Exhibit B-10

Based on Headwater's apparent positions as to the scope of the patent's claims, as best they can be deciphered, the reference(s) charted below anticipate(s) or at least render(s) obvious the identified claims. The portions of the prior art reference cited below are not exhaustive but are exemplary in nature. Where Samsung identifies a portion of the prior art reference's text, the identification should be understood as referencing any corresponding figure or diagram, and vice versa.

This disclosure is not an admission that Samsung concedes any claim construction implied or suggested by Headwater's apparent positions as to the scope of the patent's claims, nor is it an admission by Samsung that any of its products are covered by or infringe the patent's claims, particularly when they are properly construed and applied. Samsung is not taking any claim construction positions through this disclosure, including whether the preamble is a limitation.

Samsung reserves the right to rely on additional citations or sources of evidence that also may be applicable, or that may become applicable in light of claim construction, changes in Headwater's infringement contentions, and/or information obtained during discovery as the case progresses. Samsung further reserves the right to amend or supplement this claim chart at a later date as more fully set forth in the Invalidity Contentions.

International Patent Application Publication No. 2008/048075 A1 to Lee ("Lee") qualifies as prior art under at least pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e). Lee is a Patent Application that was filed on or before October 19, 2007, and published on or before April 24, 2008.

To the extent it is argued that Lee does not disclose or include each and every asserted claim limitation, either expressly or inherently, it would have been obvious to a POSITA to incorporate any of the teachings from the other "B" Exhibits (whose exemplary citations for each limitation are incorporated herein) into Lee. Indeed, it would have been obvious to make such combinations and a POSITA would have had reason and motivation to make such combinations at least for reasons described herein and in the cover pleading.

'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
Claim 1	
[1pre] A network system comprising:	To the extent the preamble is a limitation, Lee discloses and/or renders obvious this element. For example, see the following passages and/or figures, as well as related disclosures: Lee at Abstract The present invention relates to a system and a method for providing an integrated push service in an internet service network, and the integrated push service system comprises a plurality of push application servers for providing a push information, the push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data, and an associated application ID specifying the application for invoking the push data; an integrated push service server for receiving the push information and providing the push information to the mobile terminal receiving the push data through an IP push; a mobile internet service network including a plurality of RASs to carry out a communication between the push service server and the mobile terminal receiving the push data; and the mobile terminal for receiving the push information through a mobile internet modem for connecting to the mobile internet service network, the mobile terminal comprising at least one application for associating with the push information, wherein the mobile terminal further comprises a communication session manager resident in a memory thereof, the communication session manager maintaining a communication session with the integrated push service server when the mobile internet modem is connected to the mobile internet service network, and an integrated push service agent for selectively invoking the ap¬ plication compliant to the associated application ID of the received push information to deliver the push data. Lee at [8]

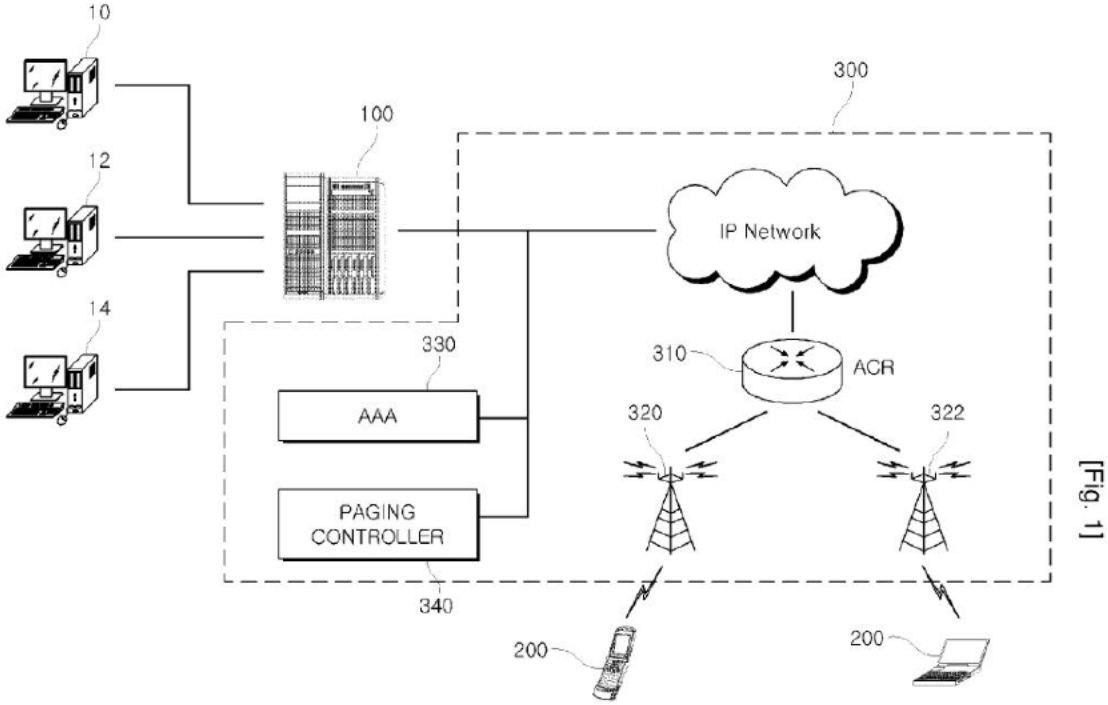
'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
	It is an object of the present invention to provide a system and a method for providing an integrated push service wherein various push data generated from a plurality of push application servers are transmitted through an integrated push service server and a mobile terminal extracts an associated application ID app ID and loads an integrated push service agent selectively invoking a corresponding application to provide the various push services through a mobile internet network, and wherein a separate module for a transmission of the push data is not required for the push service server to reduce a cost for building the push service server, and wherein only a single integrated push service agent is loaded in a memory of the mobile terminal to optimize a system resource of the mobile terminal. Lee at [9] It is another object of the present invention to provide a system and a method for providing an integrated push service wherein an integrated push service server determines whether a receiving mobile terminal is in an idle mode and a push information is broadcasted via a paging controller provided by a mobile internet service network when the mobile terminal is in the idle mode to provide the push information in real time even to the mobile terminal having a communication session with the integrated push service server terminated in the idle mode. Lee at [10] It is yet another object of the present invention to provide a system and a method for providing an integrated push service wherein an integrated push service server transmits a push service as an SMS via a mobile communication service network instead of a mobile internet network when a receiving mobile terminal is not connected to the mobile internet network to provide the push information in real time

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	even when the mobile terminal of a user is in a shadow area of a mobile internet service. Lee at [11] In order to achieve above-described object, there is provided an integrated push service system comprising: a plurality of push application servers for providing a push information, the push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data, and an associated application ID specifying the application for invoking the push data; an integrated push service server for receiving the push information and providing the push information to the mobile terminal receiving the push data through an IP push; a mobile internet service network including a plurality of RASs to carry out a communication between the push service server and the mobile terminal receiving the push data; and the mobile terminal for receiving the push information through a mobile internet modem for connecting to the mobile internet service network, the mobile terminal comprising at least one application for associating with the push information, wherein the mobile terminal further comprises a communication session manager resident in a memory thereof, the communication session manager maintaining a communication session with the integrated push service server when the mobile internet modem is connected to the mobile internet service network, and an integrated push service agent for selectively invoking the application compliant to the associated application ID of the received push information to deliver the push data. Lee at [12] There is also provided a method for providing an integrated push service comprising steps of: (a) transmitting a push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information

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	specifying the mobile terminal receiving the push data and an associated application ID specifying the application for invoking the push data to an integrated push service server through a communication network; (b) transmitting the push information to the receiving mobile terminal via an IP push through a mobile internet service network using the integrated push service server; and (c) receiving the push information using an integrated push service agent resident in a memory of the mobile terminal, and invoking the application compliant to the associated application ID to deliver the push data. Lee at [13] In accordance with the system and the method for providing the integrated push service of the present invention, the various push data generated from the plurality of push application servers are transmitted through the integrated push service server and the mobile terminal extracts the associated application ID app ID and loads the integrated push service agent selectively invoking the corresponding application to provide the various push services through the mobile internet network, the separate module for the transmission of the push data is not required for the push service server to reduce the cost for building the push service server, and only the single integrated push service agent is loaded in the memory of the mobile terminal to optimize the system resource of the mobile terminal. Lee at [14] In accordance with the system and the method for providing the integrated push service of the present invention, the integrated push service server determines whether the receiving mobile terminal is in the idle mode and the push information is broadcasted via the paging controller provided by the mobile internet service network when the mobile terminal is in the idle mode to provide the push information

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	in real time even to the mobile terminal having the communication session with the integrated push service server terminated in the idle mode. Lee at [15] In accordance with the system and the method for providing the integrated push service wherein the integrated push service server transmits the push service as the SMS via the mobile communication service network instead of the mobile internet network when the receiving mobile terminal is not connected to the mobile internet network to provide the push information in real time even when the mobile terminal of the user is in the shadow area of the mobile internet service. Lee at [22] Fig. 1 is a diagram illustrating a configuration of an integrated push service system in accordance with an embodiment of the present invention. Referring to Fig. 1, the integrated push service system comprises a plurality of push application servers 10, 12 and 14, an integrated push service server 100, a mobile internet service network 300, and a mobile terminal 200 including an integrated push service agent 250. The plurality of push application servers 10, 12 and 14 provides a push data to a push service application stored in the mobile terminal 200. The plurality of push application servers 10, 12 and 14 generate the push data push data such as a real time news data for a news application, a chatting message for a peer-to-peer messenger application and an e-mail message for an e-mail application. A push information push info including a receiving mobile terminal information specifying the mobile terminal that receives the push data, and an associated application ID app ID specifying the application for invoking the push data along with the push data is also generated.

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[Fig. 1]

Lee at [23]

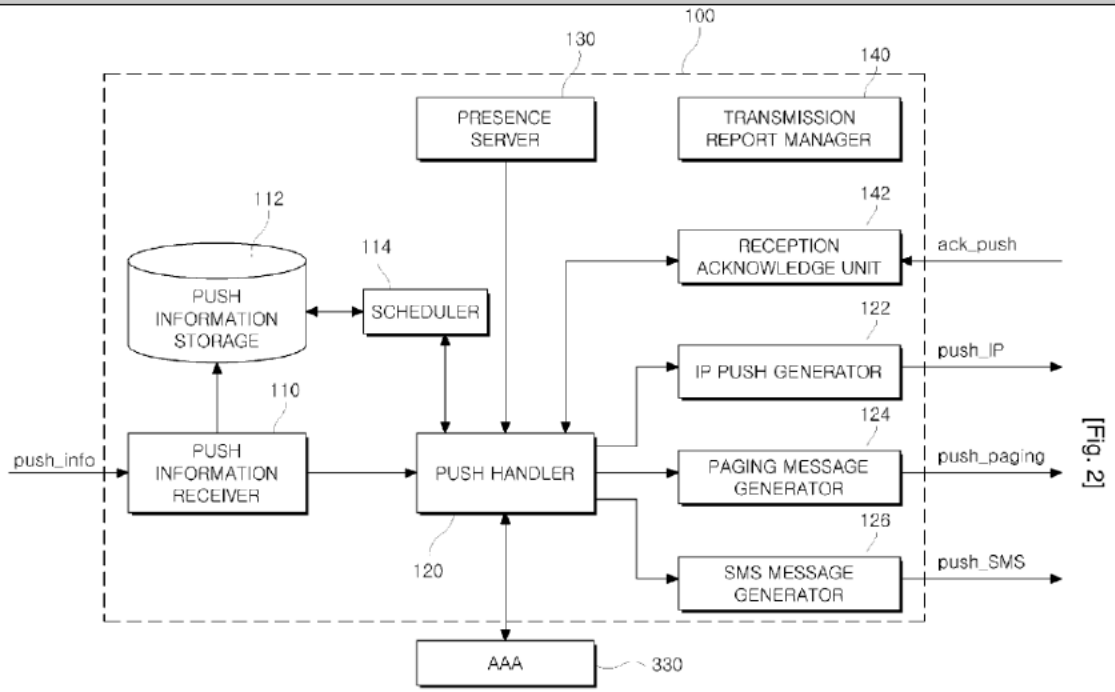
> In accordance with a conventional push application server, the associated application ID app ID is not required because the conventional push application server is built for a single push application and a communication session and a protocol are maintained for each of the servers. However, in accordance with the present invention, various push services provided to each of applications are managed in an integrated fashion through the integrated push service server 100 and the integrated

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	push service agent 250. Therefore, the associated application ID app_ID specifying the application for invoking the push data is required. Lee at [25] The integrated push service server 100 receives the push information push info from the plurality of push application servers 10, 12 and 14 connected through a communication network, and provides the push information push info to the mobile terminal 200 through an IP push push IP. Because the mobile terminal 200 maintains a communication session with the integrated push service server 100 through a CSM (Communication Session Manager) 251 of the integrated push service agent 250, the push information push info including the push data may be transmitted through the IP push push IP. When the push information push info is transmitted through the IP push push IP, the integrated push service server 100 requests the IP push to the mobile internet service network 300. Lee at [26] The mobile terminal 200 transmits a push information acknowledge message ack push to the integrated push service server 100 when the push information push info is received, the integrated push service server 100 acknowledges a successful transmission of the push data by receiving the push information acknowledge message ack push at a reception acknowledge unit 142. A transmission report manager 140 transmits an information on the reception and a push application service to each of the plurality of push application servers 10, 12 and 14 as a transmission report. Lee at [27]

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	The mobile internet service network 300 is a high speed wireless internet service such as Wibro and HPi which carries out a communication between the integrated push service server 100 and the mobile terminal 200, transmission/reception of the IP push data push_IP. Lee at [28] The mobile terminal 200 receives the push information push info in a form of the IP push push IP through a mobile internet modem 210 for connecting to the mobile Internet service network 300, and includes at least one application 260 that is to be associated with the push information push info. Particularly, the mobile terminal 200 includes the integrated push service agent 250. The integrated push service agent 250 includes the CSM 251 resident on a memory of the mobile terminal 200 that maintains the communication session with the integrated push service server 100 in a state that the mobile internet modem 210 is connected to the mobile internet service network 300, and selectively invokes the application 260 compliant to the associated application ID app_ID of the push information push_info to deliver the push data.

