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(54) **IN-APP RECOMMENDATION SYSTEM AND USER TERMINAL**

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(57) **ABSTRACT**

An in-app recommending system is provided. The in-app recommending system includes an in-app module interworking unit configured to periodically collect state information of a particular application having an in-app module from a user terminal in which the in-app module is installed, the in-app module being an application in the form of a component which can be inserted into a plurality of unspecified applications to provide a common service, a user analyzing unit configured to generate recommendation information of multimedia content on the basis of the state information of the particular application, the multimedia content including an application and digital content, and a transmission unit configured to push-transmit the recommendation information to the in-app module of the user terminal.

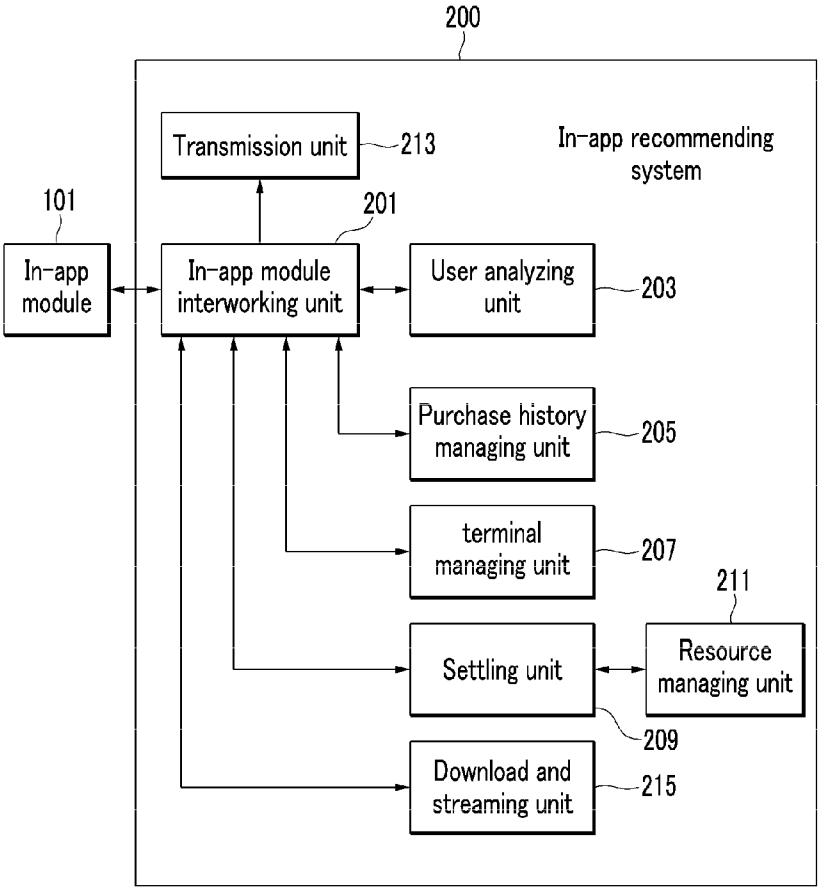


FIG.1

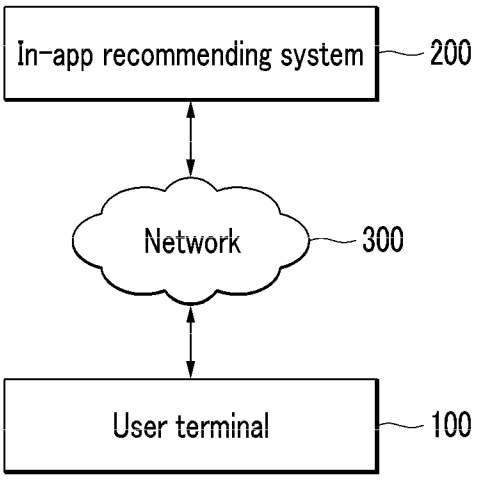

In-app recommending system
200
Network
300
User terminal
100

FIG.2

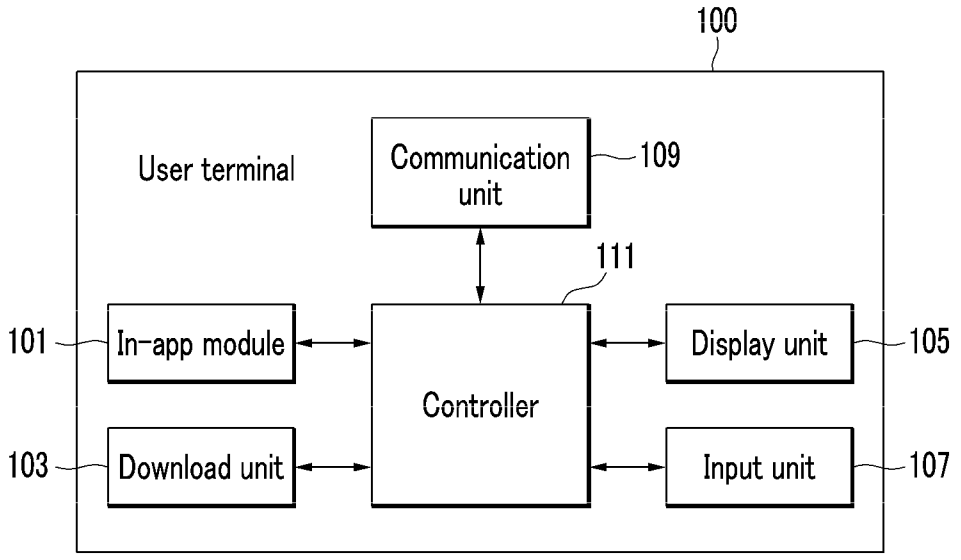

100
User terminal
Communication unit
109
111
101
In-app module
Controller
Display unit
105
103
Download unit
Input unit
107

FIG.3

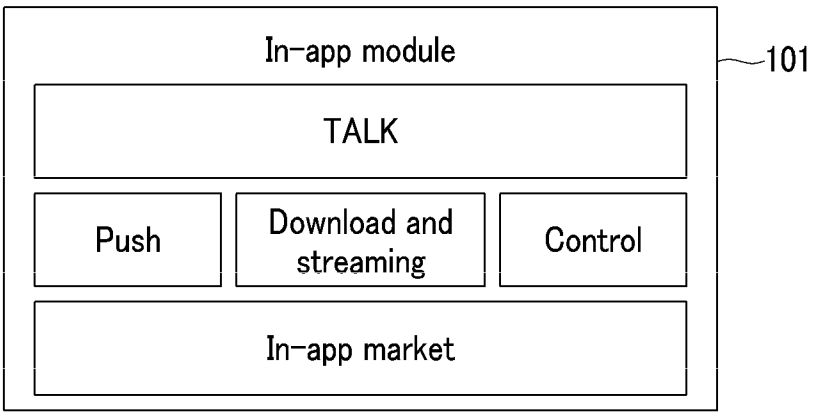

In-app module
101
TALK
Push
Download and streaming
Control
In-app market

FIG.4

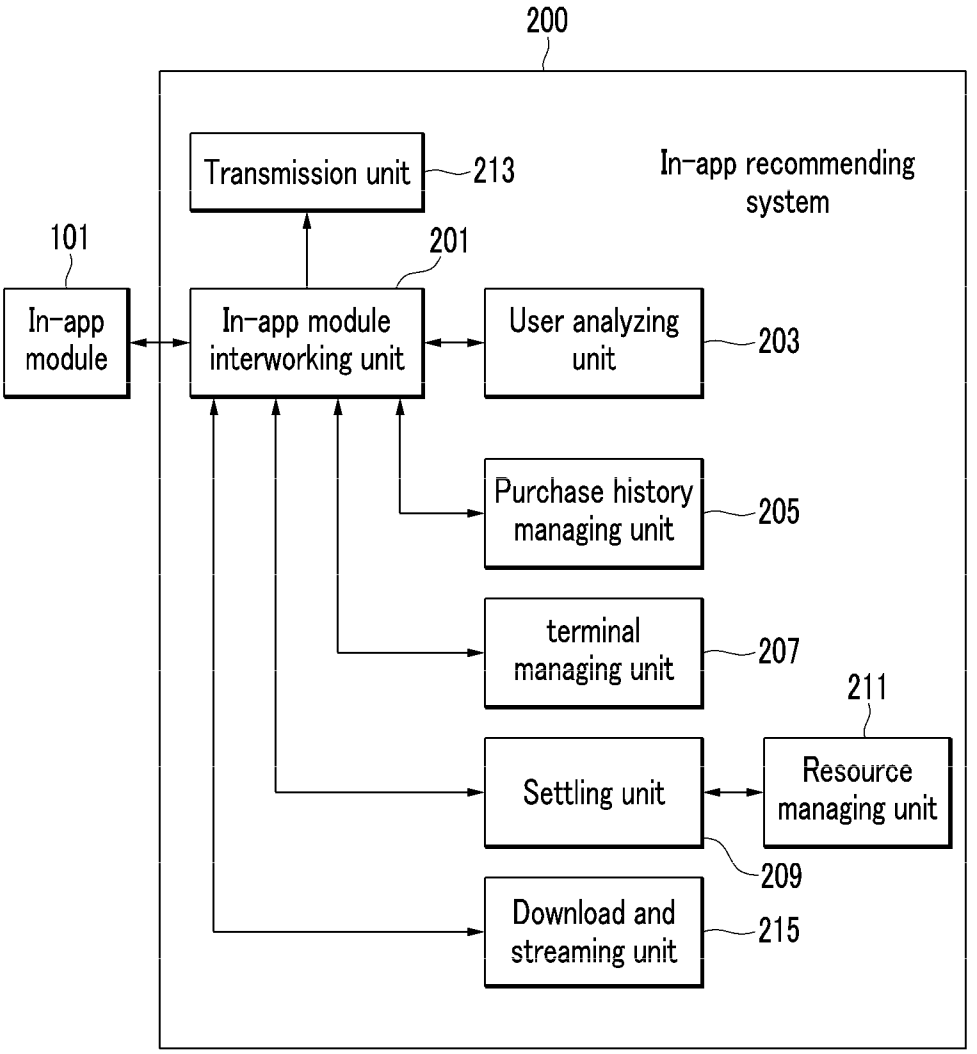

200
In-app recommending system
Transmission unit
213
101
201
In-app module
In-app module interworking unit
User analyzing unit
203
Purchase history managing unit
205
terminal managing unit
207
211
Settling unit
Resource managing unit
209
Download and streaming unit
215

