presented in the type option menu of this type (CONTAIN relationship). Each motorcycle model corresponds to a respective picture. But there are some types of wheels available for users as options. When a user pushes the order form submit button, a response message is composed by the MMS client application. The response message is generated on the basis of the push action.

[0058] To provide a friendly interaction feature so as to enrich the user experience of the MMS value-added service, in an embodiment of the present invention, it is achieved by describing the service expression in extended XML language as following:

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<?xml version="1.0" encoding="ISO-8859-1"?>
<smil xmlns="http://www.w3.org/2001/SMIL20/Language">
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-continued

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xmlns: xfm= "http://www.w3.org/2002/01/xforms">
<xfm: model id= "form1">
  <xfm: submitInfo id="submit 1" method2= "postxml"localfile=
    "temp.xml"
    target2= http://www.ibm.com/motopromote/" />
  //attention A
  <xfm: instance xmlns="">
    <moto>
      <moto></moto>
      <model></model>
      <wheel></wheel>
    </moto>
  </xfm:instance>
</xfm: model>
<body>
  <par region="preference">
    <xfm: optionmenu ref="moto">
      <xfm: caption>1. Select the moto</xfm:caption>
      <xfm: item>Buggy</xfm: item>
    </xfm: option>
    <xfm: optionmenu ref="model">
      <xfm: caption>2. Select the model</xfm: caption>
      <xfm: item>Normal</xfm: item>
      <xfm: item>Model A</xfm: item>
      <xfm: item> Model B</xfm: item>
    </xfm: option>
    <xfm: optionmenu ref="wheel">
      <xfm: caption>3. Select the wheels</xfm: caption>
      <xfm: item>Normal</xfm: item>
      <xfm: item>Enhanced</xfm: item>
    </xfm: option>
  </par>
  <par region="submit">
    <xfm: submit name="submit" ref="moto" to="submit1">
      <xfm: caption>Submit</xfm: caption>
    </xfm: submit>
  </par>
  //the img region to display the motor picture
  <par region="imgRegion" dur= "indefinite"/>
  //attention B
  <xfm: optionmenu model=" picture"
    ref=" picture">
    <xfm: caption> </xfm:caption>
    <xfm: item>buggy.jpg</xfm: item>
    <xfm: item> buggy_A.jpg </xfm: item>
    <xfm: item> buggy_B.jpg </xfm: item>
  </xfm: option>
  <xfm: optionmenu ref="price">
    <xfm: caption> </xfm: caption>
    <xfm: item>$1250</xfm: item>
    <xfm: item>$1350</xfm: item>
    <xfm: item>$1399</xfm: item>
  </xfm: option>
</par>
</body>
</smil>
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[0059] The multimedia message service presentation uses SML and Xform to describe the message user interface. The interactive controllers are presented by XForms. When a MMS terminal client receives the message, the presentation is parsed and rendered to display the interactive motorcycle promotion message, which looks like FIG. 8. For example, the sentence "Attention A" shows a response message format. When a user pushes the submit button, a response message is composed by MMS client application. The response message is as following.