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[Fig. 2]

Lee at [34]

In accordance with the embodiment of the present invention, a push service may be provided continuously for the mobile terminal 200 in the idle mode by transmitting the push information through the paging message. When the mobile terminal 200 enters the idle mode, the CSM 251 of the integrated push service agent 250 of the mobile terminal 200 cannot send the push information push info through the IP push push IP because the communication session with the integrated push service server 100 is terminated. While the integrated push service server 100 may schedule and transmit the push information push info or re-transmit the push information

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	push info by recognizing a communication configuration of the mobile terminal 200, the push service cannot be provided in real time. Lee at [36] There are two methods for the mobile terminal 200 to recognize the idle mode of the mobile terminal 200. In accordance with a first method, whether the mobile terminal 200 is in the idle mode is registered in a presence server 130 such that the integrated push service server 100 may inquire the presence server 130 of whether the mobile terminal 200 is in the idle mode prior to transmitting the push information push info. In accordance with a second method, the integrated push service server 100 transmits the push information push info by the IP push push IP and determines that the mobile terminal 200 is in the idle mode when the push information acknowledge message ack_push is not received from the mobile terminal 200. Lee at [37] While a configuration of the integrated push service server 100 is complex due to an association with the presence server 130, an unnecessary IP push is omitted to enable an efficient use of a network resource in accordance with the first method. While an unnecessary traffic is generated due to the IP push push IP, the integrated push service server 100 does not require the association with the presence server 130, thereby simplifying a system configuration in accordance with the second method. Lee at [39] In accordance with first method, the integrated push service server 100 or the mobile internet service network 300 further includes the presence server 130 that determines whether the mobile terminal 200 is in the idle mode, and also further comprises the paging controller 340 for broadcasting the paging message for the mobile terminal

'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
	200 through the at least one RASs 320 and 322. The integrated push service server 100 provides the push information push info to the paging controller 340 when the mobile terminal 200 is determined to be in the idle mode using the presence server 130, and the integrated push service agent further comprises a paging message parser 253 for parsing the push information push info when the push information push_info is received as the paging message push_paging. Lee at [40] In accordance with first method, the integrated push service server 100 inquires the presence server 130 of whether the mobile terminal 200 is in the idle mode and transmits the push information push info as the paging message push paging through the paging controller 340 instead of the IP push push IP in the idle mode. The mobile terminal 200 extracts the push data push data and the associated application ID app ID form the paging message push paging through the paging message parser 253 as the paging message push paging is received. The corresponding application 260 is then invoked to provide various push services between the plurality of push application servers 10, 12 and 14 and the mobile terminal 200. Lee at [42] In accordance with second method, the integrated push service agent 250 further comprises a reception acknowledge report manager 256 for generating the push information acknowledge message ack push, and the mobile internet service network 300 further comprises the paging controller 340 for broadcasting the paging message for the mobile terminal 200 through the at least one RASs 320 and 322. The integrated push service server 100 provides the push information push info to the paging controller 340 when the push information acknowledge message ack push is not received from the reception acknowledge report manager 256, and the mobile

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	terminal 200 is configured to further include the paging message parser 253 for parsing for parsing the push information push info when the push information push_info is received as the paging message push_paging. Lee at [43] In accordance with second method, the integrated push service server 100 transmits the push information push info via the IP push push IP and determines that the mobile terminal 200 is in the idle mode when the push information acknowledge message ack push is not received. The mobile terminal 200 extracts the push data push data and the associated application ID app ID from the paging message push paging through the paging message parser 253 as the paging message push paging is received. The corresponding application 260 is then invoked to provide various push services between the plurality of push application servers 10, 12 and 14 and the mobile terminal 200. Lee at [44] In accordance with the embodiment wherein the push information push info is transmitted through the paging message push paging, it preferable that the CSM 251 of the integrated push service agent 250 of the mobile terminal 200 controls the mobile internet modem 210 to configure the communication session between the integrated push service server 100 and the integrated push service agent 250. In case that the push data push data is too large to be transmitted efficiently by only the paging message push paging or that other data is to be transmitted after the transmission of the push information push info, the mobile terminal 200 automatically exits the idle mode to configure the communication session with the integrated push service server 100 when the push information push info is received as the paging message push_paging, thereby efficiently providing the push service.

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	Lee at [48] When the mobile terminal 200 is unable to establish the communication with the mobile communication service network 400, the push data push data cannot be transmitted via the IP push push IP or the paging message push paging even when a new push data push_data is generated in a push application server 10. Lee at [49] In such case, the integrated push service agent 250 connects to the paging controller 340 and informs the integrated push service server 100 of the mobile terminal 200 entering the network once connected to the mobile internet service network 300. the integrated push service server 100 searches whether the push information push info that is not transmitted to the mobile terminal 200 exists to transmit the push information push info as the IP push push IP or the paging message push paging. However, the push service is not provided in real time even in accordance with the embodiment. Lee at [50] In order to solve above-described problem, the integrated push service system further comprises the mobile communication service network 400 including a plurality of base stations and a SMSC, the mobile terminal 200 further comprises the mobile communication modem 220 for connecting to the mobile communication service network 400, the integrated push service server 100 transmits the push information push info to the SMSC of the mobile communication service network 400 when the mobile terminal 200 is determined to be disconnected from the mobile internet service network, and the integrated push service agent 250 further comprises an SMS parser 254 for parsing the push information push info when the push information

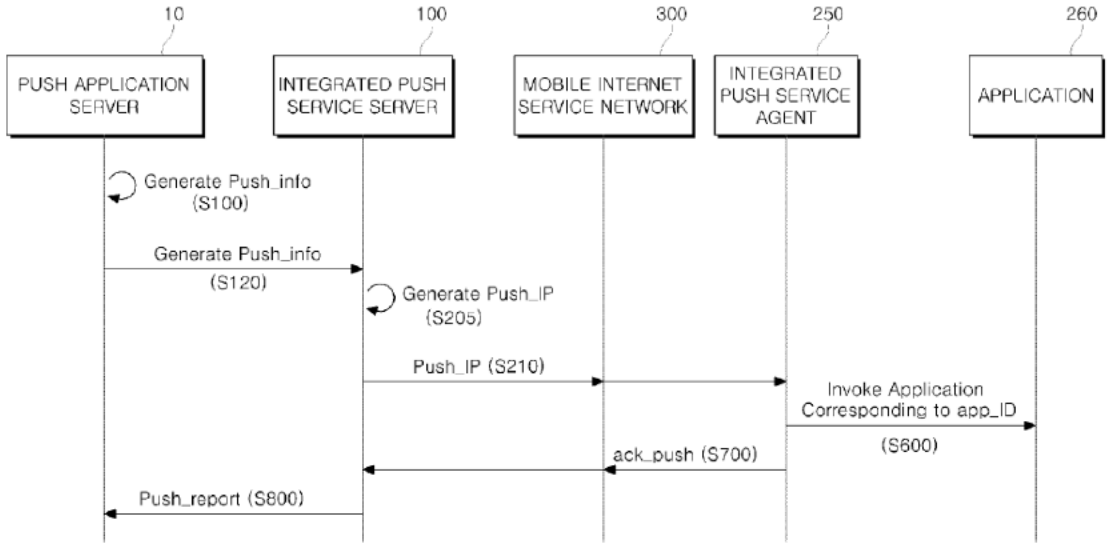
'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
	push info is received via an SMS push_SMS through the mobile communication modem 250. Lee at [54] Figs. 6 through 8 are diagrams illustrating a communication system of a method for providing an integrated push service in accordance with an embodiment of the present invention. Lee at [55] First steps (Sl00 and S 120) are carried out wherein a push information push info including a push data push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data push data and an associated application ID app ID specifying the a pplication for invoking the push data push data is transmitted to an integrated push service server through a communication network. Lee at [56] Thereafter, second steps S200 and S210 are carried out wherein a integrated push service server 100 transmits the push information push info to the receiving mobile terminal 200 via an IP push through a mobile internet service network 300. Lee at [57] Thereafter, third steps S500 and S600 are carried out wherein an integrated push service agent 250 resident in a memory of the mobile terminal 200 receives the push information push info (S500) and invokes an application 260 compliant to the associated application ID app ID to deliver the push data push data.

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Lee at [58]

The embodiment is described in detail wherein the push information push info is transmitted as a paging message push message in order to provide the integrated push service even when the mobile terminal 200 is in an idle mode.



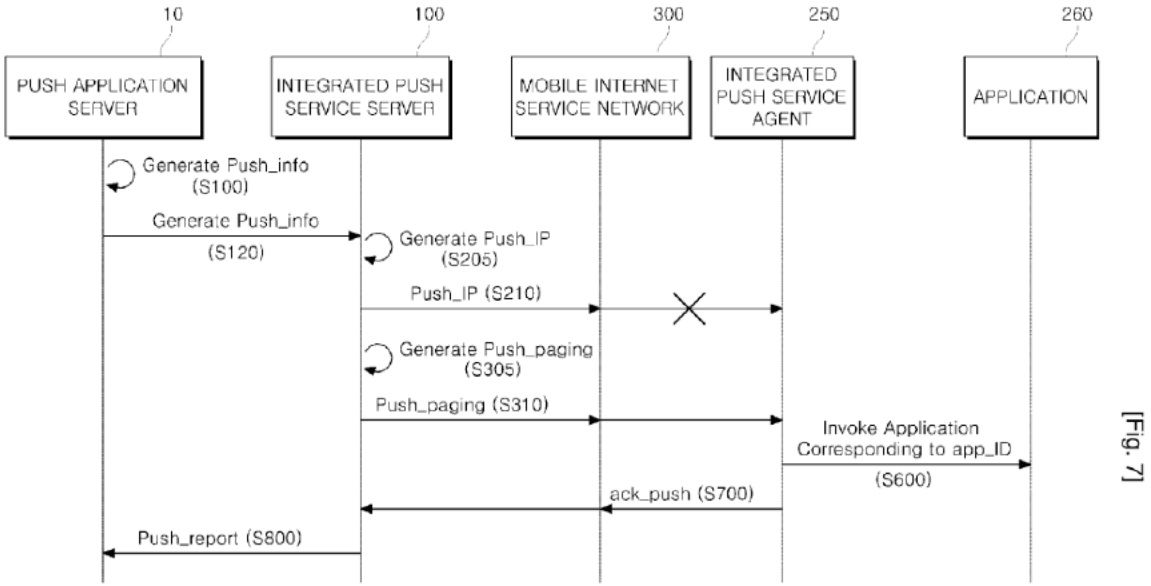
[Fig. 6]

Lee at [59]

First, the method for providing the integrated push service further comprises a fourth step wherein a presence server 130 detects the idle mode of the mobile terminal 200 prior to the first steps Sl00 and S 120, the second steps S200 and S210 further

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	comprises a first sub-step S305 wherein the push information push info is requested to a paging controller 340 of the mobile internet service network 300 to be transmitted as the paging message push paging when the mobile terminal 200 is determined to be in the idle mode, and a second sub-step S310 wherein the paging controller 340 broadcasts the push information push info as the paging message push paging through at least one RASs 320 and 211, and the third step S600 may be configured in a manner that the integrated push service agent 250 parses the paging message push_paging to extract the push information push_info. Lee at [60] In accordance with the embodiment shown in Fig. 7 wherein the presence server 130 is not used, the third step further comprises a third sub-step (S700) wherein the integrated push service agent 250 transmits a reception acknowledge message ack push to the integrated push service server according to the reception of the push information push info, the second steps S200 and S210 further comprises a first sub-step S305 of requesting a paging controller of the mobile internet service network to transmit the push information push info as the paging message push paging when the reception acknowledge message is not received and a fifth sub-step S310 wherein the paging controller 340 broadcasts the push information push info as the paging message push paging through at least one RASs 320 and 322, and the third step S600 may be configured to in a manner that the integrated push service agent 250 parses the paging message push_paging to extract the push information push_info. Lee at [61] After carrying out the third step S600, the integrated push service agent 250 may further establish a communication session with the integrated push service server according to the reception of the push information push_info.

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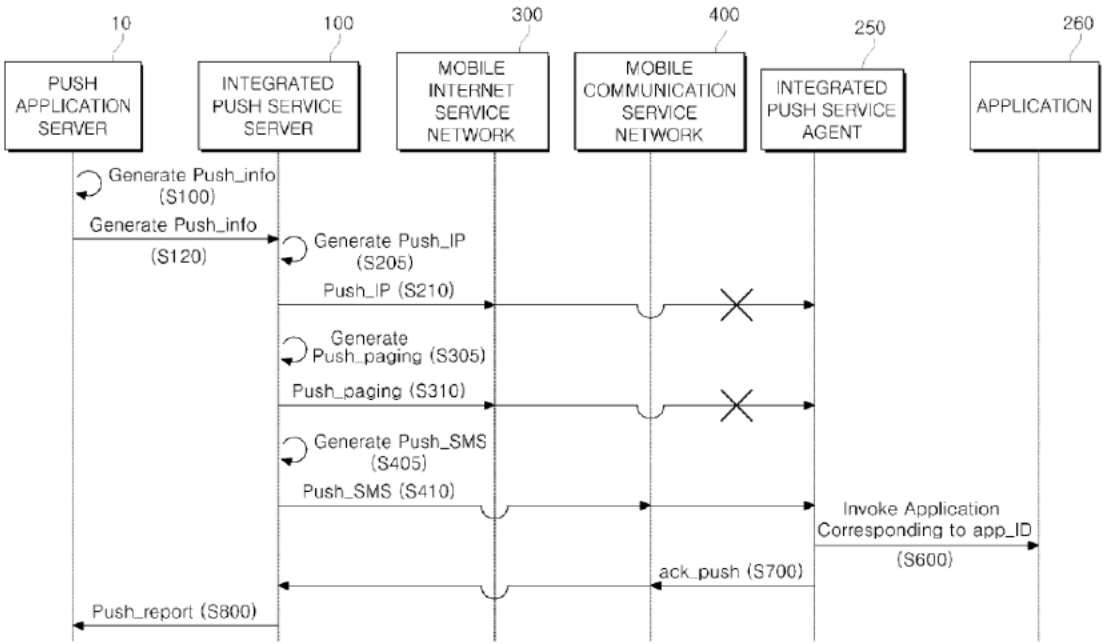


[Fig. 7]

Lee at [62]

> Finally, an embodiment of the method for providing the integrated push service using the SMS wherein the mobile terminal 200 is a DBDM terminal that may connect to the mobile internet service network 300 and the mobile communication service network 400 and the mobile terminal 200 is not connected to the mobile internet service network 300 to provide the integrated push service in real time is described below in detail.