FIG.5

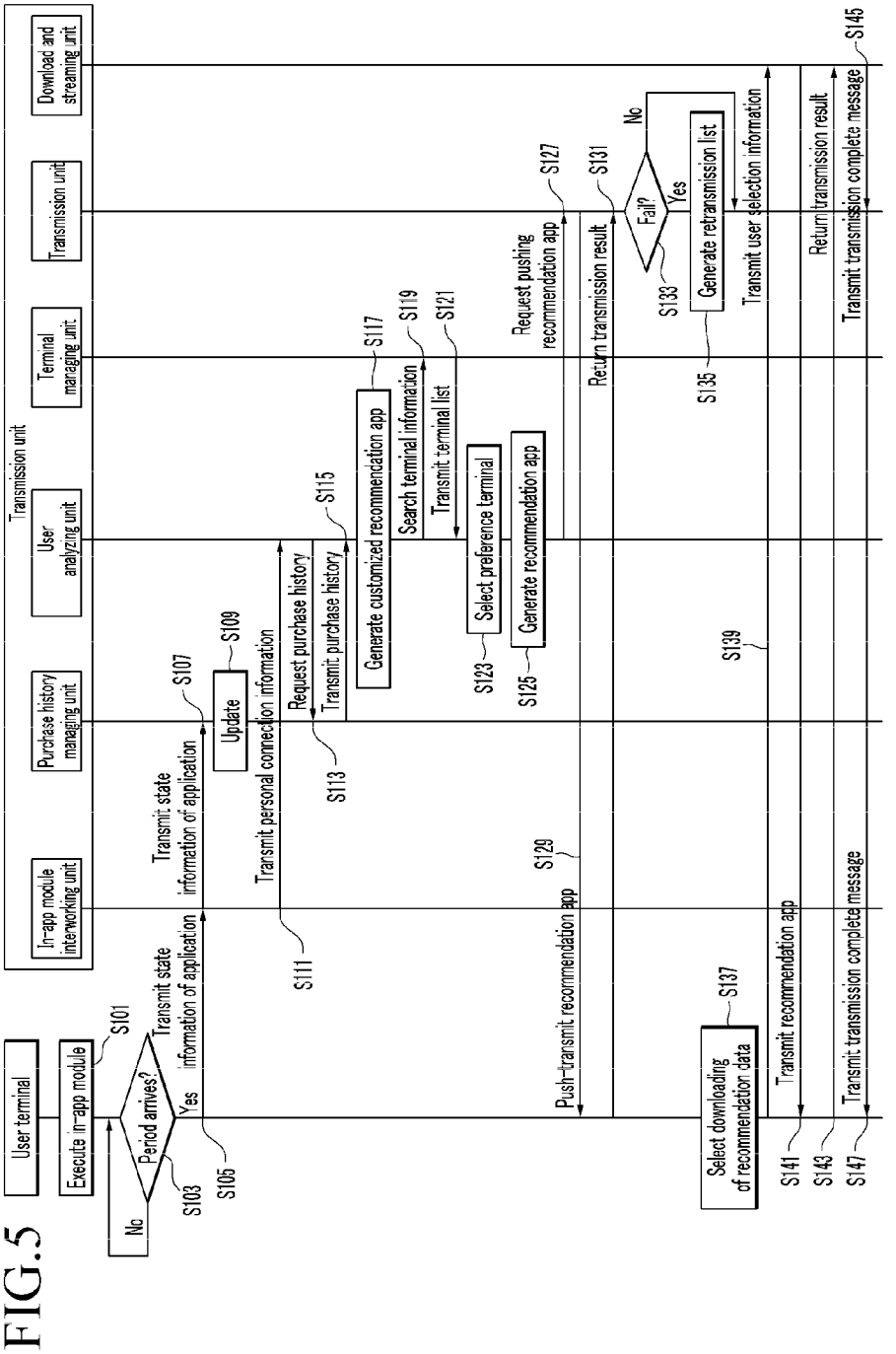

User terminal
Execute in-app module
S101
Period arrives?
No
Yes
S103
S105
Transmission unit
In-app module interworking unit
Purchase history managing unit
User analyzing unit
Terminal managing unit
Transmission unit
Download and streaming unit
Transmit state information of application
S107
Update
S109
Transmit personal connection information
Request purchase history
S111
Transmit purchase history
S113
S115
Generate customized recommendation app
S117
Search terminal information
S119
Transmit terminal list
S121
Select preference terminal
S123
Generate recommendation app
S125
Request pushing recommendation app
S127
Push-transmit recommendation app
S129
Return transmission result
S131
Fail?
No
Yes
S133
Generate retransmission list
S135
Transmit user selection information
S139
Select downloading of recommendation data
S137
Transmit recommendation app
S141
Return transmission result
S143
Transmit transmission complete message
S147
Transmit transmission complete message
S145

FIG.6

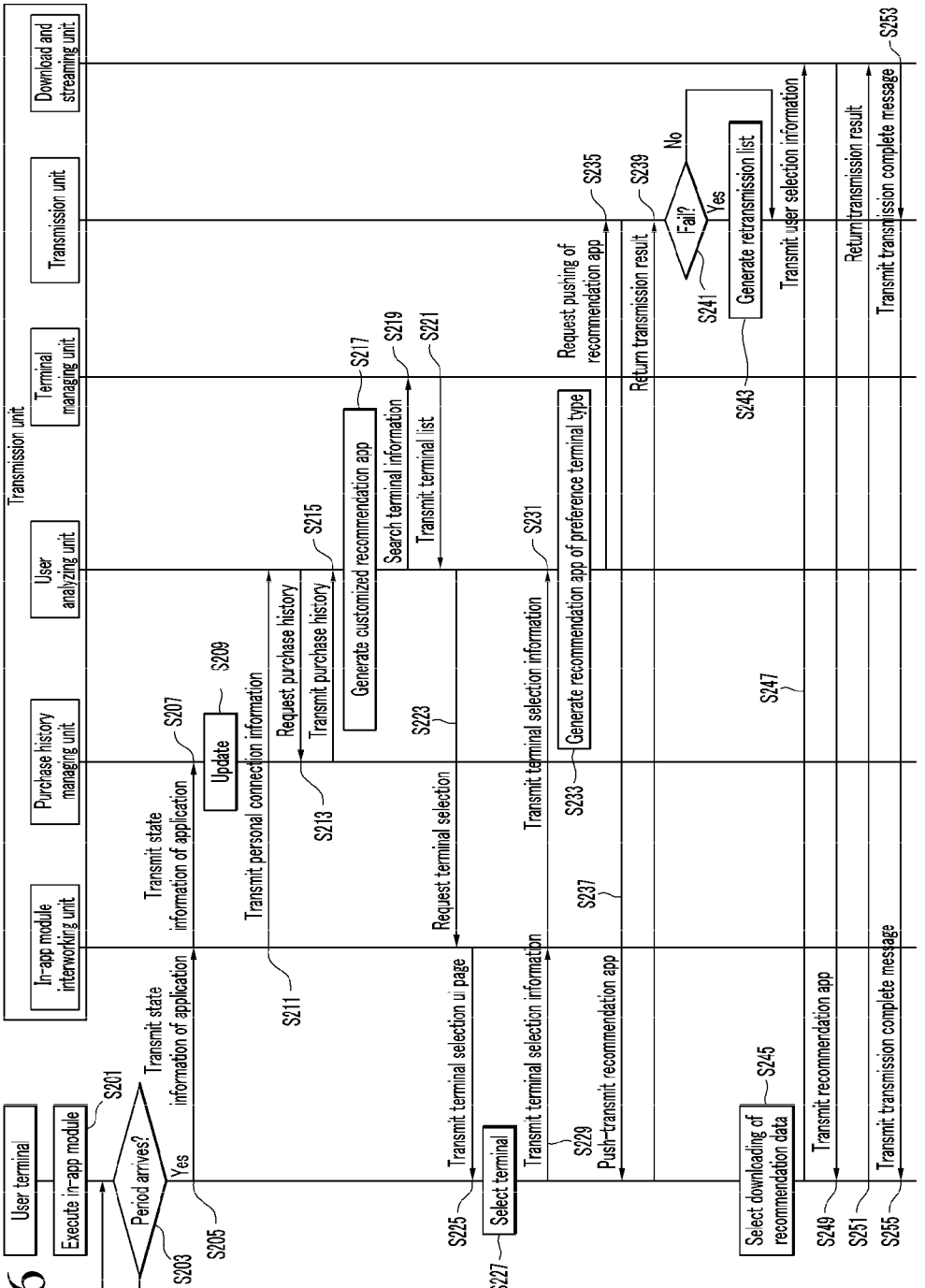

User terminal
Transmission unit
In-app module interworking unit
Purchase history managing unit
User analyzing unit
Terminal managing unit
Transmission unit
Download and streaming unit
Execute in-app module
S201
Period arrives?
No
Yes
S203
Transmit state information of application
S205
Transmit state information of application
S207
Update
S209
Transmit personal connection information
S211
Request purchase history
Transmit purchase history
S213
S215
Generate customized recommendation app
S217
Search terminal information
Transmit terminal list
S219
S221
Request terminal selection
S223
Transmit terminal selection ui page
S225
Select terminal
S227
Transmit terminal selection information
S231
Generate recommendation app of preference terminal type
S233
Transmit terminal selection information
S237
Push-transmit recommendation app
S229
Request pushing of recommendation app
S235
Return transmission result
S239
Fail?
No
Yes
S241
Generate retransmission list
S243
Transmit user selection information
S247
Select downloading of recommendation data
S245
Transmit recommendation app
S249
Return transmission result
S251
Transmit transmission complete message
S255
Transmit transmission complete message
S253

