Furthermore, even if a first-world country has good bandwidth or good data networking capabilities, a user may be on a limited data plan in which the user can only download a certain amount of digital data during a particular time period, such as a month. It would be desirable to provide a way in which the user could download the digital data and access the applications without always using the allotted data of the limited data plan.

In addition, wireless network operators are continually facing challenges to provide the level and quantity of data access for some first-world countries. In particular, they either cannot build out their network infrastructure quickly enough to keep up with the user demand for data or do not want to expend the resources to build out their network infrastructure. It would be desirable to provide a way in which the network operator can provide the digital data access and access to the applications using other data networking resources.

According to a first aspect of the present invention, there is provided an apparatus, including: a receiver component that receives a request for digital content over a secondary network comprising a short message system (SMS) network; the receiver generating a request for digital content from a remote source by translating the request for data received over the secondary network; and the receiver receiving the requested digital content from the remote source based on the request and converting the requested digital content from the remote source into a response by splitting and compressing the requested digital content into a plurality of textual SMS messages transmitted over the secondary network so that a device that uses the secondary network is able to access the digital content.

According to a second aspect of the present invention, there is provided a client, including: a computing device having a processor that executes a client application; the client application generating a request for digital content in a message and sending the message over a secondary network to a backend component, the secondary network comprising a short message system (SMS) network; and the client application receiving a message over the secondary network with the requested digital content comprising a plurality of textual SMS messages from the backend component, wherein the plurality of textual SMS messages comprises the requested digital content split and compressed into the plurality of textual SMS messages, the client application converting the message over the secondary network into the requested digital content.

According to a third aspect of the present invention, there is provided a method for data exchange using a backend system and a computing device capable of communicating over a secondary network, the method including: generating, by a computing device, a request for digital content message; transmitting the request for digital content message over a secondary network to a backend system, the secondary network comprising one of a short message system (SMS) network and a 2G network; generating, at the backend system, a request for digital content from a remote source by translating the request for digital content message received over the secondary network; receiving, by the backend system, the requested digital content from the remote source; and splitting and compressing, by the backend system, the requested digital content into a plurality of textual SMS messages transmitted over the secondary network back to the computing device so that the computing device that uses the secondary network is able to access the digital content.

Brief Description of the Drawings

Figure 1 illustrates an example of an implementation of a system for asynchronous application data access;

Figure 2 illustrates more details of the system for asynchronous application data access;

Figure 3 illustrates more details of each computing device of the system for asynchronous application data access;

Figure 4 illustrates more details of the backend component of the system for asynchronous application data access;

Figure 5 illustrates a method for asynchronous application data access;

Figure 6 illustrates a screen of a typical computing device;

Figure 7 illustrates an example of a home screen for a computing device having asynchronous application data access;

CLAIMS

1. An apparatus, comprising:

a receiver component that receives a request for digital content over a secondary network comprising a short message system (SMS) network;

the receiver generating a request for digital content from a remote source by translating the request for data received over the secondary network; and

the receiver receiving the requested digital content from the remote source based on the request and converting the requested digital content from the remote source into a response by splitting and compressing the requested digital content into a plurality of textual SMS messages transmitted over the secondary network so that a device that uses the secondary network is able to access the digital content.

2. The apparatus of claim 1, wherein the secondary network further comprises a short message system (SMS) network and a 2G network.

3. The apparatus of claim 1 further comprising a computing device that sends the request for data over the secondary network, the computing device having a meta-application that has a plurality of sub-applications to be accessed by the computing device over the secondary network.

4. The apparatus of claim 1, wherein the receiver further comprises an encoder component that encodes an application programming interface (API) call into a message compatible with the secondary network.

5. The apparatus of claim 4, wherein the message is encoded into a uuencoded base64 message.

6. The apparatus of claim 4, wherein the encoder generates the API call and message using a service descriptor.

7. The apparatus of claim 1, wherein the receiver compresses and encrypts the response.

8. The apparatus of claim 1, wherein the receiver selects a secondary network based on a transport layer system of a computing device that made the request.

9. The apparatus of claim 1, wherein the receiver further comprises a decoder component that decodes, decompresses and decrypts the response into a call to a remote server for the content.

10. The apparatus of claim 9, wherein the call to a remote server is an HTTP REST API.

11. The apparatus of claim 1, wherein the receiver has a cache of data objects wherein each data object corresponds to an API call with one or more specific parameters.

12. The apparatus of claim 11, wherein the data objects is one of a PNG image and a JPG image.

13. A client, comprising:

a computing device having a processor that executes a client application;

the client application generating a request for digital content in a message and sending the message over a secondary network to a backend component, the secondary network comprising a short message system (SMS) network; and

the client application receiving a message over the secondary network with the requested digital content comprising a plurality of textual SMS messages from the backend component, wherein the plurality of textual SMS messages comprises the requested digital content split and compressed into the plurality of textual SMS messages, the client application converting the message over the secondary network into the requested digital content.

14. The client of claim 13 wherein the client application decodes and maps the message to application programming interface (API) calls.

15. The client of claim 13, wherein the message is encoded into a uuencoded base64 message.

16. The client of claim 13, wherein the secondary network is a short message system (SMS) network.

17. The client of claim 13, wherein each message has a credit cost that is debited from a credit balance.

18. A method for data exchange using a backend system and a computing device capable of communicating over a secondary network, the method comprising:

generating, by a computing device, a request for digital content message;

transmitting the request for digital content message over a secondary network to a backend system, the secondary network comprising one of a short message system (SMS) network and a 2G network;

generating, at the backend system, a request for digital content from a remote source by translating the request for digital content message received over the secondary network;

receiving, by the backend system, the requested digital content from the remote source; and

splitting and compressing, by the backend system, the requested digital content into a plurality of textual SMS messages transmitted over the secondary network back to the computing device so that the computing device that uses the secondary network is able to access the digital content.

19. The method of claim 18, wherein the secondary network further comprises a short message system (SMS) network and a 2G network.

20. The method of claim 18, wherein converting the requested digital content into a message sent over the secondary network further comprises encoding an application programming interface (API) call into a message compatible with the secondary network.

21. The method of claim 20, wherein the message is encoded into a uuencoded base64 message.

22. The method of claim 21, wherein encoding further comprises generating the API call and message using a service descriptor.

23. The method of claim 18, wherein encoding further comprises compressing and encrypting the message.

24. The method of claim 18 further comprising selecting, by the backend system, a secondary network based on a transport layer system of a computing device that made the request.

25. The method of claim 18, wherein generating the request for digital content further comprises decoding, decompressing and decrypting the message into a call to a remote server for the content.

26. The method of claim 25, wherein the call to a remote server is an HTTP REST API.

27. The method of claim 18 further comprising caching, in a cache of data objects in the backend system, one or more data objects wherein each data object corresponds to an API call with one or more specific parameters.

28. The method of claim 27, wherein the data objects is one of a PNG image and a JPG image.