Lee at [63]

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	As shown in Fig. 8, the second steps S200 and S210 comprises a sixth sub-step wherein the push information push info is transmitted to an SMSC of the mobile communication service network 400 when the mobile terminal 200 is determined to be disconnected from the mobile internet service network 300 and a seventh sub-step wherein the SMSC transmits the push information push info to the receiving mobile terminal 200 as the SMS push SMS, and the third steps S500 and S600 further comprises an eighth sub-step wherein the integrated push service agent 250 parses the received SMS push_SMS to extract the push information push_info.  [Fig. 8] Lee at Claims

'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
	[1] An integrated push service system comprising: a plurality of push application servers for providing a push information, the push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data, and an associated application ID specifying the application for invoking the push data; an integrated push service server for receiving the push information and providing the push information to the mobile terminal receiving the push data through an IP push; a mobile internet service network including a plurality of RASs to carry out a communication between the push service server and the mobile terminal receiving the push data; and the mobile terminal for receiving the push information through a mobile internet modem for connecting to the mobile internet service network, the mobile terminal comprising at least one application for associating with the push information, wherein the mobile terminal further comprises a communication session manager resident in a memory thereof, the communication session manager maintaining a communication session with the integrated push service server when the mobile internet modem is connected to the mobile internet service network, and an integrated push service agent for selectively invoking the application compliant to the associated application ID of the received push information to deliver the push data. [2] The system in accordance with claim 1, wherein the integrated push service server or the mobile internet service network further comprises a presence server for detecting an idle mode of the mobile terminal, wherein the mobile internet service network further comprises a paging controller for broadcasting a paging message for the mobile terminal through the at least one RAS,

'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
	wherein the integrated push service server provides the push information to the paging controller when the mobile terminal is determined to be in the idle mode through the presence server, and wherein the integrated push service agent further comprises a paging message parser for parsing the push information when the push information is received as the paging message. [3] The system in accordance with claim 1, wherein the integrated push service agent further comprises a reception acknowledge report manager for generating a push information reception acknowledge message according to the reception of the push information, wherein the mobile internet service network further comprises a paging controller for broadcasting a paging message for the mobile terminal through the at least one RAS, wherein the integrated push service server provides the push information to the paging controller when the push information reception acknowledge message is not received from the reception acknowledge report manager after transmitting the push message via an IP push, and wherein the mobile terminal further comprises a paging message parser for parsing the push information when the push information is received as the paging message. [4] The system in accordance with one of claims 2 and 3, wherein the communication session manager establishes a communication session between the integrated push service server and the integrated push service agent by controlling the mobile internet modem when the push information is received as the paging message. [5] The system in accordance with one of claims 2 and 3, wherein the integrated push service server stores the push information when the mobile terminal is not

'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
	connected to the mobile internet service network and transmits the stored push information when the mobile terminal is connected to the mobile internet service network. [6] The system in accordance with claim 5, wherein the integrated push service agent informs the integrated push service server of an entrance to the mobile internet service network via the paging message by connecting to the paging controller when connected to the mobile internet service network. [7] The system in accordance with one of claims 1 through 3, further comprising a mobile communication service network including a plurality of base stations and a SMSC, wherein the mobile terminal further comprises a mobile communication modem for connecting to the mobile communication service network, wherein the integrated push service server transmits the push information to the SMSC of the mobile communication service network when the mobile terminal is determined to be disconnected from the mobile internet service network, and wherein the integrated push service agent further comprises an SMS parser for parsing the push information when the push information is received via an SMS through the mobile communication modem. [8] The system in accordance with claim 7, wherein the integrated push service agent the integrated push service agent further comprises a mobile communication service interface for controlling the mobile communication modem to connect to a data network provided by the mobile communication service network, and controls the mobile communication modem to connect to the data network of the mobile communication service network when the associated application ID of the received push information designates the application associated with the data network of the mobile communication service network.

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	[9] The system in accordance with one of claims 1 through 3, wherein the integrated push service server further comprises a transmission report manager for generating a transmission report including a result of a push information transmission, and transmits the result of the push information transmission to the push application server providing the push information. [10] A method for providing an integrated push service comprising steps of: (a) transmitting a push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data and an associated application ID specifying the application for invoking the push data to an integrated push service server through a communication network; (b) transmitting the push information to the receiving mobile terminal via an IP push through a mobile internet service network using the integrated push service server; and (c) receiving the push information using an integrated push service agent resident in a memory of the mobile terminal, and invoking the application compliant to the associated application ID to deliver the push data. [11] The method in accordance with claim 10, further comprising (d) detecting an idle mode of the mobile terminal by a presence server prior to the step (a), wherein the step (b) further comprises: (a-1) requesting the push information as a paging message using a paging controller of the mobile internet service network when the mobile terminal is determined to be in the idle mode; and (a-2) broadcasting the push information as the paging message through at least one RAS using the paging controller, and wherein the step (c) comprises extracting the push information by parsing the paging message using the integrated push service agent.

'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
	[12] The method in accordance with claim 10, wherein the step (c) further comprises (c-1) transmitting a reception acknowledge message to the integrated push service server according to the reception of the push information using the integrated push service agent, wherein the step (b) further comprises: (b-1) requesting a paging controller of the mobile internet service network to transmit the push information as the paging message when the reception acknowledge message is not received; and (b-2) broadcasting the push information as the paging message through at least one RAS using the paging controller, and wherein the step (c) extracting the push information by parsing the paging message using the integrated push service agent. [13] The method in accordance with one of claims 11 and 12, wherein further comprising (e) establishing a communication session between the integrated push service server and the integrated push service agent according to the reception of the push information after carrying out the step (c). [14] The method in accordance with one of claims 11 and 12, wherein the step (b) comprises storing the push information when the mobile terminal is not connected to the mobile internet service network, and re-transmitting the stored push information when the mobile terminal is connected to the mobile internet service network. [15] The method in accordance with one of claims 11 and 12, wherein the step (b) comprises: (b-3) transmitting the push information to a SMSC of the mobile internet service network when the mobile terminal is determined to be disconnected from the mobile internet service network; and (b-4) transmitting the push information to the receiving mobile terminal as an

'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
	SMS by the SMCC, and wherein the step (c) further comprises (c-2) extracting the push information by parsing the SMS by the integrated push service agent.
[1a] a plurality of device messaging agents, each executable on a respective one of a plurality of mobile end-user devices configured to exchange Internet data via a data connection to a wireless network; and	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre]. Lee at Abstract The present invention relates to a system and a method for providing an integrated push service in an internet service network, and the integrated push service system comprises a plurality of push application servers for providing a push information, the push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data, and an associated application ID specifying the application for invoking the push data; an integrated push service server for receiving the push information and providing the push information to the mobile terminal receiving the push data through an IP push; a mobile internet service network including a plurality of RASs to carry out a communication between the push service server and the mobile terminal receiving the push data; and the mobile terminal for receiving the push information through a mobile internet modem for connecting to the mobile internet service network, the mobile terminal comprising at least one application for associating with the push information, wherein the mobile terminal further comprises a communication session manager resident in a memory thereof, the communication session manager maintaining a communication session with the integrated push service server when the mobile internet modem is connected to the mobile internet service network, and an integrated push service agent for selectively

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	invoking the ap¬ plication compliant to the associated application ID of the received push information to deliver the push data. Lee at [8] It is an object of the present invention to provide a system and a method for providing an integrated push service wherein various push data generated from a plurality of push application servers are transmitted through an integrated push service server and a mobile terminal extracts an associated application ID app ID and loads an integrated push service agent selectively invoking a corresponding application to provide the various push services through a mobile internet network, and wherein a separate module for a transmission of the push data is not required for the push service server to reduce a cost for building the push service server, and wherein only a single integrated push service agent is loaded in a memory of the mobile terminal to optimize a system resource of the mobile terminal.
[1b] a network message server supporting a plurality of secure Internet data connections, each secure Internet data connection between the network message server and a respective one of the mobile end-user devices via a device data connection to a wireless network,	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1a]. Lee at Abstract The present invention relates to a system and a method for providing an integrated push service in an internet service network, and the integrated push service system comprises a plurality of push application servers for providing a push information, the push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data, and an associated application ID specifying the application for invoking the push data; an integrated push service server for receiving

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	the push information and providing the push information to the mobile terminal receiving the push data through an IP push; a mobile internet service network including a plurality of RASs to carry out a communication between the push service server and the mobile terminal receiving the push data; and the mobile terminal for receiving the push information through a mobile internet modem for connecting to the mobile internet service network, the mobile terminal comprising at least one application for associating with the push information, wherein the mobile terminal further comprises a communication session manager resident in a memory thereof, the communication session manager maintaining a communication session with the integrated push service server when the mobile internet modem is connected to the mobile internet service network, and an integrated push service agent for selectively invoking the ap¬ plication compliant to the associated application ID of the received push information to deliver the push data. Lee at [8] It is an object of the present invention to provide a system and a method for providing an integrated push service wherein various push data generated from a plurality of push application servers are transmitted through an integrated push service server and a mobile terminal extracts an associated application ID app ID and loads an integrated push service agent selectively invoking a corresponding application to provide the various push services through a mobile internet network, and wherein a separate module for a transmission of the push data is not required for the push service server to reduce a cost for building the push service server, and wherein only a single integrated push service agent is loaded in a memory of the mobile terminal to optimize a system resource of the mobile terminal. Lee at [9]

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	It is another object of the present invention to provide a system and a method for providing an integrated push service wherein an integrated push service server determines whether a receiving mobile terminal is in an idle mode and a push information is broadcasted via a paging controller provided by a mobile internet service network when the mobile terminal is in the idle mode to provide the push information in real time even to the mobile terminal having a communication session with the integrated push service server terminated in the idle mode. Lee at [10] It is yet another object of the present invention to provide a system and a method for providing an integrated push service wherein an integrated push service server transmits a push service as an SMS via a mobile communication service network instead of a mobile internet network when a receiving mobile terminal is not connected to the mobile internet network to provide the push information in real time even when the mobile terminal of a user is in a shadow area of a mobile internet service. Lee at [11] In order to achieve above-described object, there is provided an integrated push service system comprising: a plurality of push application servers for providing a push information, the push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data, and an associated application ID specifying the application for invoking the push data; an integrated push service server for receiving the push information and providing the push information to the mobile terminal receiving the push data through an IP push; a mobile internet service network including a plurality of RASs to carry out a communication between the push service server and the mobile terminal receiving the push data; and the mobile

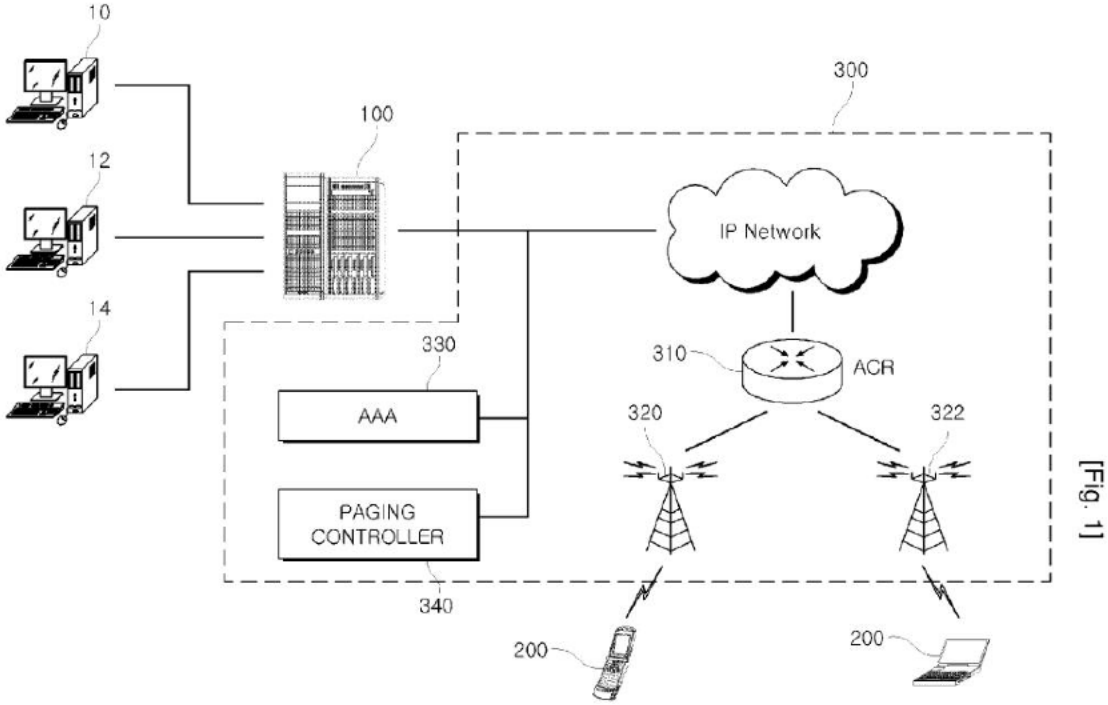
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	terminal for receiving the push information through a mobile internet modem for connecting to the mobile internet service network, the mobile terminal comprising at least one application for associating with the push information, wherein the mobile terminal further comprises a communication session manager resident in a memory thereof, the communication session manager maintaining a communication session with the integrated push service server when the mobile internet modem is connected to the mobile internet service network, and an integrated push service agent for selectively invoking the application compliant to the associated application ID of the received push information to deliver the push data. Lee at [12] There is also provided a method for providing an integrated push service comprising steps of: (a) transmitting a push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data and an associated application ID specifying the application for invoking the push data to an integrated push service server through a communication network; (b) transmitting the push information to the receiving mobile terminal via an IP push through a mobile internet service network using the integrated push service server; and (c) receiving the push information using an integrated push service agent resident in a memory of the mobile terminal, and invoking the application compliant to the associated application ID to deliver the push data. Lee at [13] In accordance with the system and the method for providing the integrated push service of the present invention, the various push data generated from the plurality of push application servers are transmitted through the integrated push service server and the mobile terminal extracts the associated application ID app ID and loads the

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	integrated push service agent selectively invoking the corresponding application to provide the various push services through the mobile internet network, the separate module for the transmission of the push data is not required for the push service server to reduce the cost for building the push service server, and only the single integrated push service agent is loaded in the memory of the mobile terminal to optimize the system resource of the mobile terminal. Lee at [14] In accordance with the system and the method for providing the integrated push service of the present invention, the integrated push service server determines whether the receiving mobile terminal is in the idle mode and the push information is broadcasted via the paging controller provided by the mobile internet service network when the mobile terminal is in the idle mode to provide the push information in real time even to the mobile terminal having the communication session with the integrated push service server terminated in the idle mode. Lee at [15] In accordance with the system and the method for providing the integrated push service wherein the integrated push service server transmits the push service as the SMS via the mobile communication service network instead of the mobile internet network when the receiving mobile terminal is not connected to the mobile internet network to provide the push information in real time even when the mobile terminal of the user is in the shadow area of the mobile internet service. Lee at [22] Fig. 1 is a diagram illustrating a configuration of an integrated push service system in accordance with an embodiment of the present invention. Referring to Fig. 1, the

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	integrated push service system comprises a plurality of push application servers 10, 12 and 14, an integrated push service server 100, a mobile internet service network 300, and a mobile terminal 200 including an integrated push service agent 250. The plurality of push application servers 10, 12 and 14 provides a push data to a push service application stored in the mobile terminal 200. The plurality of push application servers 10, 12 and 14 generate the push data push data such as a real time news data for a news application, a chatting message for a peer-to-peer messenger application and an e-mail message for an e-mail application. A push information push info including a receiving mobile terminal information specifying the mobile terminal that receives the push data, and an associated application ID app ID specifying the application for invoking the push data along with the push data is also generated.