FIG.7

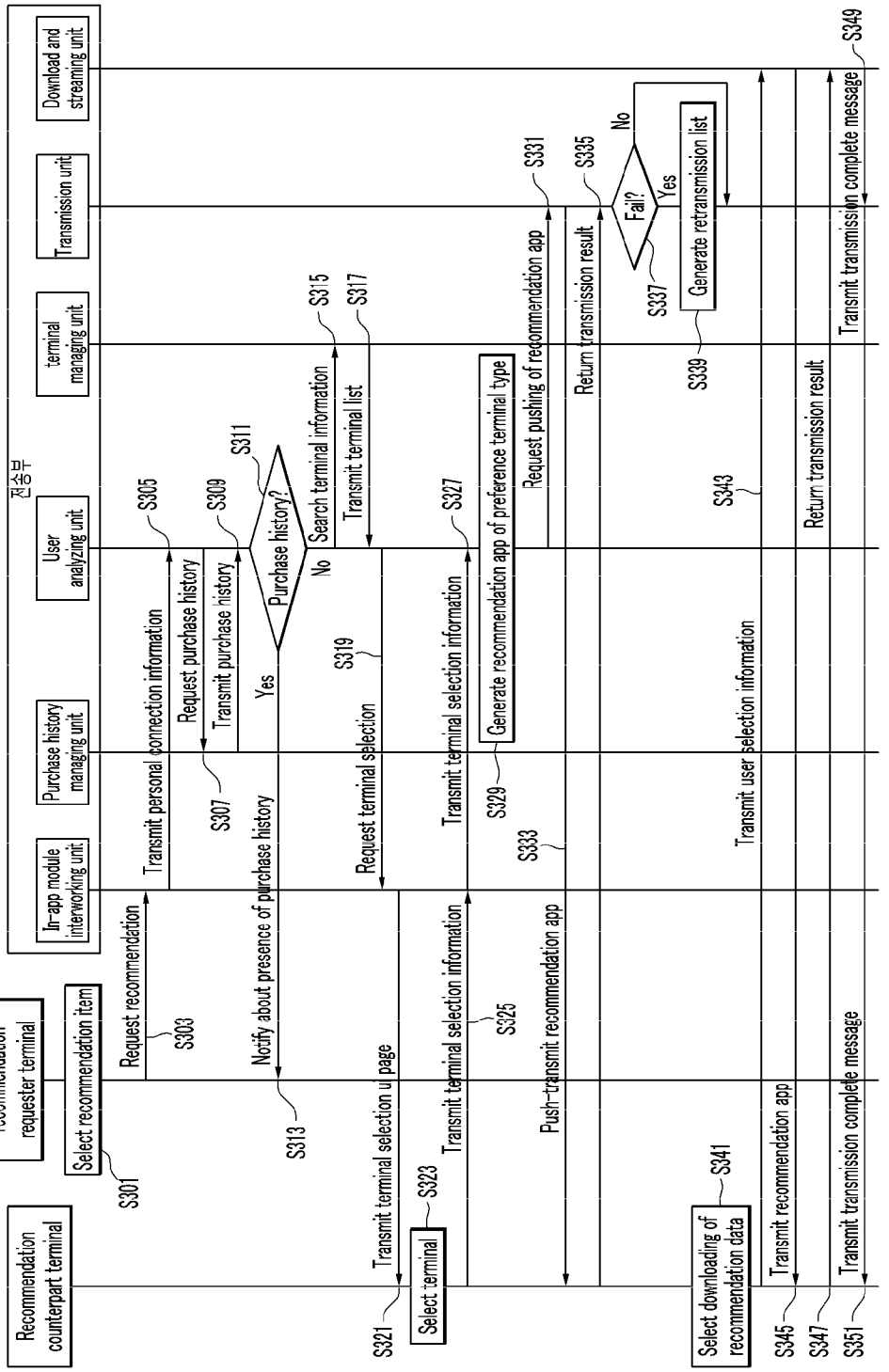

Recommendation counterpart terminal
recommendation requester terminal
전송부
In-app module interworking unit
Purchase history managing unit
User analyzing unit
terminal managing unit
Transmission unit
Download and streaming unit
Select recommendation item
S301
Request recommendation
S303
Transmit personal connection information
S305
Request purchase history
S307
Transmit purchase history
S309
Purchase history?
S311
Yes
No
Search terminal information
S315
Transmit terminal list
S317
Notify about presence of purchase history
S313
Request terminal selection
S319
Transmit terminal selection information
S327
Generate recommendation app of preference terminal type
S329
Request pushing of recommendation app
S331
Return transmission result
S335
Fail?
S337
No
Yes
Generate retransmission list
S339
Transmit terminal selection ui page
S321
Select terminal
S323
Transmit terminal selection information
S325
Push-transmit recommendation app
S333
Transmit user selection information
S343
Select downloading of recommendation data
S341
Transmit recommendation app
S345
Return transmission result
S347
Transmit transmission complete message
S351
Transmit transmission complete message
S349

FIG.8

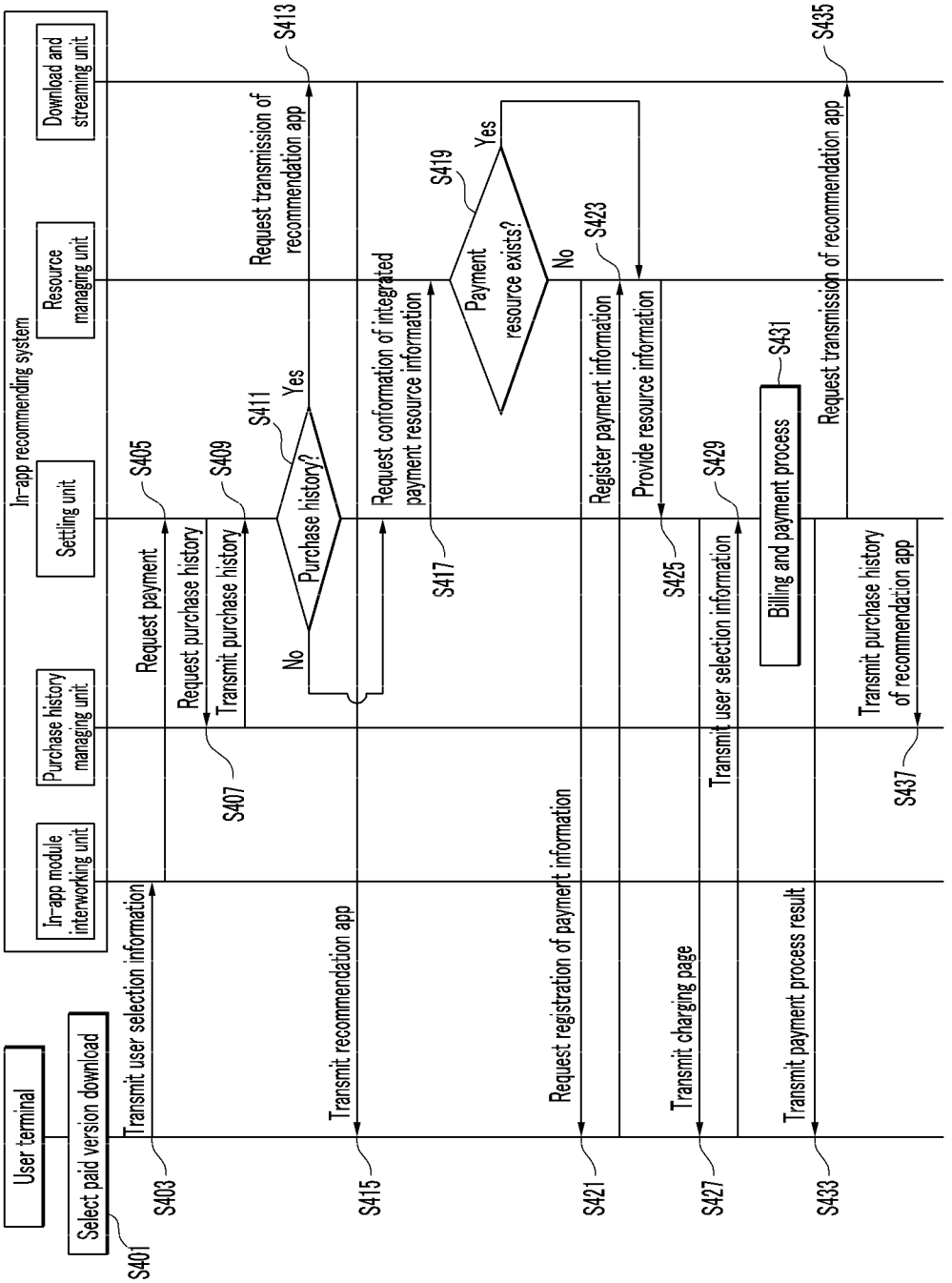

User terminal
In-app recommending system
In-app module interworking unit
Purchase history managing unit
Setting unit
Resource managing unit
Download and streaming unit
Select paid version download
S401
Transmit user selection information
S403
Request payment
S405
Request purchase history
Transmit purchase history
S407
S409
Purchase history?
S411
Yes
No
Request transmission of recommendation app
S413
Transmit recommendation app
S415
Request conformation of integrated payment resource information
S417
Payment resource exists?
S419
Yes
No
Request registration of payment information
S421
Register payment information
S423
Provide resource information
S425
Transmit charging page
S427
Transmit user selection information
S429
Billing and payment process
S431
Transmit payment process result
S433
Request transmission of recommendation app
S435
Transmit purchase history of recommendation app
S437

FIG.9

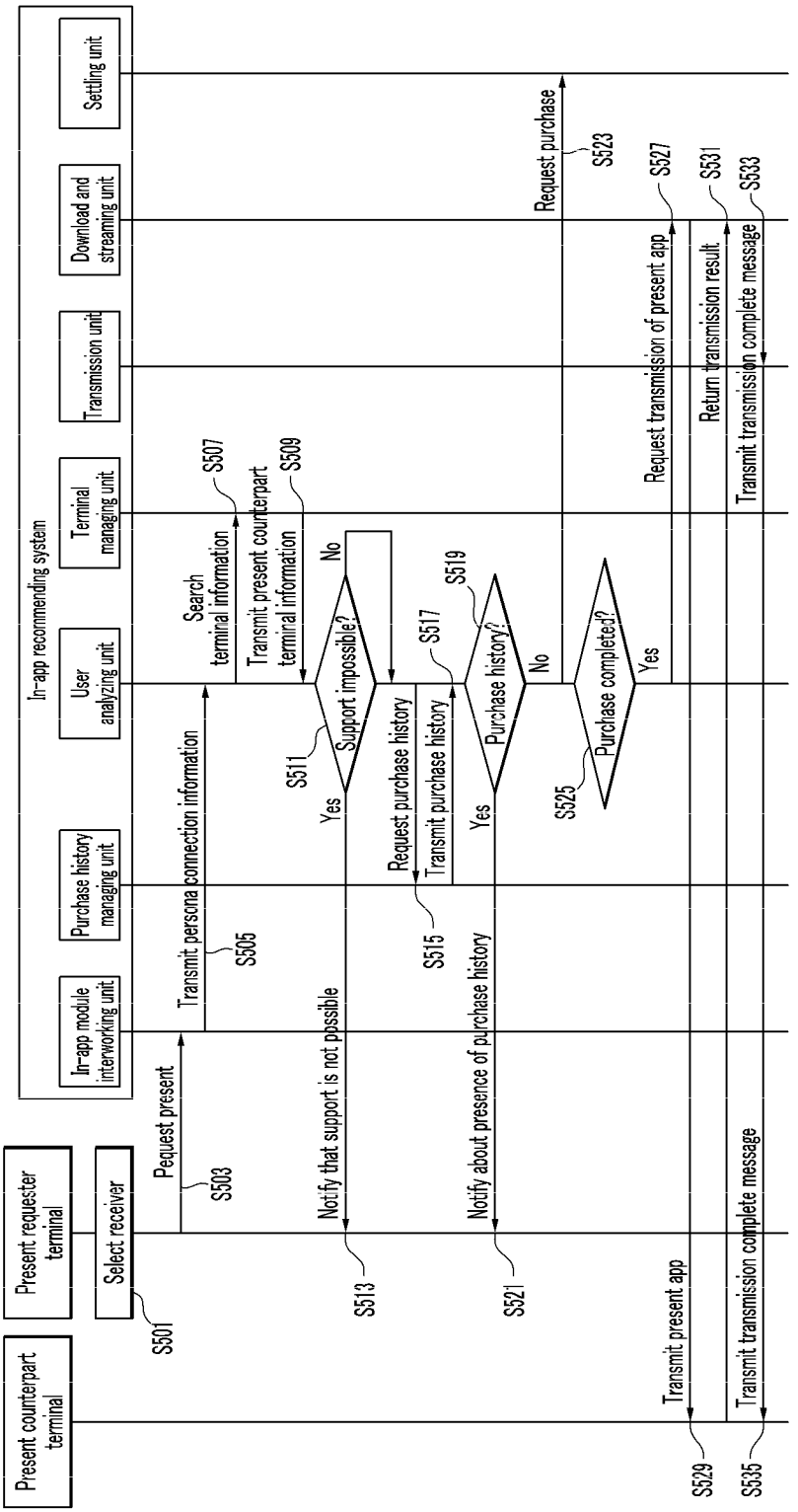

Present counterpart terminal
Present requester terminal
Select receiver
S501
Request present
S503
In-app recommending system
In-app module interworking unit
Purchase history managing unit
User analyzing unit
Terminal managing unit
Transmission unit
Download and streaming unit
Settling unit
Transmit persona connection information
S505
Search terminal information
S507
Transmit present counterpart terminal information
S509
Support impossible?
S511
No
Yes
Notify that support is not possible
S513
Request purchase history
S515
Transmit purchase history
S517
Purchase history?
S519
Yes
No
Notify about presence of purchase history
S521
Purchase completed?
S525
Yes
Request purchase
S523
Request transmission of present app
S527
Transmit present app
S529
Return transmission result
S531
Transmit transmission complete message
S533
Transmit transmission complete message
S535

FIG.10

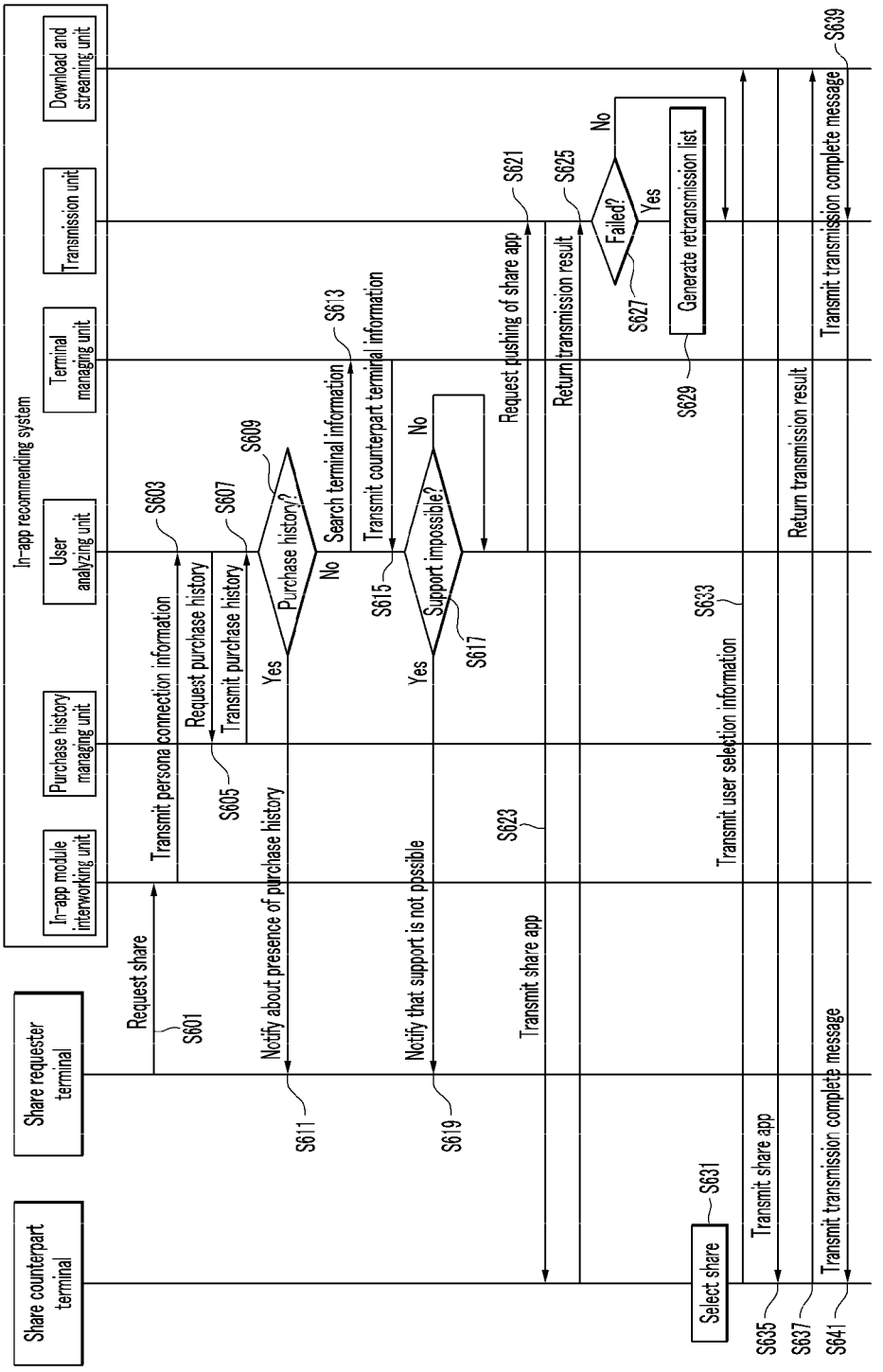
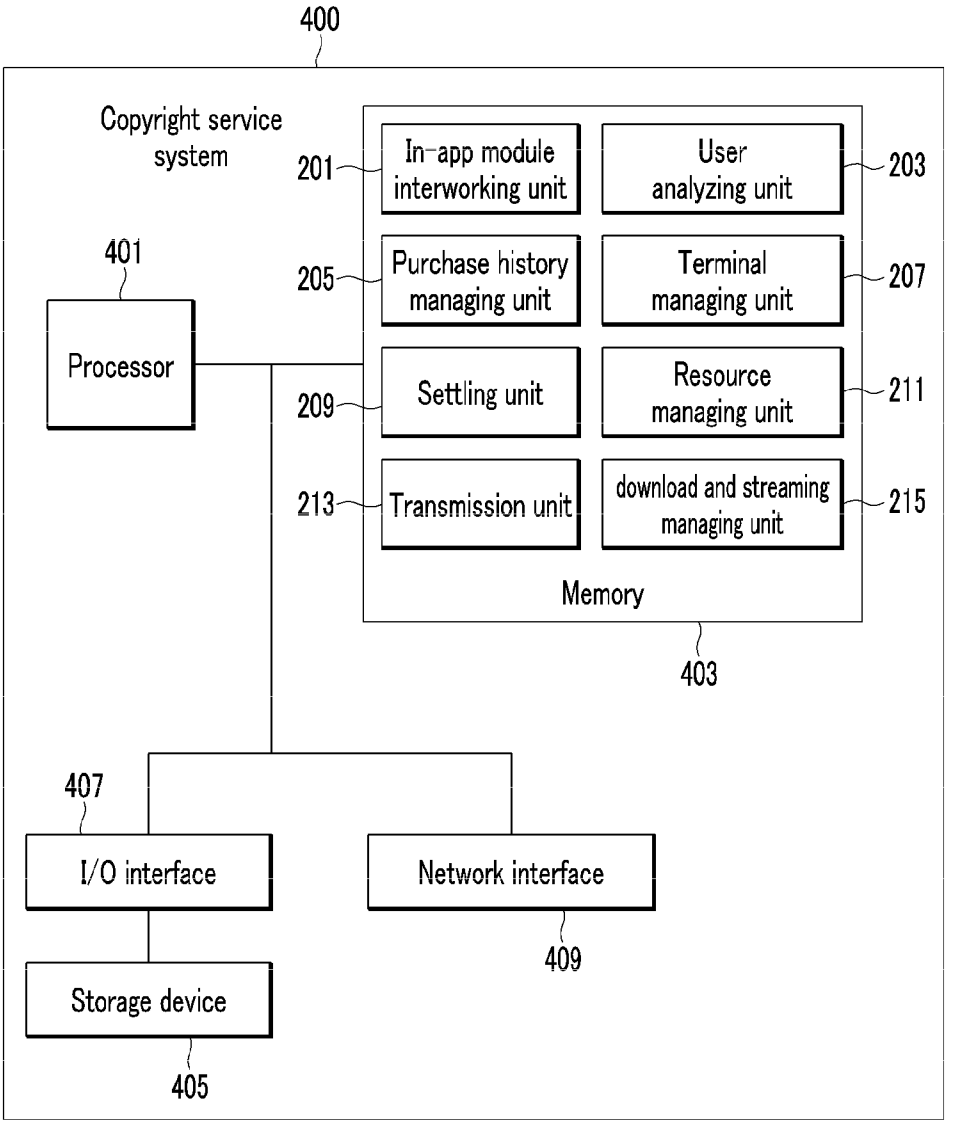