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[Fig. 1]

Lee at [25]

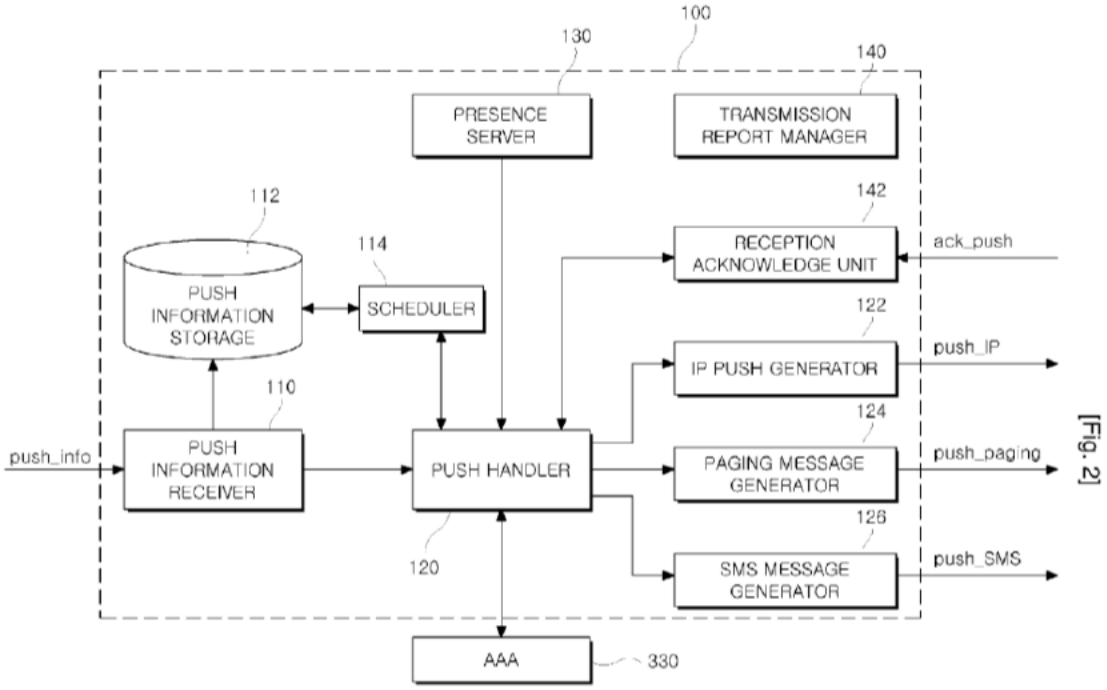
> The integrated push service server 100 receives the push information push info from the plurality of push application servers 10, 12 and 14 connected through a communication network, and provides the push information push info to the mobile terminal 200 through an IP push push_IP. Because the mobile terminal 200 maintains a communication session with the integrated push service server 100 through a CSM (Communication Session Manager) 251 of the integrated push

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	service agent 250, the push information push info including the push data may be transmitted through the IP push push IP. When the push information push info is transmitted through the IP push push IP, the integrated push service server 100 requests the IP push to the mobile internet service network 300. Lee at [26] The mobile terminal 200 transmits a push information acknowledge message ack push to the integrated push service server 100 when the push information push info is received, the integrated push service server 100 acknowledges a successful transmission of the push data by receiving the push information acknowledge message ack push at a reception acknowledge unit 142. A transmission report manager 140 transmits an information on the reception and a push application service to each of the plurality of push application servers 10, 12 and 14 as a transmission report. Lee at [27] The mobile internet service network 300 is a high speed wireless internet service such as Wibro and HPi which carries out a communication between the integrated push service server 100 and the mobile terminal 200, transmission/reception of the IP push data push_IP. Lee at [28] The mobile terminal 200 receives the push information push info in a form of the IP push push IP through a mobile internet modem 210 for connecting to the mobile Internet service network 300, and includes at least one application 260 that is to be associated with the push information push info. Particularly, the mobile terminal 200 includes the integrated push service agent 250. The integrated push service agent

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250 includes the CSM 251 resident on a memory of the mobile terminal 200 that maintains the communication session with the integrated push service server 100 in a state that the mobile internet modem 210 is connected to the mobile internet service network 300, and selectively invokes the application 260 compliant to the associated application ID app_ID of the push information push_info to deliver the push data.



[Fig. 2]

Lee at [29]

When an entirety of the applications 260 supporting a plurality of push services such as a chatting service, a mail service, a news service and a stock service in the mobile terminal 200 are resident in the memory in order to correspond to individual IP push

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	in accordance with conventional art, a system resources of the mobile terminal 200 may be overloaded to degrade a processing speed thereof and is wasted. However, as shown in Fig. 3, only the integrated push service agent 250 of the mobile terminal 200 is resident in the memory of the mobile terminal 200 with each of the applications 260 being inactive in accordance with the embodiment of the present invention while an IP push receiver 252 receives the push information push info for the entirety of the applications in an integrated fashion and uses the associated application ID app ID included in the push information push info to selectively invoke the application 260 corresponding to the associated application ID app ID, thereby reducing a number of the applications resident in the memory and a power consumption of the mobile terminal 200. Lee at [31] On the other hand, a mobile internet service generally supports a power saving mode in order to reduce power consumption in a mobile environment. The mobile terminal 200 typically updates to which RAS 320 of a plurality of RASs 320 and 322 through a constant communication and a hand-over with the RASs 320 and 322. However, an unnecessary power consumption occurs for the mobile terminal 200 that does not have a constant transmission/reception of a data in order to maintain the constant communication with the mobile internet service network 300 for the handover and a registration of the RAS. As a result, the unnecessary power consumption has a serious effect on a DBDM(dual-band dual-mode) terminal using both the mobile internet service network 300 and a mobile communication service network 400 such as a CDMA and a GSM or MBMM(multi-band multi-mode) terminal supporting three or more communication services. Lee at [32]

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	The power saving mode provided by the mobile internet service is to solve above-described problem. In the power saving mode, the mobile terminal 200 enters an idle mode wherein a connection to the RAS 320 is lost when an exchange of the data with a mobile internet network is not carried out for more than a predetermined time. The idle mode refers to a state that the transmission/reception of the data by the mobile terminal 200 is not carried out and the connection to the RAS 320 is lost to eliminate a generation of an unnecessary hand-over traffic between the mobile terminal 200 and the RASs 320 and 322, thereby minimizing the power consumption of the mobile terminal 200 and enabling an efficient use of the RASs 320 and 322. Lee at [33] When a packet to be transmitted to the mobile terminal 200 is generated in the idle mode, a paging controller 340 of the mobile internet service network 300 broadcasts a paging message through the RASs 320 and 322 of a paging group consisting of the plurality of RASs wherein the mobile terminal 200 expected to exist. Through this process, the mobile terminal 200 receives a downlink data packet to exit the idle mode and enter a normal more to re-connect to the mobile internet service network 300. Lee at [34] In accordance with the embodiment of the present invention, a push service may be provided continuously for the mobile terminal 200 in the idle mode by transmitting the push information through the paging message. When the mobile terminal 200 enters the idle mode, the CSM 251 of the integrated push service agent 250 of the mobile terminal 200 cannot send the push information push info through the IP push push IP because the communication session with the integrated push service server 100 is terminated. While the integrated push service server 100 may schedule and transmit the push information push info or re-transmit the push information push info

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	by recognizing a communication configuration of the mobile terminal 200, the push service cannot be provided in real time. Lee at [35] It is preferable that the push information push info is included in the paging message instead of the IP push push IP such that the push service is provided to the mobile terminal 200 in real time in order to solve above-described problem. Lee at [36] There are two methods for the mobile terminal 200 to recognize the idle mode of the mobile terminal 200. In accordance with a first method, whether the mobile terminal 200 is in the idle mode is registered in a presence server 130 such that the integrated push service server 100 may inquire the presence server 130 of whether the mobile terminal 200 is in the idle mode prior to transmitting the push information push info. In accordance with a second method, the integrated push service server 100 transmits the push information push info by the IP push push IP and determines that the mobile terminal 200 is in the idle mode when the push information acknowledge message ack_push is not received from the mobile terminal 200. Lee at [39] In accordance with first method, the integrated push service server 100 or the mobile internet service network 300 further includes the presence server 130 that determines whether the mobile terminal 200 is in the idle mode, and also further comprises the paging controller 340 for broadcasting the paging message for the mobile terminal 200 through the at least one RASs 320 and 322. The integrated push service server 100 provides the push information push info to the paging controller 340 when the mobile terminal 200 is determined to be in the idle mode using the presence server

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	130, and the integrated push service agent further comprises a paging message parser 253 for parsing the push information push info when the push information push_info is received as the paging message push_paging. Lee at [40] In accordance with first method, the integrated push service server 100 inquires the presence server 130 of whether the mobile terminal 200 is in the idle mode and transmits the push information push info as the paging message push paging through the paging controller 340 instead of the IP push push IP in the idle mode. The mobile terminal 200 extracts the push data push data and the associated application ID app ID form the paging message push paging through the paging message parser 253 as the paging message push paging is received. The corresponding application 260 is then invoked to provide various push services between the plurality of push application servers 10, 12 and 14 and the mobile terminal 200. Lee at [42] In accordance with second method, the integrated push service agent 250 further comprises a reception acknowledge report manager 256 for generating the push information acknowledge message ack push, and the mobile internet service network 300 further comprises the paging controller 340 for broadcasting the paging message for the mobile terminal 200 through the at least one RASs 320 and 322. The integrated push service server 100 provides the push information push info to the paging controller 340 when the push information acknowledge message ack push is not received from the reception acknowledge report manager 256, and the mobile terminal 200 is configured to further include the paging message parser 253 for parsing for parsing the push information push info when the push information push info is received as the paging message push paging.

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	Lee at [43] In accordance with second method, the integrated push service server 100 transmits the push information push info via the IP push push IP and determines that the mobile terminal 200 is in the idle mode when the push information acknowledge message ack push is not received. The mobile terminal 200 extracts the push data push data and the associated application ID app ID from the paging message push paging through the paging message parser 253 as the paging message push paging is received. The corresponding application 260 is then invoked to provide various push services between the plurality of push application servers 10, 12 and 14 and the mobile terminal 200. Lee at [44] In accordance with the embodiment wherein the push information push info is transmitted through the paging message push paging, it preferable that the CSM 251 of the integrated push service agent 250 of the mobile terminal 200 controls the mobile internet modem 210 to configure the communication session between the integrated push service server 100 and the integrated push service agent 250. In case that the push data push data is too large to be transmitted efficiently by only the paging message push paging or that other data is to be transmitted after the transmission of the push information push info, the mobile terminal 200 automatically exits the idle mode to configure the communication session with the integrated push service server 100 when the push information push info is received as the paging message push_paging, thereby efficiently providing the push service. Lee at [46]

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	Since the mobile internet service is designed for a data communication, the mobile internet service is disadvantageous over the mobile communication service such as CDMA and GSM. Considering the disadvantage, a DBDM terminal or a MBMM terminal supporting both the mobile communication service and the mobile internet service is used. In such case, the mobile terminal 200 includes the mobile internet modem 210 and a mobile communication modem 220. Lee at [47] However, in accordance with embodiment, while the mobile internet modem 210 maintains the communication with the mobile communication service network 400 in order to receive an incoming call, a communication with the mobile internet service network 300 for the data communication is established selectively when required by a user. In addition, since the mobile internet service network 300 has a small service coverage compared to the mobile communication service network 400, the communication with the mobile communication service network 400 is frequently terminated when the mobile terminal 200 enters a shadow area. Lee at [48] When the mobile terminal 200 is unable to establish the communication with the mobile communication service network 400, the push data push data cannot be transmitted via the IP push push IP or the paging message push paging even when a new push data push_data is generated in a push application server 10. Lee at [49] In such case, the integrated push service agent 250 connects to the paging controller 340 and informs the integrated push service server 100 of the mobile terminal 200 entering the network once connected to the mobile internet service network 300. the

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	integrated push service server 100 searches whether the push information push_info that is not transmitted to the mobile terminal 200 exists to transmit the push information push_info as the IP push push_IP or the paging message push_paging. However, the push service is not provided in real time even in accordance with the embodiment. Lee at [50] In order to solve above-described problem, the integrated push service system further comprises the mobile communication service network 400 including a plurality of base stations and a SMSC, the mobile terminal 200 further comprises the mobile communication modem 220 for connecting to the mobile communication service network 400, the integrated push service server 100 transmits the push information push_info to the SMSC of the mobile communication service network 400 when the mobile terminal 200 is determined to be disconnected from the mobile internet service network, and the integrated push service agent 250 further comprises an SMS parser 254 for parsing the push information push_info when the push information push_info is received via an SMS push_SMS through the mobile communication modem 250. Lee at [51] In accordance with the embodiment, a real time push service is possible since the push information push_info may be transmitted via the SMS push_SMS even when the mobile terminal 200 is not connected to the mobile internet service network 300. Lee at [52] On the other hand, in a certain case, the push data push_data should be transmitted to the application 260 using a data service provided by the mobile communication

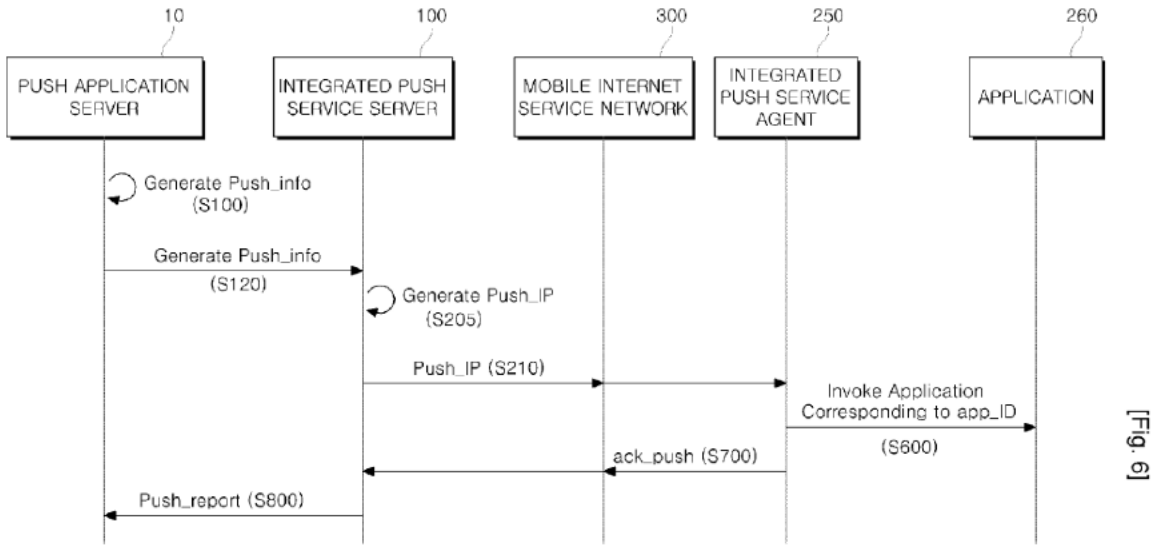
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	service network 400 such as WAP (wireless Application Protocol) instead of the application 260 using the mobile internet service network 300. Typically, a method wherein a connection to a data network of a corresponding mobile communication service via the SMS is used. In such case, the integrated push service agent 250 may be configured to further include a mobile communication service interface. The integrated push service agent 250 further comprises the mobile communication service interface for controlling the mobile communication modem 220 to connect to the data network provided by the mobile communication service network 400, and may be configured to control the mobile communication modem 220 to connect to the data network of the mobile communication service network when the associated application ID app ID of the received push information push info designates the application 260 associated with the data network of the mobile communication service network 400. Lee at [54] Figs. 6 through 8 are diagrams illustrating a communication system of a method for providing an integrated push service in accordance with an embodiment of the present invention. Lee at [55] First steps (Sl00 and S 120) are carried out wherein a push information push info including a push data push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data push data and an associated application ID app ID specifying the a pplication for invoking the push data push data is transmitted to an integrated push service server through a communication network. Lee at [56]

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	Thereafter, second steps S200 and S210 are carried out wherein a integrated push service server 100 transmits the push information push info to the receiving mobile terminal 200 via an IP push through a mobile internet service network 300. Lee at [57] Thereafter, third steps S500 and S600 are carried out wherein an integrated push service agent 250 resident in a memory of the mobile terminal 200 receives the push information push info (S500) and invokes an application 260 compliant to the associated application ID app_ID to deliver the push data push_data. Lee at [58] The embodiment is described in detail wherein the push information push info is transmitted as a paging message push message in order to provide the integrated push service even when the mobile terminal 200 is in an idle mode.