Share counterpart terminal
Share requester terminal
In-app recommending system
In-app module interworking unit
Purchase history managing unit
User analyzing unit
Terminal managing unit
Transmission unit
Download and streaming unit
Request share
S601
Transmit persona connection information
S603
Request purchase history
S605
Transmit purchase history
S607
Purchase history?
S609
Yes
No
Search terminal information
S613
Transmit counterpart terminal information
S615
Support impossible?
S617
Yes
No
Request pushing of share app
S621
Return transmission result
S625
Failed?
S627
Yes
No
Generate retransmission list
S629
Notify about presence of purchase history
S611
Notify that support is not possible
S619
Transmit share app
S623
Transmit user selection information
S633
Return transmission result
Transmit transmission complete message
S639
Select share
S631
Transmit share app
S635
Transmit transmission complete message
S637
S641

FIG.11


400
Copyright service system
201
In-app module interworking unit
User analyzing unit
203
401
205
Purchase history managing unit
Terminal managing unit
207
Processor
209
Settling unit
Resource managing unit
211
213
Transmission unit
download and streaming managing unit
215
Memory
403
407
I/O interface
Network interface
409
Storage device
405

# IN-APP RECOMMENDATION SYSTEM AND USER TERMINAL

## CROSS-REFERENCE TO RELATED PATENT APPLICATION

**[0001]** This application is a National Stage of International Application No. PCT/KR2011/005135 filed on Jul. 13, 2011, and claims the benefit of Korean Patent Application No. 10-2011-0059262 filed on Jun. 17, 2011, in the Korean Intellectual Property Office, the disclosures of which are incorporated herein in their entirety by reference.

## BACKGROUND OF THE INVENTION

**[0002]** 1. Field of the Invention

**[0003]** The exemplary embodiments relate to an in-app recommending system and a user terminal.

**[0004]** 2. Description of the Related Art

**[0005]** Smartphones that have been actively developed and released provide various applications. Also, various multimedia content and applications may be purchased through an online market such as an app store.

**[0006]** However, in the related art, when a user finds interesting multimedia content while watching a TV or while Web surfing, the user needs to directly connect to an online market, search for the multimedia content, and subsequently purchase it, causing inconvenience.

**[0007]** Also, the user may download the purchased content to his or her phone, but a function allowing for the user to present content to a different user, in particular, a friend, or to download content to another of his or her terminals is not provided.

**[0008]** Further, a function allowing the user to share multimedia content with a different user, while executing the multimedia content, has not been proposed yet.

**[0009]** The above information disclosed in this Background section is only for enhancement of understanding of the background of the invention and therefore it may contain information that does not form the prior art that is already known in this country to a person of ordinary skill in the art.

## SUMMARY OF THE INVENTION

**[0010]** The exemplary embodiments have been made in an effort to provide an in-app recommending system and a user terminal that provide an in-app service allowing for recommending a customized application and allowing for users to present, recommend, and share an application through an in-app module.

**[0011]** An exemplary embodiment provides an in-app recommending system. The in-app recommending system includes: an in-app module interworking unit configured to periodically collect state information of a particular application having an in-app module from a user terminal in which the in-app module is installed, the in-app module being an application in the form of a component which can be inserted into a plurality of unspecified applications to provide a common service; a user analyzing unit configured to generate recommendation information of multimedia content on the basis of the state information of the particular application, the multimedia content including an application and digital content; and a transmission unit configured to push-transmit the recommendation information to the in-app module of the user terminal.

**[0012]** Another exemplary embodiment provides a user terminal. The user terminal includes: an in-app module configured as an application in the form of a component which can be inserted into a plurality of unspecified applications to provide a common service, installed in a particular application installed in the user terminal, configured to periodically transmit state information of the particular application to an in-app recommending system, receive multimedia content recommendation information generated by the in-app recommending system, and transmit, when user confirmation with respect to the multimedia content recommendation information is input, the user confirmation to the in-app recommending system; and a download unit configured to download multimedia content included in the recommendation information from the in-app recommending system.

**[0013]** According to an exemplary embodiment, since an in-app service is implemented in the form of a component and inserted in a plurality of unspecified applications, a customized recommended service can be easily provided in any environment.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0014]** The above and other features and aspects of the present invention will become more apparent by describing in detail exemplary embodiments thereof with reference to the attached drawings in which:

**[0015]** FIG. **1** is a view illustrating a configuration of an in-app service network according to an exemplary embodiment;

**[0016]** FIG. **2** is a block diagram illustrating a configuration of a user terminal according to an exemplary embodiment;

**[0017]** FIG. **3** is a functional block diagram of an in-app module according to an exemplary embodiment.

**[0018]** FIG. **4** is a block diagram illustrating a configuration of an in-app recommending system according to an exemplary embodiment.

**[0019]** FIG. **5** is a flowchart illustrating a process of an in-app recommending method according to an exemplary embodiment;

**[0020]** FIG. **6** is a flowchart illustrating a process of an in-app recommending method according to another exemplary embodiment;

**[0021]** FIG. **7** is a flowchart illustrating a process of an in-app recommending method according to another exemplary embodiment;

**[0022]** FIG. **8** is a flowchart illustrating a purchase process according to an exemplary embodiment;

**[0023]** FIG. **9** is a flowchart illustrating an in-app presenting method according to an exemplary embodiment;

**[0024]** FIG. **10** is a flowchart illustrating an in-app sharing method according to an exemplary embodiment; and

**[0025]** FIG. **11** is a schematic view of an in-app recommending system according to another exemplary embodiment.

## DETAILED DESCRIPTION OF THE INVENTION

**[0026]** In the following detailed description, only certain exemplary embodiments have been shown and described, simply by way of illustration. As those skilled in the art would realize, the described exemplary embodiments may be modified in various different ways, all without departing from the spirit or scope of the present invention. Accordingly, the drawings and description are to be regarded as illustrative in

nature and not restrictive. Like reference numerals designate like elements throughout the specification.

**[0027]** Throughout the specification, unless explicitly described to the contrary, the word "comprise" and variations such as "comprises" or "comprising" will be understood to imply the inclusion of stated elements but not the exclusion of any other elements.

**[0028]** In addition, the terms such as"-er", "-or", and "module" described in the specification mean units for processing at least one function and operation and can be implemented by hardware components or software components and combinations thereof.

**[0029]** Hereinafter, an in-app recommending system and a user terminal according to an exemplary embodiment will be described in detail.

**[0030]** First, in-app refers to an application in the form of a component which can be inserted into a plurality of unspecified applications to provide a common service.

**[0031]** Here, an application may be a web application accessed by a uniform resource locator (URL) of a web page and executed on the web, or may be a native application downloaded to a terminal and executed in the terminal.

**[0032]** FIG. **1** is a view illustrating a configuration of an in-app service network according to an exemplary embodiment.

**[0033]** Referring to FIGS. **1** and **2**, the in-app service network includes a user terminal **100** and an in-app recommending system **200**. The user terminal **100** and the in-app recommending system **200** are connected via a network **300**.

**[0034]** The network **300** provides an access path allowing the user terminal **100** to access the in-app system **200**. When the user terminal **100** is a wired terminal, the network **300** may be a wired communication network such as the Internet, and when the user terminal **100** is a mobile terminal, the network **300** may be a wireless communication network such as a mobile communication network.

**[0035]** The user terminal **100** may include any terminal which may access the network **300** to transmit and receive data and store and execute digital content. The user terminal **100** may include any terminal which includes an in-app module **101** installed therein and is able to access the network **300**.

**[0036]** The in-app recommending system **200** interworks or communicates with the in-app module **101** installed in the user terminal **100** to generate customized recommended information on the basis of state information of a particular application, e.g., a first application, having the in-app module **101** installed therein, and provides the same.

**[0037]** The recommended information includes a recommended application and recommended digital content.

**[0038]** Detailed configurations of the user terminal **100** and the in-app recommending system **200** will now be described.

**[0039]** FIG. **2** is a block diagram illustrating a configuration of a user terminal according to an exemplary embodiment.

**[0040]** Referring to FIG. **2**, the user terminal **100** includes the in-app module **101**, a download unit **103**, a display unit **105**, an input unit **107**, a communication unit **109**, and a controller **111**.

**[0041]** The in-app module **101** is illustrated as a separate component, but is a component installed in a particular application. In this case, the in-app module **101** is provided in the form of an open API to application developers so as to be installed.

**[0042]** The in-app module **101** refers to an application in the form of a component which can be inserted into a plurality of unspecified applications to provide a common service. The in-app module **101** periodically transmits state information of a particular application in which the in-app module **101** is installed, to the in-app recommending system **200**. On the basis of state information from the in-app recommending system **200**, the in-app module **101** receives multimedia content recommendation information generated by the in-app recommending system **200**, and when user confirmation with respect to the multimedia content recommendation information is received, the in-app module **101** transmits the user confirmation. In an exemplary embodiment, multimedia content is defined as including an application and digital content.

**[0043]** While a particular application is being executed, the in-app module **101** outputs a recommended item, a gift item, and a share item of the particular application to a screen, and when one of the items is selected, the in-app module **101** transmits a request for the corresponding item of the particular application to the in-app recommending system **200**.

**[0044]** In a case in which the particular application provides a social service, when a particular friend, i.e., a first friend, is selected from a friend list of a subscriber of the user terminal, the in-app module **101** transmits information regarding a terminal of the particular friend and the request for the corresponding item.

**[0045]** The download unit **103** downloads multimedia content included in the recommended information from the in-app recommending system **200**.

**[0046]** The display unit **105** outputs various types of information according to an operation of the user terminal **100** to the screen.

**[0047]** The input unit **107** is a means for allowing the user to input information or select information displayed on the display unit **130**.

**[0048]** The communication unit **109** is connected to the network **200** to provide a path for transmitting and receiving data.

**[0049]** The controller **111** is to a component which performs a general operation of the user terminal **100** according to an operating system of the user terminal **100**, and is connected to the in-app module **101**, the download unit **103**, the display unit **105**, the input unit **107**, and the communication unit **109** to control associated operations between the respective components.

**[0050]** FIG. **3** is a functional block diagram of the in-app module according to an exemplary embodiment.

**[0051]** Referring to FIG. **3**, the in-app module **101** includes a 'TALK' function, a 'push' function, a 'download and streaming' function, a 'control' function, and an 'in-app market'.

**[0052]** Here, the 'TALK' function provides a communication function between user terminals **100** having the in-app module **101** installed therein. According to the function, an environment in which a counterpart terminal having the in-app module **101** is registered by using an ID or a phone number may be provided.

**[0053]** The 'push' function pushes multimedia content stored in the user terminal **100** having the in-app module **101** installed therein to a different user terminal **100** having an in-app module **101** installed therein.

**[0054]** The 'download and streaming' function may download and stream multimedia content from the in-app recommending system **200**.

**[0055]** The 'control' function controls an in-app service of the in-app module **120**, and it may confirm authority to execute multimedia content.

**[0056]** The 'in-app market' function may be connected to the in-app recommending system **200** to provide an interface environment allowing for purchasing multimedia content.

**[0057]** FIG. **4** is a block diagram illustrating a configuration of the in-app recommending system according to an exemplary embodiment.

**[0058]** Referring to FIG. **4**, the in-app recommending system **200** includes an in-app module interworking unit **201**, e.g, in-app module interworker, a user analyzing unit **203**, e.g., a user analyzer, a purchase history managing unit **205**, e.g., a purchase history manager, a terminal managing unit **207**, e.g., a terminal manager, a settling unit **209**, e.g., a settler, a resource managing unit **211**, e.g., a resource manager, a transmission unit **213**, e.g., a transmitter, and a download and streaming unit **215**, e.g., a downloader and streamer.

**[0059]** The in-app module interworking unit **201** periodically collects state information of a particular application including the in-app module **101** installed therein from the in-app module **101**.

**[0060]** The user analyzing unit **203** generates information regarding recommendation of multimedia content on the basis of the state information of the particular application. The multimedia content includes an application and digital content.

**[0061]** The recommendation information is generated in consideration of purchase history of the subscriber of the user terminal.

**[0062]** The user analyzing unit **203** selects a subscriber preference terminal on the basis of the purchase history among terminals owned by the subscriber of the user terminal **100**, and generates recommendation information that may be used by the subscriber preference terminal.

**[0063]** The user analyzing unit **203** also transmits a user interface page configured to select a terminal to the user terminal **100**. Information regarding a terminal selected by the user is received from the user terminal **100**. Recommendation information executable in the terminal selected by the user is generated.

**[0064]** Also, the user analyzing unit **203** pushes a recommendation message including the recommendation information to the user terminal **100**, and when a confirmation request is received from the user terminal, the user analyzing unit **203** requests transmission of recommendation content.

**[0065]** The recommendation message includes an experience version download item for downloading multimedia content to use it free of charge, e.g., a trial version or a free version, and a paid version download item for purchasing multimedia content to use it.

**[0066]** Thus, when the user selects the experience version download item and a confirmation request is received, the user analyzing unit **203** transmits experience version multimedia content to the user terminal. In a case in which the user selects a paid version download item and a confirmation request is received, when purchasing of multimedia content is completed, the user analyzing unit **203** may request transmission of multimedia content to the user terminal.

**[0067]** The experience version multimedia content includes multimedia content having limited usage term or a portion of multimedia content.

**[0068]** Also, when the recommendation request is received, the user analyzing unit **203** checks purchase history of a counterpart terminal as a recommendation target to determine whether a particular application having an in-app module of a user terminal installed therein has been purchased. When the particular application has not been purchased, the user analyzing unit **203** transmits a terminal selection user interface page including a terminal list of a subscriber of a counterpart terminal to the counterpart terminal to generate a particular application as a recommendation application such that it may be executed in a terminal selected by the counterpart subscriber.

**[0069]** When a present request is received, the user analyzing unit **203** checks terminal information and purchase history of the subscriber of the counterpart terminal as a present request target to determine whether a particular application having the in-app module **101** installed therein has been purchased. In a case in which the particular application has not been purchased, the user analyzing unit **203** determines whether the particular application is executable in the counterpart terminal. When the particular application is executable, the user analyzing unit **203** requests to push and transmit the paid particular application to the counterpart terminal.

**[0070]** When a share request is received, the user analyzing unit **203** checks terminal information and purchase history of the subscriber of the counterpart terminal as a share request target to determine whether a particular application having the in-app module **101** installed therein has been purchased. In a case in which the particular application has not been purchased, the user analyzing unit **203** determines whether the particular application is executable in the counterpart terminal. When the particular application is executable, the user analyzing unit **203** push-transmits a message recommending an experience version of the particular application to the counterpart terminal, and when acceptance of the experience version recommendation is received from the counterpart terminal, the user analyzing unit **203** provides the particular application of the experience version to the counterpart terminal.

**[0071]** The purchase history managing unit **205** manages purchase history of multimedia content by subscribers.

**[0072]** The terminal managing unit **207** manages a terminal list including terminals owned by each subscriber, and searches terminal information of the subscriber of the user terminal **100**.

**[0073]** When paid version confirmation is received from the user terminal, the settling unit **209** checks whether integrated payment resource information of the subscriber of the user terminal exists. When integrated payment resource information exists, the settling unit **209** pays for the recommendation multimedia content by using the integrated payment resource information. When integrated payment resource information does not exist, the settling unit **209** receives payment information, registers it as integrated payment resource information, and pays for it.

**[0074]** The resource managing unit **211** manages integrated payment resource information by subscribers, and provides the same to the settling unit **209**.

**[0075]** The transmission unit **213** push-transmits the recommendation information generated by the user analyzing unit **203** to the in-app module **101**.

**[0076]** The download and streaming unit **215** transmits multimedia content, namely, a recommendation app, a present app, a share app, and the like, requested by the user terminal **100**, to the user terminal **100**.

**[0077]** Various exemplary embodiments of the in-app recommending method will be described on the basis of the foregoing contents. The in-app recommending method will be described in association with the configurations of FIGS. **1** through **4**, and the same reference numerals are used for the same components.

**[0078]** FIG. **5** is a flowchart illustrating a process of an in-app recommending method according to an exemplary embodiment.

**[0079]** Referring to FIG. **5**, the in-app module **101** is executed in the user terminal **100** (S**101**). When a period arrives (S**103**), the in-app module **101** transmits state information of a particular application having the in-app module **101** installed therein (S**105**). The state information may include purchase information of the particular application, purchase history of the subscriber through the particular application, and the like.

**[0080]** Then, the in-app module interworking unit **201** of the in-app recommending system **200** receives the state information and delivers the same to the purchase history managing unit **205** (S**107**). The purchase history managing unit **205** then updates the received state information in a purchase history DB (not shown) of each subscriber (S**109**).

**[0081]** Thereafter, the in-app module interworking unit **201** transmits personal connection information of the in-app module **101** to the user analyzing unit **203** (S**111**).

**[0082]** Subsequently, the user analyzing unit **203** requests purchase history from the purchase history managing unit **205** (S**113**) and receives the same (S**115**). The user analyzing unit **203** generates a customized recommendation app and recommendation content (S**117**).

**[0083]** Also, the user analyzing unit **203** requests the terminal managing unit **207** to search terminal information of the subscriber of the user terminal and receives the same (S**119** and S**121**). The user analyzing unit **203** selects a preference terminal of the subscriber of the user terminal on the basis of the purchase history received in operation S**115** (S**123**), and generates a recommendation app or recommendation content that may be executable in the preference terminal (S**125**). The purchase history includes purchase details through a terminal owned by the subscriber.

**[0084]** Then, the user analyzing unit **203** requests the transmission unit **213** to push the information including information regarding the generated recommendation app (S**127**). The transmission unit **213** transmits requested recommendation information to the user terminal **100** (S**129**). The recommendation information may be implemented as a message. The recommendation message may be implemented as "Recommendation app arrived→paid version download→'experience version download'".

**[0085]** The user terminal **100** then returns the transmission result (S**131**).

**[0086]** In this case, the transmission unit **213** checks failure on the basis of the transmission result (S**133**), and in case of failure, the transmission unit **213** generates a retransmission list for retransmission afterwards (S**135**).

**[0087]** Thereafter, when downloading of recommendation information is selected (S**137**), the user terminal **100** transmits user selected information to the download and streaming unit **215** (S**139**) to receive content included in the recommendation information, namely, a recommended app or content (S**141**).