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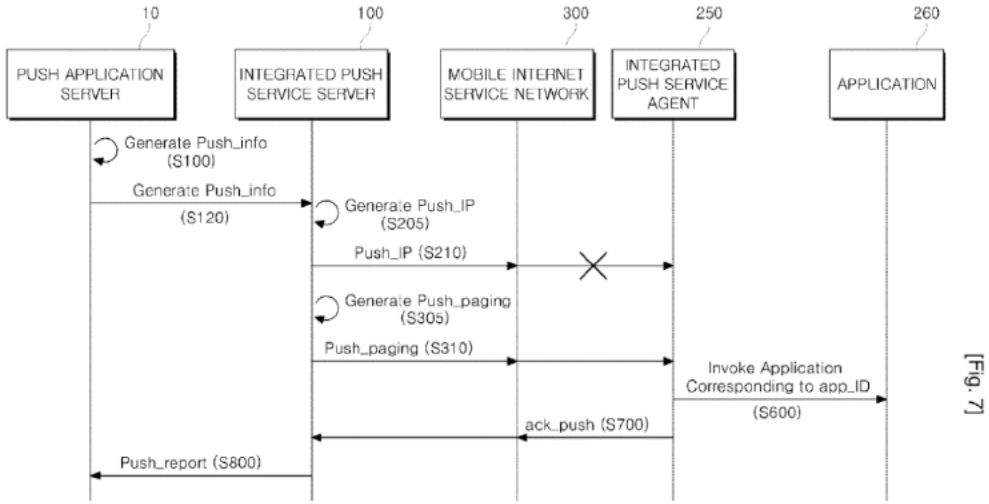
[Fig. 6]

Lee at [59]

First, the method for providing the integrated push service further comprises a fourth step wherein a presence server 130 detects the idle mode of the mobile terminal 200 prior to the first steps Sl00 and S 120, the second steps S200 and S210 further comprises a first sub-step S305 wherein the push information push info is requested to a paging controller 340 of the mobile internet service network 300 to be transmitted as the paging message push paging when the mobile terminal 200 is determined to be in the idle mode, and a second sub-step S310 wherein the paging controller 340 broadcasts the push information push info as the paging message push paging through at least one RASs 320 and 211, and the third step S600 may be

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	configured in a manner that the integrated push service agent 250 parses the paging message push_paging to extract the push information push_info. Lee at [60] In accordance with the embodiment shown in Fig. 7 wherein the presence server 130 is not used, the third step further comprises a third sub-step (S700) wherein the integrated push service agent 250 transmits a reception acknowledge message ack push to the integrated push service server according to the reception of the push information push info, the second steps S200 and S210 further comprises a first sub-step S305 of requesting a paging controller of the mobile internet service network to transmit the push information push info as the paging message push paging when the reception acknowledge message is not received and a fifth sub-step S310 wherein the paging controller 340 broadcasts the push information push info as the paging message push paging through at least one RASs 320 and 322, and the third step S600 may be configured to in a manner that the integrated push service agent 250 parses the paging message push_paging to extract the push information push_info. Lee at [61] After carrying out the third step S600, the integrated push service agent 250 may further establish a communication session with the integrated push service server according to the reception of the push information push_info.

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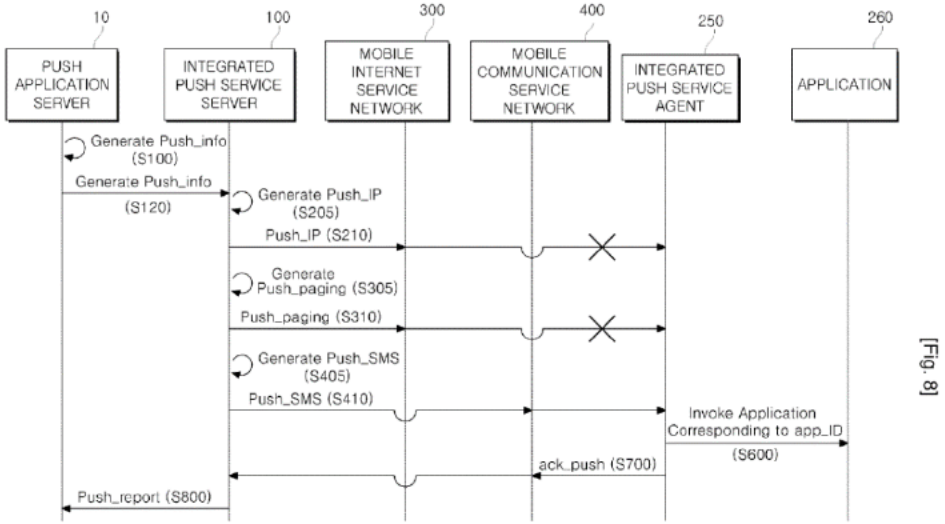
[Fig. 7]

Lee at [62]

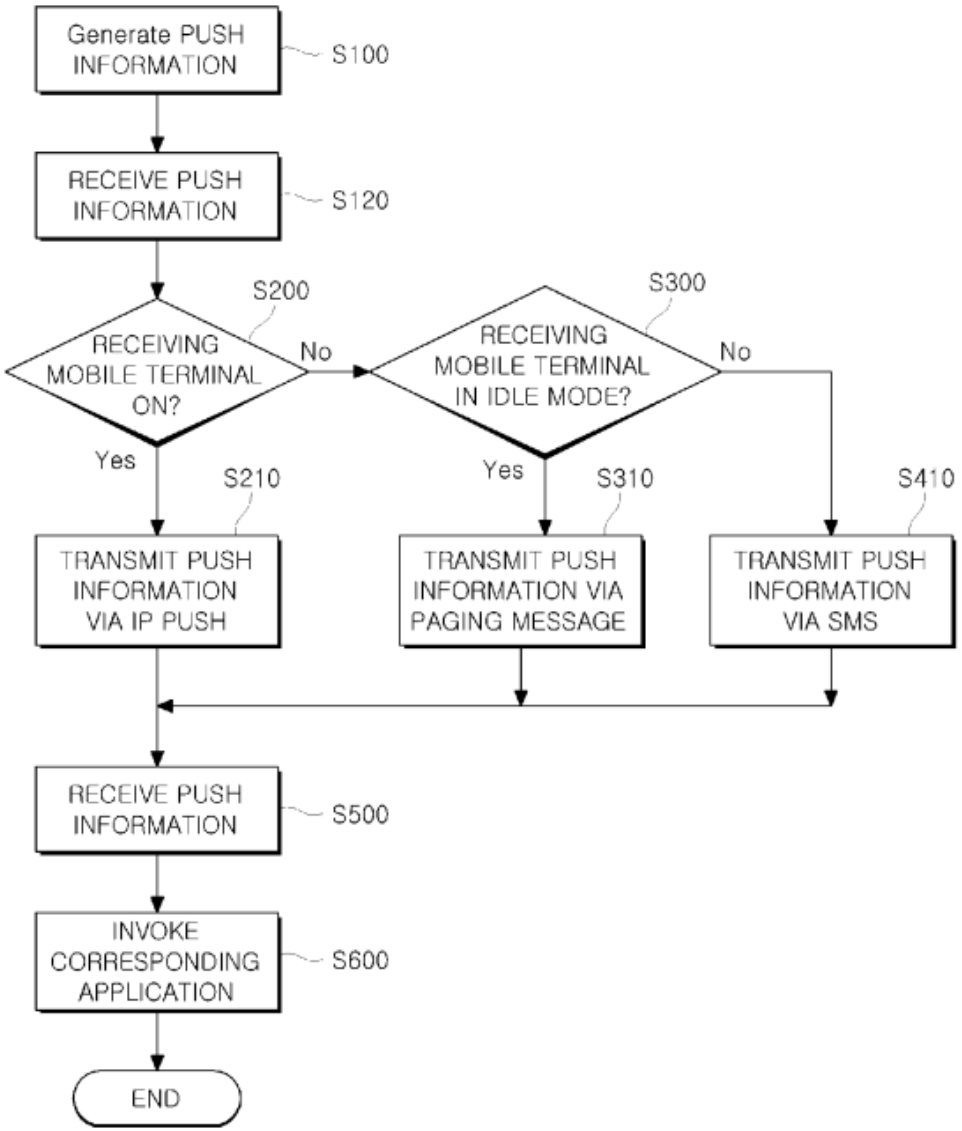
> Finally, an embodiment of the method for providing the integrated push service using the SMS wherein the mobile terminal 200 is a DBDM terminal that may connect to the mobile internet service network 300 and the mobile communication service network 400 and the mobile terminal 200 is not connected to the mobile internet service network 300 to provide the integrated push service in real time is described below in detail.

Lee at [63]

> As shown in Fig. 8, the second steps S200 and S210 comprises a sixth sub-step wherein the push information push info is transmitted to an SMSC of the mobile communication service network 400 when the mobile terminal 200 is determined to

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	be disconnected from the mobile internet service network 300 and a seventh sub-step wherein the SMSC transmits the push information push info to the receiving mobile terminal 200 as the SMS push SMS, and the third steps S500 and S600 further comprises an eighth sub-step wherein the integrated push service agent 250 parses the received SMS push_SMS to extract the push information push_info.  [Fig. 8]

[Fig. 5]


Generate PUSH INFORMATION
S100
RECEIVE PUSH INFORMATION
S120
S200
RECEIVING MOBILE TERMINAL ON?
No
S300
RECEIVING MOBILE TERMINAL IN IDLE MODE?
No
Yes
S210
TRANSMIT PUSH INFORMATION VIA IP PUSH
Yes
S310
TRANSMIT PUSH INFORMATION VIA PAGING MESSAGE
S410
TRANSMIT PUSH INFORMATION VIA SMS
RECEIVE PUSH INFORMATION
S500
INVOKE CORRESPONDING APPLICATION
S600
END

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	Lee at Claims [1] An integrated push service system comprising: a plurality of push application servers for providing a push information, the push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data, and an associated application ID specifying the application for invoking the push data; an integrated push service server for receiving the push information and providing the push information to the mobile terminal receiving the push data through an IP push; a mobile internet service network including a plurality of RASs to carry out a communication between the push service server and the mobile terminal receiving the push data; and the mobile terminal for receiving the push information through a mobile internet modem for connecting to the mobile internet service network, the mobile terminal comprising at least one application for associating with the push information, wherein the mobile terminal further comprises a communication session manager resident in a memory thereof, the communication session manager maintaining a communication session with the integrated push service server when the mobile internet modem is connected to the mobile internet service network, and an integrated push service agent for selectively invoking the application compliant to the associated application ID of the received push information to deliver the push data. [2] The system in accordance with claim 1, wherein the integrated push service server or the mobile internet service network further comprises a presence server for detecting an idle mode of the mobile terminal,

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	wherein the mobile internet service network further comprises a paging controller for broadcasting a paging message for the mobile terminal through the at least one RAS, wherein the integrated push service server provides the push information to the paging controller when the mobile terminal is determined to be in the idle mode through the presence server, and wherein the integrated push service agent further comprises a paging message parser for parsing the push information when the push information is received as the paging message. [3] The system in accordance with claim 1, wherein the integrated push service agent further comprises a reception acknowledge report manager for generating a push information reception acknowledge message according to the reception of the push information, wherein the mobile internet service network further comprises a paging controller for broadcasting a paging message for the mobile terminal through the at least one RAS, wherein the integrated push service server provides the push information to the paging controller when the push information reception acknowledge message is not received from the reception acknowledge report manager after transmitting the push message via an IP push, and wherein the mobile terminal further comprises a paging message parser for parsing the push information when the push information is received as the paging message. [4] The system in accordance with one of claims 2 and 3, wherein the communication session manager establishes a communication session between the integrated push service server and the integrated push service agent by controlling the mobile internet modem when the push information is received as the paging message.