**[0088]** When the user terminal **100** returns the transmission result (S**143**), a transmission complete message is received (S**145**, S**147**).

**[0089]** FIG. **6** is a flowchart illustrating a process of an in-app recommending method according to another exemplary embodiment.

**[0090]** Referring to FIG. **6**, the in-app module **101** is executed in the user terminal **100** (S**201**). When a period arrives (S**203**), the in-app module **101** transmits state information of a particular application having the in-app module **101** installed therein (S**205**).

**[0091]** Then, the in-app module interworking unit **201** of the in-app recommending system **200** receives the state information and delivers the same to the purchase history managing unit **205** (S**207**). The purchase history managing unit **205** then updates the received state information in a purchase history DB (not shown) of each subscriber (S**209**).

**[0092]** Thereafter, the in-app module interworking unit **201** transmits personal connection information of the in-app module **101** to the user analyzing unit **203** (S**211**).

**[0093]** The user analyzing unit **203** then requests purchase history from the purchase history managing unit **205** (S**213**) and receives the same (S**215**). The user analyzing unit **203** generates a customized recommendation app and recommendation content (S**217**).

**[0094]** The user analyzing unit **203** requests the terminal managing unit **207** to search terminal information of the subscriber of the user terminal and receives the same (S**219** and S**221**). The user analyzing unit **203** requests the in-app module interworking unit **201** to select a terminal (S**223**).

**[0095]** The in-app module interworking unit **201** transmits a user interface (UI) allowing for selecting a terminal to the user terminal **100** (S**225**). Here, although not shown, the in-app module interworking unit **201** interworks with a UI server that provides a UI page and receives information selected by the user from the UI page.

**[0096]** In this case, the UI page may be implemented as "Please select terminal for receiving recommendation app based on social used by Mr. or Miss OOO→mobile phone→pad".

**[0097]** When the user selects a terminal (S**227**), the user terminal **100** transmits terminal selection information to the in-app module interworking unit **201** (S**229**). Then, the in-app module interworking unit **201** delivers the terminal selection information to the user analyzing unit **203** (S**231**).

**[0098]** The user analyzing unit **203** generates recommendation app or recommendation content executable in the user selected terminal (S**233**).

**[0099]** The user analyzing unit **203** then requests the transmission unit **213** to push information including information regarding the generated recommendation app (S**235**). The transmission unit **213** transmits the requested recommendation information to the user terminal **100** (S**237**). The user terminal **100** returns the transmission result (S**239**).

**[0100]** Here, the transmission unit **213** checks failure on the basis of the transmission result (S**241**), and in case of failure, the transmission unit **213** generates a retransmission list for retransmission afterwards (S**243**).

**[0101]** Thereafter, when downloading of recommendation information is selected (S**245**), the user terminal **100** transmits user selected information to the download and streaming unit **215** (S**247**) to receive content included in the recommendation information, namely, a recommended app or content (S**249**).

**[0102]** When the user terminal **100** returns the transmission result (S**251**), a transmission complete message is received (S**253**, S**255**).

**[0103]** FIG. **7** is a flowchart illustrating a process of an in-app recommending method according to another exemplary embodiment.

**[0104]** Referring to FIG. **7**, when the recommendation requester terminal **100** selects a recommendation item in a state in which the user executes the particular application (S**301**), the recommendation requester terminal **100** transmits a recommendation request to the in-app module interworking unit **201** (S**303**).

**[0105]** Then, the in-app module interworking unit **201** transmits personal connection information of the in-app module **101** to the user analyzing unit **203** (S**305**).

**[0106]** The user analyzing unit **203** requests purchase history from the purchase history managing unit **205** (S**307**) and receives the same (S**309**).

**[0107]** Here, the user analyzing unit **203** determines whether there is purchase history (S**311**), and when purchase history exists, the user analyzing unit **203** transmits purchase history presence notification to the user terminal **100** (S**313**). Meanwhile, when purchase history does not exist, the user analyzing unit **203** requests the terminal managing unit **207** to search terminal information of the user terminal subscriber and receives (S**315**, S**317**).

**[0108]** The user analyzing unit **203** requests the in-app module interworking unit **201** to select a terminal (S**319**).

**[0109]** The in-app module interworking unit **201** transmits a user interface (UI) for selecting a terminal to the user terminal **100** (S**321**).

**[0110]** When the user selects a terminal (S**323**), the user terminal **100** transmits terminal selection information to the in-app module interworking unit **201** (S**325**). Then, the in-app module interworking unit **201** delivers the terminal selection information to the user analyzing unit **203** (S**327**).

**[0111]** The user analyzing unit **203** generates a recommendation app or recommendation content executable in the user selected terminal (S**329**).

**[0112]** The user analyzing unit **203** requests the transmission unit **213** to push the information including information of the generated recommendation app (S**331**). The transmission unit **213** transmits the requested recommendation information to the user terminal **100** (S**333**). The user terminal **100** returns the transmission result (S**335**).

**[0113]** At this time, the transmission unit **213** checks failures on the basis of the transmission result (S**337**). In case of failure, the transmission unit **213** generates a retransmission list for retransmission afterwards (S**339**).

**[0114]** Thereafter, when downloading of the recommendation information is selected, the user terminal **100** transmits the user selection information to the download and streaming unit **215** (S**343**) to receive content included in the recommendation information, i.e., a recommendation app or content (S**345**).

**[0115]** When the user terminal **100** returns the transmission result (S**347**), a transmission complete message is received (S**349**, S**351**).

**[0116]** FIG. **8** is a flowchart illustrating a purchase process according to an exemplary embodiment. The process of FIG. **8** may be performed in all the processes of FIGS. **5** through **10**.

**[0117]** Referring to FIG. **8**, when the user selects paid version download (S**401**), the user terminal **100** transmits user selection information to the in-app module interworking unit **201** (S**403**).

**[0118]** The in-app module interworking unit **201** requests payment from the settling unit **209** (S**409**).

**[0119]** The settling unit **209** requests purchase history from the purchase history managing unit **205** (S**407**) and receives the same (S**409**).

**[0120]** The settling unit **209** determines whether there is purchase history (S**411**), and when purchase history exists, the settling unit **209** requests transmission of a recommendation app of paid version from the download and streaming unit **215** (S**413**). Then, the download and streaming unit **215** transmits the recommendation app to the user terminal **100** (S**415**).

**[0121]** Meanwhile, when purchase history does not exist, the settling unit **209** requests the resource managing unit **211** to check integrated payment resource information (S**417**). Here, the integrated payment resource information is defined as payment information registered to be paid in a terminal in which the in-app module **101** is installed, regardless of the type of terminal.

**[0122]** The resource managing unit **211** determines whether a payment resource exists (S**419**). When the payment resource does not exist, the resource managing unit **211** requests payment information registration from the user terminal **100** to perform registration (S**421**, S**423**).

**[0123]** When payment resource exists or after registration is performed, the resource managing unit **211** provides the payment resource information requested in operation S**417** to the settling unit **209** (S**425**). The payment resource information includes information required for payment such as mobile payment, credit card payment, or the like.

**[0124]** The settling unit **209** then transmits a charging page including charging information of the recommendation app to the user terminal **100** (S**427**). When the user agrees with the charging page, the settling unit **209** receives user selection information (S**329**).

**[0125]** Then, the settling unit **209** performs the charging and payment process (S**431**), and transmits payment results to the user terminal **100** (S**433**). The settling unit **209** requests transmission of the recommendation app from the download and streaming unit **215** (S**435**). The settling unit **209** transmits purchase history of the recommendation app to the purchase history managing unit **205** (S**437**).

**[0126]** FIG. **9** is a flowchart illustrating an in-app presenting method according to an exemplary embodiment.

**[0127]** Referring to FIG. **9**, when the user selects a receiver (S**501**) and requests a present, the user terminal **100** transmits the present request to the in-app module interworking unit **201** (S**503**). In this case, when a present item is selected in a state in which a particular application is executed, the in-app module **101** may request presenting of the particular application.

**[0128]** The in-app module interworking unit **201** then transmits personal connection information to the user analyzing unit **203** (S**505**).

**[0129]** The user analyzing unit **203** requests the terminal managing unit **207** to search terminal information (S**507**) and receives terminal information of a present counterpart (S**509**).

**[0130]** In this case, the user analyzing unit **203** determines whether the user requested app is executable in the counter-

part terminal (S511). When the counterpart terminal cannot support the user requested app, the user analyzing unit **203** transmits a support unavailability notification to the present requester terminal **100** (S513). For example, the user analyzing unit **203** may transmit a message "Receiver terminal does not support corresponding app".

**[0131]** Meanwhile, when the counterpart terminal supports the user requested app, the user analyzing unit **203** requests purchase history from the purchase history managing unit **205** to receive it (S515, S517). The present counterpart also includes the in-app module **101**, and uploads state information of a particular application having the in-app module **101** installed therein to the purchase history managing unit **205** periodically.

**[0132]** Meanwhile, the user analyzing unit **203** determines whether purchase history exists (S519). When purchase history exists, the user analyzing unit **203** transmits a notification indicating that the counterpart terminal has purchase history to the present requester terminal **100** (S521). For example, the user analyzing unit **203** may transmit a message "Receiver has already purchased the corresponding app".

**[0133]** Meanwhile, in a case in which purchase history does not exist, the user analyzing unit **203** requests purchase from the settling unit **209** (S523) to allow for performing the process of FIG. **8**, and here, corresponding operations are omitted.

**[0134]** Thereafter, when purchase is completed (S525), the user analyzing unit **203** requests transmission of a recommendation app from the download and streaming unit **216** (S527). Then, the download and streaming unit **215** transmits the recommendation app to the present counterpart terminal **100** (S529).

**[0135]** The user terminal **100** then returns the transmission result (S531) and receives a transmission complete message (S533, S535).

**[0136]** FIG. **10** is a flowchart illustrating an in-app sharing method according to an exemplary embodiment.

**[0137]** Referring to FIG. **10**, when the user selects a receiver and requests sharing, the user terminal **100** transmits the share request to the in-app module interworking unit **201** (S601). In this case, when a share item is selected in a state in which a particular application is executed, the in-app module **101** may request sharing of the particular application.