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	[5] The system in accordance with one of claims 2 and 3, wherein the integrated push service server stores the push information when the mobile terminal is not connected to the mobile internet service network and transmits the stored push information when the mobile terminal is connected to the mobile internet service network. [6] The system in accordance with claim 5, wherein the integrated push service agent informs the integrated push service server of an entrance to the mobile internet service network via the paging message by connecting to the paging controller when connected to the mobile internet service network. [7] The system in accordance with one of claims 1 through 3, further comprising a mobile communication service network including a plurality of base stations and a SMSC, wherein the mobile terminal further comprises a mobile communication modem for connecting to the mobile communication service network, wherein the integrated push service server transmits the push information to the SMSC of the mobile communication service network when the mobile terminal is determined to be disconnected from the mobile internet service network, and wherein the integrated push service agent further comprises an SMS parser for parsing the push information when the push information is received via an SMS through the mobile communication modem. [8] The system in accordance with claim 7, wherein the integrated push service agent the integrated push service agent further comprises a mobile communication service interface for controlling the mobile communication modem to connect to a data network provided by the mobile communication service network, and controls the mobile communication modem to connect to the data network of the mobile communication service network when the associated application ID of the received

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	push information designates the application associated with the data network of the mobile communication service network. [9] The system in accordance with one of claims 1 through 3, wherein the integrated push service server further comprises a transmission report manager for generating a transmission report including a result of a push information transmission, and transmits the result of the push information transmission to the push application server providing the push information. [10] A method for providing an integrated push service comprising steps of: (a) transmitting a push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data and an associated application ID specifying the application for invoking the push data to an integrated push service server through a communication network; (b) transmitting the push information to the receiving mobile terminal via an IP push through a mobile internet service network using the integrated push service server; and (c) receiving the push information using an integrated push service agent resident in a memory of the mobile terminal, and invoking the application compliant to the associated application ID to deliver the push data. [11] The method in accordance with claim 10, further comprising (d) detecting an idle mode of the mobile terminal by a presence server prior to the step (a), wherein the step (b) further comprises: (a-1) requesting the push information as a paging message using a paging controller of the mobile internet service network when the mobile terminal is determined to be in the idle mode; and (a-2) broadcasting the push information as the paging message through at least one RAS using the paging controller, and wherein the step (c) comprises

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	extracting the push information by parsing the paging message using the integrated push service agent. [12] The method in accordance with claim 10, wherein the step (c) further comprises (c-1) transmitting a reception acknowledge message to the integrated push service server according to the reception of the push information using the integrated push service agent, wherein the step (b) further comprises: (b-1) requesting a paging controller of the mobile internet service network to transmit the push information as the paging message when the reception acknowledge message is not received; and (b-2) broadcasting the push information as the paging message through at least one RAS using the paging controller, and wherein the step (c) extracting the push information by parsing the paging message using the integrated push service agent. [13] The method in accordance with one of claims 11 and 12, wherein further comprising (e) establishing a communication session between the integrated push service server and the integrated push service agent according to the reception of the push information after carrying out the step (c). [14] The method in accordance with one of claims 11 and 12, wherein the step (b) comprises storing the push information when the mobile terminal is not connected to the mobile internet service network, and re-transmitting the stored push information when the mobile terminal is connected to the mobile internet service network. [15] The method in accordance with one of claims 11 and 12, wherein the step (b) comprises:

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	(b-3) transmitting the push information to a SMSC of the mobile internet service network when the mobile terminal is determined to be disconnected from the mobile internet service network; and (b-4) transmitting the push information to the receiving mobile terminal as an SMS by the SMCC, and wherein the step (c) further comprises (c-2) extracting the push information by parsing the SMS by the integrated push service agent.
[1c] the network message server configured to receive, from each of a plurality of network application servers, multiple requests to transmit application data, each such request indicating a corresponding one of the mobile end-user devices and one of a plurality of applications,	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1b].
[1d] the network message server to generate corresponding Internet data messages based on the requests, each such message containing at least one application identifier for an indicated application and application data corresponding to one of the requests, and	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1c].
[1e] the network message server to transmit each of the generated Internet data messages to the device messaging agent located on the device indicated in the corresponding request, using the corresponding secure Internet data connection for	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1d].

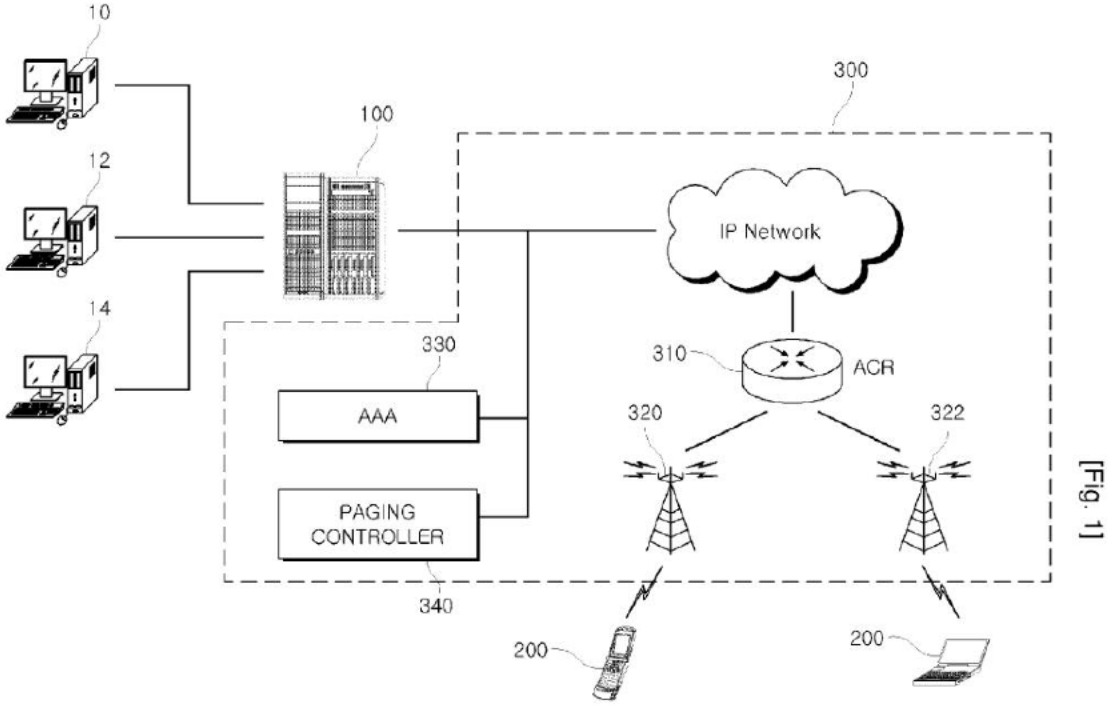
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the device indicated in the corresponding request;	
[1f] each device messaging agent, when executing, to receive the Internet data messages from the secure Internet data connection corresponding to the device executing the device messaging agent, and	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1e].
[1g] to, for each received message, map the application identifier in the message to a software process corresponding to the application identifier, and forward the application data in the message to the software process via a secure interprocess communication service.	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1f]. Lee at [8] It is an object of the present invention to provide a system and a method for providing an integrated push service wherein various push data generated from a plurality of push application servers are transmitted through an integrated push service server and a mobile terminal extracts an associated application ID app_ID and loads an integrated push service agent selectively invoking a corresponding application to provide the various push services through a mobile internet network, and wherein a separate module for a transmission of the push data is not required for the push service server to reduce a cost for building the push service server, and wherein only a single integrated push service agent is loaded in a memory of the mobile terminal to optimize a system resource of the mobile terminal.
Claim 2	
2. The network system of claim 1, the network message server further to collect and buffer multiple	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures:

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requests to transmit application data to a particular one of the devices.	*See*, *e.g.*, the disclosures identified for [1pre] – [1g]. Lee at Abstract The present invention relates to a system and a method for providing an integrated push service in an internet service network, and the integrated push service system comprises a plurality of push application servers for providing a push information, the push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data, and an associated application ID specifying the application for invoking the push data; an integrated push service server for receiving the push information and providing the push information to the mobile terminal receiving the push data through an IP push; a mobile internet service network including a plurality of RASs to carry out a communication between the push service server and the mobile terminal receiving the push data; and the mobile terminal for receiving the push information through a mobile internet modem for connecting to the mobile internet service network, the mobile terminal comprising at least one application for associating with the push information, wherein the mobile terminal further comprises a communication session manager resident in a memory thereof, the communication session manager maintaining a communication session with the integrated push service server when the mobile internet modem is connected to the mobile internet service network, and an integrated push service agent for selectively invoking the ap¬ plication compliant to the associated application ID of the received push information to deliver the push data. Lee at [9] It is another object of the present invention to provide a system and a method for providing an integrated push service wherein an integrated push service server determines whether a receiving mobile terminal is in an idle mode and a push

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	information is broadcasted via a paging controller provided by a mobile internet service network when the mobile terminal is in the idle mode to provide the push information in real time even to the mobile terminal having a communication session with the integrated push service server terminated in the idle mode. Lee at [10] It is yet another object of the present invention to provide a system and a method for providing an integrated push service wherein an integrated push service server transmits a push service as an SMS via a mobile communication service network instead of a mobile internet network when a receiving mobile terminal is not connected to the mobile internet network to provide the push information in real time even when the mobile terminal of a user is in a shadow area of a mobile internet service. Lee at [14] In accordance with the system and the method for providing the integrated push service of the present invention, the integrated push service server determines whether the receiving mobile terminal is in the idle mode and the push information is broadcasted via the paging controller provided by the mobile internet service network when the mobile terminal is in the idle mode to provide the push information in real time even to the mobile terminal having the communication session with the integrated push service server terminated in the idle mode. Lee at [15] In accordance with the system and the method for providing the integrated push service wherein the integrated push service server transmits the push service as the SMS via the mobile communication service network instead of the mobile internet

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	network when the receiving mobile terminal is not connected to the mobile internet network to provide the push information in real time even when the mobile terminal of the user is in the shadow area of the mobile internet service. Lee at [22] Fig. 1 is a diagram illustrating a configuration of an integrated push service system in accordance with an embodiment of the present invention. Referring to Fig. 1, the integrated push service system comprises a plurality of push application servers 10, 12 and 14, an integrated push service server 100, a mobile internet service network 300, and a mobile terminal 200 including an integrated push service agent 250. The plurality of push application servers 10, 12 and 14 provides a push data to a push service application stored in the mobile terminal 200. The plurality of push application servers 10, 12 and 14 generate the push data push data such as a real time news data for a news application, a chatting message for a peer-to-peer messenger application and an e-mail message for an e-mail application. A push information push info including a receiving mobile terminal information specifying the mobile terminal that receives the push data, and an associated application ID app ID specifying the application for invoking the push data along with the push data is also generated.

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[Fig. 1]

Lee at [25]

> The integrated push service server 100 receives the push information push info from the plurality of push application servers 10, 12 and 14 connected through a communication network, and provides the push information push info to the mobile terminal 200 through an IP push push_IP. Because the mobile terminal 200 maintains a communication session with the integrated push service server 100 through a CSM (Communication Session Manager) 251 of the integrated push

'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
	service agent 250, the push information push info including the push data may be transmitted through the IP push push IP. When the push information push info is transmitted through the IP push push IP, the integrated push service server 100 requests the IP push to the mobile internet service network 300. Lee at [26] The mobile terminal 200 transmits a push information acknowledge message ack push to the integrated push service server 100 when the push information push info is received, the integrated push service server 100 acknowledges a successful transmission of the push data by receiving the push information acknowledge message ack push at a reception acknowledge unit 142. A transmission report manager 140 transmits an information on the reception and a push application service to each of the plurality of push application servers 10, 12 and 14 as a transmission report. Lee at [34] In accordance with the embodiment of the present invention, a push service may be provided continuously for the mobile terminal 200 in the idle mode by transmitting the push information through the paging message. When the mobile terminal 200 enters the idle mode, the CSM 251 of the integrated push service agent 250 of the mobile terminal 200 cannot send the push information push info through the IP push push IP because the communication session with the integrated push service server 100 is terminated. While the integrated push service server 100 may schedule and transmit the push information push info or re-transmit the push information push info by recognizing a communication configuration of the mobile terminal 200, the push service cannot be provided in real time. Lee at [36]

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	There are two methods for the mobile terminal 200 to recognize the idle mode of the mobile terminal 200. In accordance with a first method, whether the mobile terminal 200 is in the idle mode is registered in a presence server 130 such that the integrated push service server 100 may inquire the presence server 130 of whether the mobile terminal 200 is in the idle mode prior to transmitting the push information push info. In accordance with a second method, the integrated push service server 100 transmits the push information push info by the IP push push IP and determines that the mobile terminal 200 is in the idle mode when the push information acknowledge message ack_push is not received from the mobile terminal 200. Lee at [37] While a configuration of the integrated push service server 100 is complex due to an association with the presence server 130, an unnecessary IP push is omitted to enable an efficient use of a network resource in accordance with the first method. While an unnecessary traffic is generated due to the IP push push IP, the integrated push service server 100 does not require the association with the presence server 130, thereby simplifying a system configuration in accordance with the second method. Lee at [39] In accordance with first method, the integrated push service server 100 or the mobile internet service network 300 further includes the presence server 130 that determines whether the mobile terminal 200 is in the idle mode, and also further comprises the paging controller 340 for broadcasting the paging message for the mobile terminal 200 through the at least one RASs 320 and 322. The integrated push service server 100 provides the push information push info to the paging controller 340 when the mobile terminal 200 is determined to be in the idle mode using the presence server 130, and the integrated push service agent further comprises a paging message parser

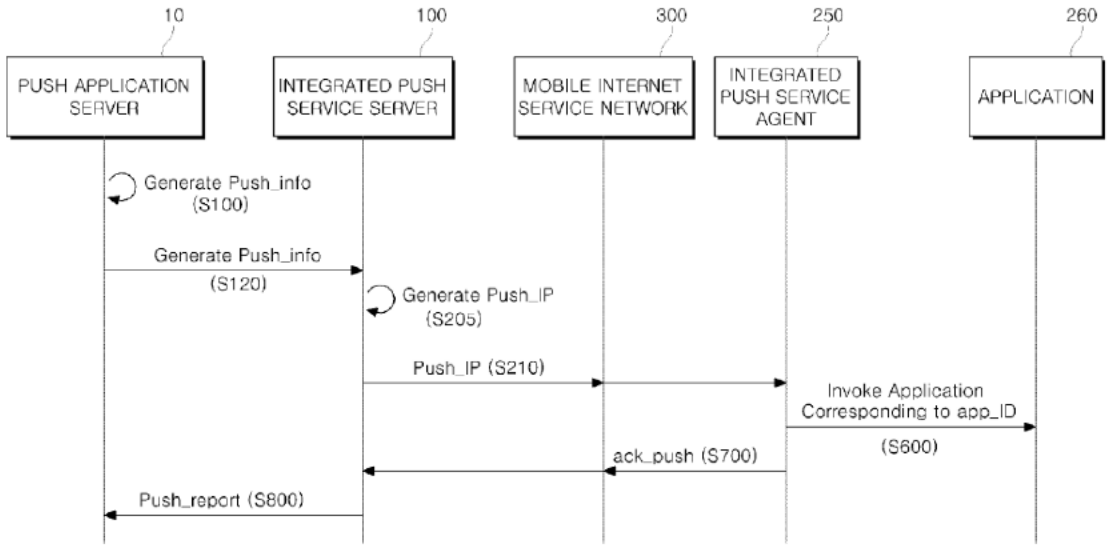
'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
	253 for parsing the push information push info when the push information push_info is received as the paging message push_paging. Lee at [40] In accordance with first method, the integrated push service server 100 inquires the presence server 130 of whether the mobile terminal 200 is in the idle mode and transmits the push information push info as the paging message push paging through the paging controller 340 instead of the IP push push IP in the idle mode. The mobile terminal 200 extracts the push data push data and the associated application ID app ID form the paging message push paging through the paging message parser 253 as the paging message push paging is received. The corresponding application 260 is then invoked to provide various push services between the plurality of push application servers 10, 12 and 14 and the mobile terminal 200. Lee at [42] In accordance with second method, the integrated push service agent 250 further comprises a reception acknowledge report manager 256 for generating the push information acknowledge message ack push, and the mobile internet service network 300 further comprises the paging controller 340 for broadcasting the paging message for the mobile terminal 200 through the at least one RASs 320 and 322. The integrated push service server 100 provides the push information push info to the paging controller 340 when the push information acknowledge message ack push is not received from the reception acknowledge report manager 256, and the mobile terminal 200 is configured to further include the paging message parser 253 for parsing for parsing the push information push info when the push information push_info is received as the paging message push_paging.