**[0138]** Then, the in-app module interworking unit **201** transmits personal connection information to the user analyzing unit **203** (S603).

**[0139]** The user analyzing unit **203** then requests purchase history from the purchase history managing unit **205** to receive it (S605, S607). The share counterpart also includes the in-app module **101**, and periodically uploads state information of a particular application having the in-app module **101** installed therein to the purchase history managing unit **205**.

**[0140]** Meanwhile, the user analyzing unit **203** determines whether purchase history exists (S609). When purchase history exists, the user analyzing unit **203** transmits a notification indicating that the counterpart terminal has purchase history to the share requester terminal **100** (S611). For example, the user analyzing unit **203** may transmit a message "Receiver has already purchased the corresponding app".

**[0141]** Meanwhile, when there is no purchase history, the user analyzing unit **203** requests the terminal managing unit **207** to search terminal information and receives terminal information of the share counterpart (S615).

**[0142]** In this case, the user analyzing unit **203** determines whether the app requested by the user to share is executable in the counterpart terminal (S617). When the counterpart terminal cannot support the user requested app, the user analyzing unit **203** transmits a support unavailability notification to the share requester terminal **100** (S619). For example, the user analyzing unit **203** may transmit a message "Share target terminal does not support corresponding app".

**[0143]** When the counterpart terminal supports the user requested app, the user analyzing unit **203** requests the transmission unit **213** to push recommendation information including information regarding an app requested to be shared (S621). The transmission unit **213** transmits the requested recommendation information to the share target terminal **100** (S623). Then, the share target terminal **100** returns the transmission result (S625).

**[0144]** In this case, the transmission unit **213** checks failure on the basis of the transmission result (S627), and in case of failure, the transmission unit **213** generates a retransmission list for retransmission afterwards (S629).

**[0145]** Thereafter, when the user selects downloading of the experience version of the recommendation information (S631), the share target terminal **100** transmits user selection information to the download and streaming unit **215** (S633) to receive share app (S635).

**[0146]** When the share target terminal **100** returns the transmission result (S637), it receives a transmission complete message (S639, S641).

**[0147]** FIG. **11** is a schematic view of an in-app recommending system according to another exemplary embodiment.

**[0148]** At least some functions of the in-app recommending system **200** according to an exemplary embodiment may be implemented as hardware or software combined with hardware.

**[0149]** An exemplary embodiment in which the in-app recommending system **200** is combined to a computer system will be described in detail with reference to FIG. **11**.

**[0150]** FIG. **11** is a schematic view of an in-app recommending system according to another exemplary embodiment. The in-app recommending system may be used to perform at least some of the functions of the in-app module interworking unit **201**, the user analyzing unit **203**, the purchase history managing unit **205**, the terminal managing unit **207**, the settling unit **209**, the resource managing unit **211**, the transmission unit **213**, and the download and streaming unit **215** as described above with reference to FIG. **4**.

**[0151]** Referring to FIG. **11**, the in-app recommending system **400** includes a processor **401**, a memory **403**, at least one storage device **405**, an input/output (I/O) interface **407**, and a network interface **409**.

**[0152]** The processor **401** may be implemented as a central processing unit (CPU), a chip set, a microprocessor, or the like, and the memory **403** may be implemented as a medium such as a random access memory (RAM) such as a dynamic RAM (DRAM), a rambus DRAM, a synchronous DRAM (SDRAM), a static RAM (SRAM), or the like.

**[0153]** The storage device **405** may be implemented as a permanent or volatile storage device such as a hard disk, a compact disk read only memory (CD-ROM), a CD rewritable (CD-RW), a digital video disk (DVD)-ROM, a flash memory, or various types of RAM.

**[0154]** The I/O interface **407** allows the processor **401** and/or memory **403** to access the storage device **405**, and the

network interface **409** allows the processor **401** and/or the memory **403** to access the network **300**.

**[0155]** In this case, the processor **401** may load a program command for implementing at least some of the functions of the in-app module interworking unit **201**, the user analyzing unit **203**, the purchase history managing unit **205**, the terminal managing unit **207**, the settling unit **209**, the resource managing unit **211**, the transmission unit **213**, and the download and streaming unit **215** to the memory **403**, and provide control to perform the operations as described above with reference to FIG. **3**.

**[0156]** Also, the storage device **405** may interwork with the processor **401** to perform a function.

**[0157]** The processor **401**, the memory **403**, the storage device **405**, the I/O interface unit **407**, and the network interface **409** illustrated in FIG. **10** may be implemented in a single computer or may be implemented in a plurality of computers in a distributed fashion.

**[0158]** While this invention has been described in connection with what is presently considered to be practical exemplary embodiments, it is to be understood that the invention is not limited to the disclosed exemplary embodiments, but, on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.

**1**. An in-app recommending system comprising:

an in-app module interworker configured to periodically collect state information of a first application having an in-app module, from a user terminal in which the in-app module is installed, the in-app module being an application in a form of a component which can be inserted into a plurality of applications to provide a common service;

a user analyzer configured to generate recommendation information of multimedia content based on the state information of the first application, the multimedia content including an application and digital content; and

a transmitter configured to push-transmit the recommendation information to the in-app module of the user terminal.

**2**. The in-app recommending system of claim **1**, further comprising:

a purchase history manager configured to manage multimedia content purchase histories of subscribers,

wherein the user analyzer generates the recommendation information in consideration of a purchase history of a subscriber of the user terminal.

**3**. The in-app recommending system of claim **2**, further comprising

a terminal manager configured to manage a terminal list including a list of terminals owned the subscribers, and search terminal information of the subscriber of the user terminal,

wherein the user analyzer selects a subscriber preference terminal based on the purchase history in the terminal list of the subscriber of the user terminal, and generates recommendation information available to be used by the subscriber preference terminal.

**4**. The in-app recommending system of claim **3**, wherein

the user analyzer transmits a user interface page configured for selecting of a terminal from the terminal list to the user terminal, receives terminal information selected by the user from the user terminal, and generates recommendation information executable in the terminal selected by the user.

**5**. The in-app recommending system of claim **1**, wherein the user analyzer pushes a recommendation message including the recommendation information to the user terminal, and when a confirmation request is received from the user terminal, the user analyzer transmits multimedia content.

**6**. The in-app recommending system of claim **5**, wherein the recommendation message includes an experience version download item for downloading and using the multimedia content free of charge and a paid version download item for purchasing and using the multimedia content, and

when the user selects the experience version download item and a confirmation request is received, the user analyzer transmits experience version multimedia content to the user terminal, and when the user selects the paid version download item, a confirmation request is received, and purchasing of the multimedia content is completed, the user analyzer transmits the multimedia content to the user terminal.

**7**. The in-app recommending system of claim **6**, wherein the experience version multimedia content is multimedia content whose usage term is limited or includes a portion of multimedia content.

**8**. The in-app recommending system of claim **6**, wherein

when a recommendation request is received from the in-app module of the user terminal, the user analyzer checks purchase history of a counterpart terminal as a recommendation target to determine whether a first application having the in-app module of the user terminal installed therein has been purchased, and if the first application has not been purchased, the user analyzer transmits a terminal selection user interface page including a terminal list of a subscriber of the counterpart terminal to the counterpart terminal and generates the first application as a recommendation application such that the first application is executed in a terminal selected by the counterpart subscriber.

**9**. The in-app recommending system of claim **6**, wherein

when a present request is received from the in-app module of the user terminal, the user analyzer checks terminal information and purchase history of the subscriber of the counterpart terminal as a present request target to determine whether a first application having the in-app module of the user terminal installed therein has been purchased, and if the first application has not been purchased, the user analyzer determines whether the first application is executable in the counterpart terminal, and when the first application is executable, the user analyzer push-transmits the first application, upon being paid, to the counterpart terminal.

**10**. The in-app recommending system of claim **6**, wherein

when a share request is received from the in-app module of the user terminal, the user analyzer checks terminal information and purchase history of the subscriber of the counterpart terminal as a share request target to determine whether a first application having the in-app module of the user terminal installed therein has been purchased, and if the first application has not been purchased, the user analyzer determines whether the first application is executable in the counterpart terminal, and when the first application is executable, the user analyzer push-transmits a message recommending an

experience version of the first application to the counterpart terminal, and when approval of the experience version recommendation is received from the counterpart terminal, the user analyzer provides the experience version of the first application to the counterpart terminal.

**11**. The in-app recommending system of claim **6**, further comprising

a settler configured to, when confirmation of the paid version is received from the user terminal, check integrated payment resource information of the subscriber of the user terminal, to perform, when the integrated payment resource information exists, payment for recommendation multimedia content by using the integrated payment resource information, and to receive, when the integrated payment resource information does not exist, payment information, register the received payment information as the integrated payment resource information, and perform payment.

**12**. A user terminal available for transmitting and receiving data and executing multimedia content, the user terminal comprising:

an in-app module configured as an application in a form of a component which can be inserted into a plurality of unspecified applications to provide a common service, installed in a first application installed in the user terminal, configured to periodically transmit state information of the first application to an in-app recommending system, receive multimedia content recommendation information generated by the in-app recommending system, and transmit, when user confirmation with respect to the multimedia content recommendation information is input, the user confirmation to the in-app recommending system; and

a downloader configured to download multimedia content included in the recommendation information from the in-app recommending system.

**13**. The user terminal of claim **12**, wherein,

while the first application is being executed, the in-app module outputs a plurality of items, the plurality of items comprising a recommendation item, a present item, and a share item of the first application, to a screen, and when one of the plurality of items is selected, the in-app module transmits a request for the selected one of the plurality of items with respect to the first application to the in-app recommending system.

**14**. The user terminal of claim **13**, wherein,

in a case in which the first application is an application providing a social networking service, when a first friend is selected from a friend list of the subscriber of the user terminal, the in-app module transmits a request for terminal information of the first friend and the selected one of the plurality of items.

* * * * *