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	Lee at [43] In accordance with second method, the integrated push service server 100 transmits the push information push info via the IP push push IP and determines that the mobile terminal 200 is in the idle mode when the push information acknowledge message ack push is not received. The mobile terminal 200 extracts the push data push data and the associated application ID app ID from the paging message push paging through the paging message parser 253 as the paging message push paging is received. The corresponding application 260 is then invoked to provide various push services between the plurality of push application servers 10, 12 and 14 and the mobile terminal 200. Lee at [50] In order to solve above-described problem, the integrated push service system further comprises the mobile communication service network 400 including a plurality of base stations and a SMSC, the mobile terminal 200 further comprises the mobile communication modem 220 for connecting to the mobile communication service network 400, the integrated push service server 100 transmits the push information push info to the SMSC of the mobile communication service network 400 when the mobile terminal 200 is determined to be disconnected from the mobile internet service network, and the integrated push service agent 250 further comprises an SMS parser 254 for parsing the push information push info when the push information push info is received via an SMS push_SMS through the mobile communication modem 250. Lee at [54]

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	Figs. 6 through 8 are diagrams illustrating a communication system of a method for providing an integrated push service in accordance with an embodiment of the present invention. Lee at [55] First steps (Sl00 and S 120) are carried out wherein a push information push info including a push data push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data push data and an associated application ID app ID specifying the a pplication for invoking the push data push data is transmitted to an integrated push service server through a communication network. Lee at [56] Thereafter, second steps S200 and S210 are carried out wherein a integrated push service server 100 transmits the push information push info to the receiving mobile terminal 200 via an IP push through a mobile internet service network 300. Lee at [57] Thereafter, third steps S500 and S600 are carried out wherein an integrated push service agent 250 resident in a memory of the mobile terminal 200 receives the push information push info (S500) and invokes an application 260 compliant to the associated application ID app_ID to deliver the push data push_data. Lee at [58]

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The embodiment is described in detail wherein the push information push info is transmitted as a paging message push message in order to provide the integrated push service even when the mobile terminal 200 is in an idle mode.



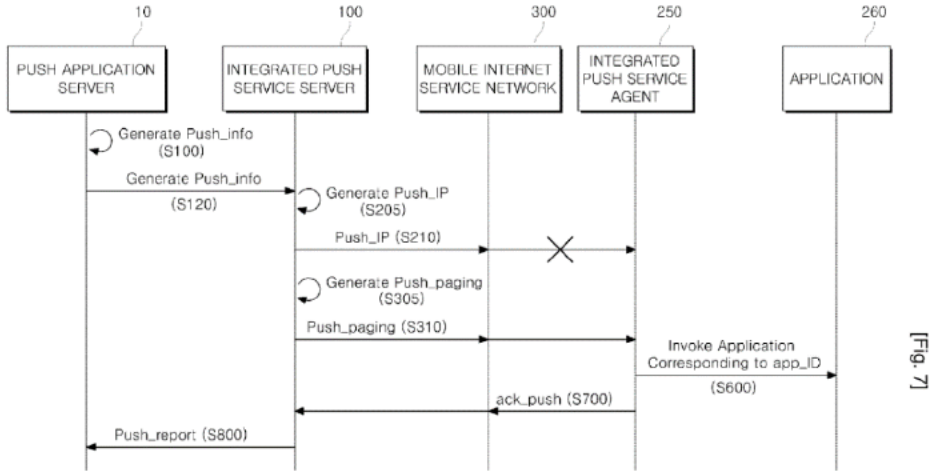
[Fig. 6]

Lee at [59]

First, the method for providing the integrated push service further comprises a fourth step wherein a presence server 130 detects the idle mode of the mobile terminal 200 prior to the first steps Sl00 and S 120, the second steps S200 and S210 further comprises a first sub-step S305 wherein the push information push info is requested to a paging controller 340 of the mobile internet service network 300 to be transmitted as the paging message push_paging when the mobile terminal 200 is

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	determined to be in the idle mode, and a second sub-step S310 wherein the paging controller 340 broadcasts the push information push info as the paging message push paging through at least one RASs 320 and 211, and the third step S600 may be configured in a manner that the integrated push service agent 250 parses the paging message push_paging to extract the push information push_info. Lee at [60] In accordance with the embodiment shown in Fig. 7 wherein the presence server 130 is not used, the third step further comprises a third sub-step (S700) wherein the integrated push service agent 250 transmits a reception acknowledge message ack push to the integrated push service server according to the reception of the push information push info, the second steps S200 and S210 further comprises a first sub-step S305 of requesting a paging controller of the mobile internet service network to transmit the push information push info as the paging message push paging when the reception acknowledge message is not received and a fifth sub-step S310 wherein the paging controller 340 broadcasts the push information push info as the paging message push paging through at least one RASs 320 and 322, and the third step S600 may be configured to in a manner that the integrated push service agent 250 parses the paging message push_paging to extract the push information push_info. Lee at [61] After carrying out the third step S600, the integrated push service agent 250 may further establish a communication session with the integrated push service server according to the reception of the push information push_info.

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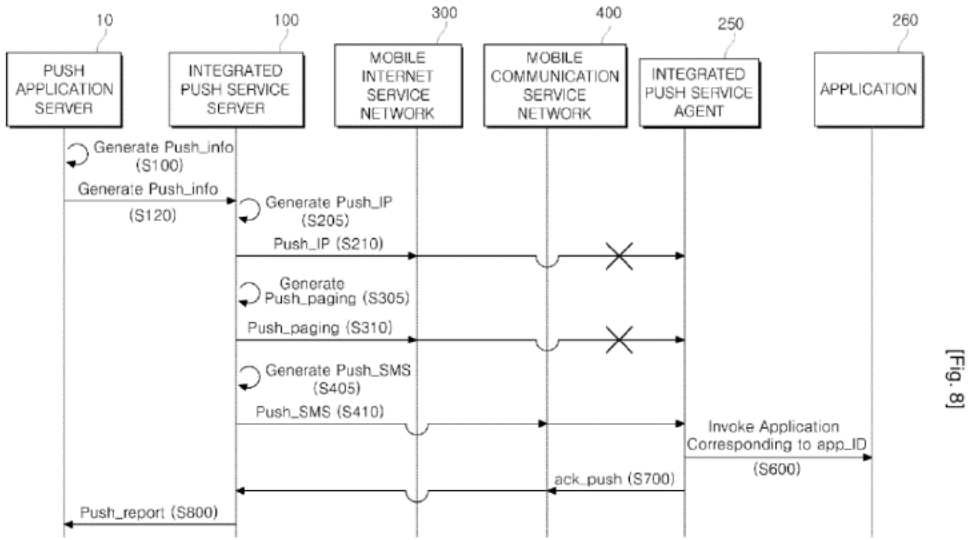
[Fig. 7]

Lee at [62]

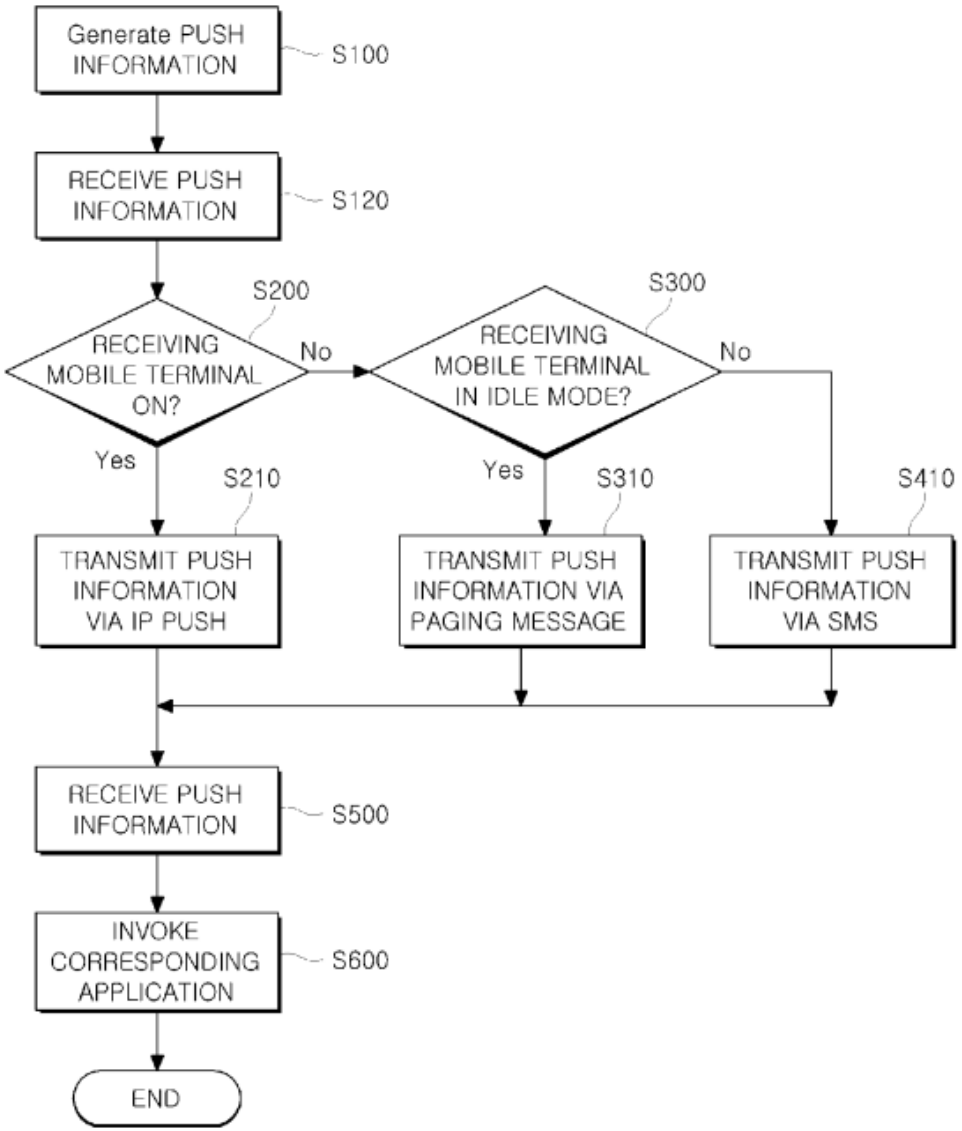
> Finally, an embodiment of the method for providing the integrated push service using the SMS wherein the mobile terminal 200 is a DBDM terminal that may connect to the mobile internet service network 300 and the mobile communication service network 400 and the mobile terminal 200 is not connected to the mobile internet service network 300 to provide the integrated push service in real time is described below in detail.

Lee at [63]

> As shown in Fig. 8, the second steps S200 and S210 comprises a sixth sub-step wherein the push information push info is transmitted to an SMSC of the mobile communication service network 400 when the mobile terminal 200 is determined to be disconnected from the mobile internet service network 300 and a seventh sub-step

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	wherein the SMSC transmits the push information push info to the receiving mobile terminal 200 as the SMS push SMS, and the third steps S500 and S600 further comprises an eighth sub-step wherein the integrated push service agent 250 parses the received SMS push_SMS to extract the push information push_info.  [Fig. 8]

[Fig. 5]


Generate PUSH INFORMATION
S100
RECEIVE PUSH INFORMATION
S120
S200
RECEIVING MOBILE TERMINAL ON?
No
S300
RECEIVING MOBILE TERMINAL IN IDLE MODE?
No
Yes
S210
TRANSMIT PUSH INFORMATION VIA IP PUSH
Yes
S310
TRANSMIT PUSH INFORMATION VIA PAGING MESSAGE
S410
TRANSMIT PUSH INFORMATION VIA SMS
RECEIVE PUSH INFORMATION
S500
INVOKE CORRESPONDING APPLICATION
S600
END

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	Lee at Claims [1] An integrated push service system comprising: a plurality of push application servers for providing a push information, the push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data, and an associated application ID specifying the application for invoking the push data; an integrated push service server for receiving the push information and providing the push information to the mobile terminal receiving the push data through an IP push; a mobile internet service network including a plurality of RASs to carry out a communication between the push service server and the mobile terminal receiving the push data; and the mobile terminal for receiving the push information through a mobile internet modem for connecting to the mobile internet service network, the mobile terminal comprising at least one application for associating with the push information, wherein the mobile terminal further comprises a communication session manager resident in a memory thereof, the communication session manager maintaining a communication session with the integrated push service server when the mobile internet modem is connected to the mobile internet service network, and an integrated push service agent for selectively invoking the application compliant to the associated application ID of the received push information to deliver the push data. [2] The system in accordance with claim 1, wherein the integrated push service server or the mobile internet service network further comprises a presence server for detecting an idle mode of the mobile terminal,

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'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
	wherein the mobile internet service network further comprises a paging controller for broadcasting a paging message for the mobile terminal through the at least one RAS, wherein the integrated push service server provides the push information to the paging controller when the mobile terminal is determined to be in the idle mode through the presence server, and wherein the integrated push service agent further comprises a paging message parser for parsing the push information when the push information is received as the paging message. [3] The system in accordance with claim 1, wherein the integrated push service agent further comprises a reception acknowledge report manager for generating a push information reception acknowledge message according to the reception of the push information, wherein the mobile internet service network further comprises a paging controller for broadcasting a paging message for the mobile terminal through the at least one RAS, wherein the integrated push service server provides the push information to the paging controller when the push information reception acknowledge message is not received from the reception acknowledge report manager after transmitting the push message via an IP push, and wherein the mobile terminal further comprises a paging message parser for parsing the push information when the push information is received as the paging message. [4] The system in accordance with one of claims 2 and 3, wherein the communication session manager establishes a communication session between the integrated push service server and the integrated push service agent by controlling the mobile internet modem when the push information is received as the paging message.

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	[5] The system in accordance with one of claims 2 and 3, wherein the integrated push service server stores the push information when the mobile terminal is not connected to the mobile internet service network and transmits the stored push information when the mobile terminal is connected to the mobile internet service network. … [7] The system in accordance with one of claims 1 through 3, further comprising a mobile communication service network including a plurality of base stations and a SMSC, wherein the mobile terminal further comprises a mobile communication modem for connecting to the mobile communication service network, wherein the integrated push service server transmits the push information to the SMSC of the mobile communication service network when the mobile terminal is determined to be disconnected from the mobile internet service network, and wherein the integrated push service agent further comprises an SMS parser for parsing the push information when the push information is received via an SMS through the mobile communication modem. … [9] The system in accordance with one of claims 1 through 3, wherein the integrated push service server further comprises a transmission report manager for generating a transmission report including a result of a push information transmission, and transmits the result of the push information transmission to the push application server providing the push information. [10] A method for providing an integrated push service comprising steps of:

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	(a) transmitting a push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data and an associated application ID specifying the application for invoking the push data to an integrated push service server through a communication network; (b) transmitting the push information to the receiving mobile terminal via an IP push through a mobile internet service network using the integrated push service server; and (c) receiving the push information using an integrated push service agent resident in a memory of the mobile terminal, and invoking the application compliant to the associated application ID to deliver the push data. [11] The method in accordance with claim 10, further comprising (d) detecting an idle mode of the mobile terminal by a presence server prior to the step (a), wherein the step (b) further comprises: (a-1) requesting the push information as a paging message using a paging controller of the mobile internet service network when the mobile terminal is determined to be in the idle mode; and (a-2) broadcasting the push information as the paging message through at least one RAS using the paging controller, and wherein the step (c) comprises extracting the push information by parsing the paging message using the integrated push service agent. [12] The method in accordance with claim 10, wherein the step (c) further comprises (c-1) transmitting a reception acknowledge message to the integrated push service server according to the reception of the push information using the integrated push service agent, wherein the step (b) further comprises:

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	(b-1) requesting a paging controller of the mobile internet service network to transmit the push information as the paging message when the reception acknowledge message is not received; and (b-2) broadcasting the push information as the paging message through at least one RAS using the paging controller, and wherein the step (c) extracting the push information by parsing the paging message using the integrated push service agent. [13] The method in accordance with one of claims 11 and 12, wherein further comprising (e) establishing a communication session between the integrated push service server and the integrated push service agent according to the reception of the push information after carrying out the step (c). [14] The method in accordance with one of claims 11 and 12, wherein the step (b) comprises storing the push information when the mobile terminal is not connected to the mobile internet service network, and re-transmitting the stored push information when the mobile terminal is connected to the mobile internet service network. [15] The method in accordance with one of claims 11 and 12, wherein the step (b) comprises: (b-3) transmitting the push information to a SMSC of the mobile internet service network when the mobile terminal is determined to be disconnected from the mobile internet service network; and (b-4) transmitting the push information to the receiving mobile terminal as an SMS by the SMCC, and wherein the step (c) further comprises (c-2) extracting the push information by parsing the SMS by the integrated push service agent.
Claim 4	
4. The network system of claim 1, the network message server further	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures:

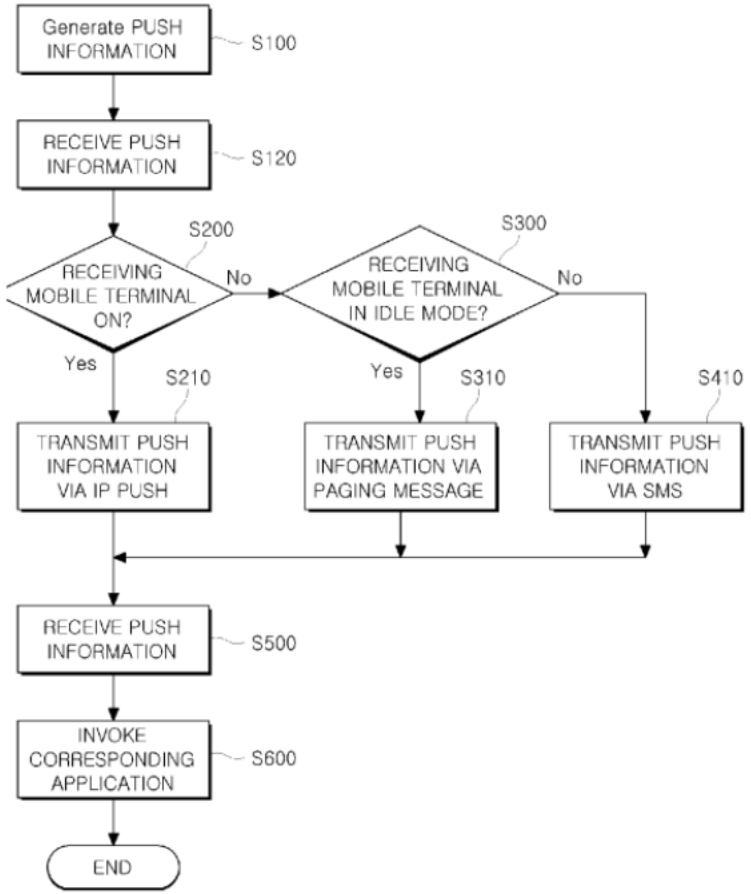
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to encrypt the secure Internet data messages, the device messaging agents further to decrypt each received message to obtain the corresponding application identifier and application data.	*See*, *e.g.*, the disclosures identified for [1pre] – [1g].
Claim 5	
5. The network system of claim 4, wherein the secure Internet data messages are transported to the device messaging agent on each device using one or more of encryption on a transport services stack, IP (Internet Protocol) layer encryption, and tunneling.	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1g], [4]. Lee at [11] In order to achieve above-described object, there is provided an integrated push service system comprising: a plurality of push application servers for providing a push information, the push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data, and an associated application ID specifying the application for invoking the push data; an integrated push service server for receiving the push information and providing the push information to the mobile terminal receiving the push data through an IP push; a mobile internet service network including a plurality of RASs to carry out a communication between the push service server and the mobile terminal receiving the push data; and the mobile terminal for receiving the push information through a mobile internet modem for connecting to the mobile internet service network, the mobile terminal comprising at least one application for associating with the push information, wherein the mobile terminal further comprises a communication session manager resident in a memory thereof, the communication session manager maintaining a communication session with the integrated push service server when the mobile internet modem is connected

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	to the mobile internet service network, and an integrated push service agent for selectively invoking the application compliant to the associated application ID of the received push information to deliver the push data. Lee at [12] There is also provided a method for providing an integrated push service comprising steps of: (a) transmitting a push information including a push data invoked through an application of a mobile terminal, a receiving mobile terminal information specifying the mobile terminal receiving the push data and an associated application ID specifying the application for invoking the push data to an integrated push service server through a communication network; (b) transmitting the push information to the receiving mobile terminal via an IP push through a mobile internet service network using the integrated push service server; and (c) receiving the push information using an integrated push service agent resident in a memory of the mobile terminal, and invoking the application compliant to the associated application ID to deliver the push data.
Claim 6	
6. The network system of claim 1, wherein the device messaging agent executes in a secure execution environment on at least one of the devices, and at least one of the applications executes outside of the secure execution environment on that device.	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1g].
Claim 9	
9. The network system of claim 1, further comprising, on at least one of	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures:

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the devices, the secure interprocess communication service, and wherein the secure interprocess communication service and the secure Internet data connection from that device to the network message server are separately secured.	*See*, *e.g.*, the disclosures identified for [1pre] – [1g]. Lee at [20] Fig. 5 is a diagram illustrating a configuration of an integrated push service agent in accordance with an embodiment of the present invention.

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[Fig. 5]



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Claim 10	
10. The network system of claim 1, wherein at least one of the secure Internet data messages comprises multiple identifier/data pairs.	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See, e.g.*, the disclosures identified for [1pre] – [1g]. Lee at [13] In accordance with the system and the method for providing the integrated push service of the present invention, the various push data generated from the plurality of push application servers are transmitted through the integrated push service server and the mobile terminal extracts the associated application ID app_ID and loads the integrated push service agent selectively invoking the corresponding application to provide the various push services through the mobile internet network, the separate module for the transmission of the push data is not required for the push service server to reduce the cost for building the push service server, and only the single integrated push service agent is loaded in the memory of the mobile terminal to optimize the system resource of the mobile terminal.
Claim 11	
11. The network system of claim 1, wherein the secure interprocess communication service forwards the application data to at least one of the software processes in an encrypted format.	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See, e.g.*, the disclosures identified for [1pre] – [1g].
Claim 12	
12. The network system of claim 1, the device messaging agent on at least one of the devices further to	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See, e.g.*, the disclosures identified for [1pre] – [1g].

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initiate the secure connection to the network message server.	Lee at [3] On the other hand, a push service is widely used for a sophisticated communication service. The push service actively transmits a data to a client by a server without a user intervention. For instance, an information selected by a user (a news, a stock information and a sports information) is provided to a user terminal in real time or a data for an upgrade is automatically transmitted to the user terminal in order to increase a user convenience. Lee at [47] However, in accordance with embodiment, while the mobile internet modem 210 maintains the communication with the mobile communication service network 400 in order to receive an incoming call, a communication with the mobile internet service network 300 for the data communication is established selectively when required by a user. In addition, since the mobile internet service network 300 has a small service coverage compared to the mobile communication service network 400, the communication with the mobile communication service network 400 is frequently terminated when the mobile terminal 200 enters a shadow area. [48] When the mobile terminal 200 is unable to establish the communication with the mobile communication service network 400, the push data push_data cannot be transmitted via the IP push push_IP or the paging message push_paging even when a new push data push_data is generated in a push application server 10.
Claim 13	
13. The network system of claim 1, at least one of the devices having a network stack in communication with the device messaging agent, wherein the secure connection	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1g]. Lee at [3]

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between the network message server and that device is terminated within the network stack.	On the other hand, a push service is widely used for a sophisticated communication service. The push service actively transmits a data to a client by a server without a user intervention. For instance, an information selected by a user (a news, a stock information and a sports information) is provided to a user terminal in real time or a data for an upgrade is automatically transmitted to the user terminal in order to increase a user convenience. Lee at [47] However, in accordance with embodiment, while the mobile internet modem 210 maintains the communication with the mobile communication service network 400 in order to receive an incoming call, a communication with the mobile internet service network 300 for the data communication is established selectively when required by a user. In addition, since the mobile internet service network 300 has a small service coverage compared to the mobile communication service network 400, the communication with the mobile communication service network 400 is frequently terminated when the mobile terminal 200 enters a shadow area. [48] When the mobile terminal 200 is unable to establish the communication with the mobile communication service network 400, the push data push_data cannot be transmitted via the IP push push_IP or the paging message push_paging even when a new push data push_data is generated in a push application server 10.
Claim 14	
14. The network system of claim 1, wherein at least one of the applications on at least one of the devices and the network application server corresponding to that application authenticate with each other prior to passing application data via the device messaging agent	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1g]. Lee at [3] On the other hand, a push service is widely used for a sophisticated communication service. The push service actively transmits a data to a client by a server without a

'117 Claims	International Patent Application Publication No. 2008/048075 to Lee et al. ("Lee")
on that device and the network message server.	user intervention. For instance, an information selected by a user (a news, a stock information and a sports information) is provided to a user terminal in real time or a data for an upgrade is automatically transmitted to the user terminal in order to increase a user convenience.
Claim 16	
16. The network system of claim 2, wherein the network message server transmits the collected and buffered requests to the particular device upon the occurrence of a transmission trigger.	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1g], [2]. Lee at [3] On the other hand, a push service is widely used for a sophisticated communication service. The push service actively transmits a data to a client by a server without a user intervention. For instance, an information selected by a user (a news, a stock information and a sports information) is provided to a user terminal in real time or a data for an upgrade is automatically transmitted to the user terminal in order to increase a user convenience. Lee at [47] However, in accordance with embodiment, while the mobile internet modem 210 maintains the communication with the mobile communication service network 400 in order to receive an incoming call, a communication with the mobile internet service network 300 for the data communication is established selectively when required by a user. In addition, since the mobile internet service network 300 has a small service coverage compared to the mobile communication service network 400, the communication with the mobile communication service network 400 is frequently terminated when the mobile terminal 200 enters a shadow area. [48] When the mobile terminal 200 is unable to establish the communication with the mobile communication service network 400, the push data push data cannot be

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	transmitted via the IP push push_IP or the paging message push_paging even when a new push data push_data is generated in a push application server 10.
Claim 17	
17. The network system of claim 16, wherein the transmission trigger is the expiration of a periodic timer.	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See*, *e.g.*, the disclosures identified for [1pre] – [1g], [16]. Lee at [3] On the other hand, a push service is widely used for a sophisticated communication service. The push service actively transmits a data to a client by a server without a user intervention. For instance, an information selected by a user (a news, a stock information and a sports information) is provided to a user terminal in real time or a data for an upgrade is automatically transmitted to the user terminal in order to increase a user convenience. Lee at [47] However, in accordance with embodiment, while the mobile internet modem 210 maintains the communication with the mobile communication service network 400 in order to receive an incoming call, a communication with the mobile internet service network 300 for the data communication is established selectively when required by a user. In addition, since the mobile internet service network 300 has a small service coverage compared to the mobile communication service network 400, the communication with the mobile communication service network 400 is frequently terminated when the mobile terminal 200 enters a shadow area. [48] When the mobile terminal 200 is unable to establish the communication with the mobile communication service network 400, the push data push_data cannot be transmitted via the IP push push_IP or the paging message push_paging even when a new push data push_data is generated in a push application server 10.

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Claim 18	
18. The network system of claim 16, wherein the transmission trigger is the receipt of a transmission from the device messaging agent of the particular device.	Lee discloses and/or renders obvious this limitation. For example, see the following passages and/or figures, as well as related disclosures: *See, e.g.*, the disclosures identified for [1pre] – [1g], [16]. Lee at [3] On the other hand, a push service is widely used for a sophisticated communication service. The push service actively transmits a data to a client by a server without a user intervention. For instance, an information selected by a user (a news, a stock information and a sports information) is provided to a user terminal in real time or a data for an upgrade is automatically transmitted to the user terminal in order to increase a user convenience. Lee at [47] However, in accordance with embodiment, while the mobile internet modem 210 maintains the communication with the mobile communication service network 400 in order to receive an incoming call, a communication with the mobile internet service network 300 for the data communication is established selectively when required by a user. In addition, since the mobile internet service network 300 has a small service coverage compared to the mobile communication service network 400, the communication with the mobile communication service network 400 is frequently terminated when the mobile terminal 200 enters a shadow area. [48] When the mobile terminal 200 is unable to establish the communication with the mobile communication service network 400, the push data push_data cannot be transmitted via the IP push push_IP or the paging message push_paging even when a new push data push_data is generated in a push application server 10.