VISUAL TELEPHONY APPARATUS, SYSTEM AND METHOD

Priority is claimed to provisional application serial number 61/516,664, filed April 5, 2011, entitled: "Visual Voice Call Apparatus, System and Method," which is referred to and incorporated herein in its entirety by this reference.

Field Of The Invention

Embodiments of tThe present invention generally relates to communication systems. More particularly, embodiments of the present invention concerns a system, method and apparatus to enable access to visual information over the Public Switch Telephone Network.

Background Of The Invention

Within two years of the 1876 invention of telephone, a personal video phone known as a "telephonoscope" was conceptualized and popularized in the press. Such a device, it was asserted, would allow merchants to transmit pictures of their wares to customers in distant cities.

Alexander Graham Bell himself went on to predict that: "...the day would come when the man at the telephone would be able to see the distant person to whom he was speaking." Yet, for most of us, visual telephony is far from an everyday experience some 130 years later.

The technology emerged by the 1920's that allowed television to be deployed. Inspired by radio and constrained by cost, television emerged as the one-to-many broadcast system we know today.

Video conferencing systems are now available as IP-based systems but have mostly been displaced by Internet meeting services like Cisco WebEx, GoToMeeting, and Fuze Meeting. Video services like Skype, Facetime, and other visual services have been deployed to provide visual interaction and/or desktop sharing on a one-to-many and one-to-one basis.

All of these services bypass the Public Switched Telephone Network (PSTN) as they are initiated and conducted by means of the IP-based network. Sessions are initiated either by entering an Internet address, clicking a link, or by the use of a proxy that connects two users from point to point over IP-based network.

Most telephone applications are limited to voice and touchtone telephony communications. When dynamic, interactive visual content is desired in real time, consumers use the Internet, where visual information is robust but neither synchronized to the automated telephone application nor visible to a sales agent.

A typical sales inquiry typically includes a phone call where the agent verbally instructs the hapless consumer to click to the relevant section of the merchants website to "see" the product and features being discussed. Or, if the voice call is initiated by the

consumer, the consumer is left to describe where they are in the merchant's website so the agent may catch up and follow along. Either approach may become a frustrating experience

Therefore, there remains a need to overcome one or more of the limitations in the above-described, existing art. The discussion of the background to the invention included herein is included to explain the context of the invention. This is not to be taken as an admission that any of the material referred to was published, known or part of the common general knowledge as at the priority date of the claims.

Summary of the Invention

According to a first aspect of the present invention, there is provided a method implemented using a processor, the method comprising the steps of: detecting at least one telephony attribute associated with a voice call directed from a voice communication device to a publicly switched telephone network number, where the step of detecting the telephony attribute occurs outside to the voice communication device, and where the at least one telephony attribute is selected from a group consisting of: a telephone number, a number associated with a voice communication device, a voice network identifier, an area code, a country code, an initiation of a voice call, a connection of a voice call, a disconnection of a voice call, a termination of a voice call, a detection of a Public-Switched Telephone Network signal, a detection of a Voice over Internet Protocol signal, a detection of a Interactive Voice Response signal, a detection of a Dual Tone Multi-Frequency signal, a geographic location identifier, a street address, a zip code, a postal code, an account identifier associated with a subscriber, and a combination of two or more thereof; identifying a visual content that has been preassociated with the at least one telephony attribute; initiating a request for the visual content in response to the detecting step; and receiving the visual content in response to the initiating step, the visual content being received at a display device.

According to a second aspect of the present invention, there is provided a method implemented using a processor, the method comprising the steps of: detecting at least one telephony attribute associated with a voice call directed from a voice communication device to a publicly switched telephone network number, where the at least one telephony attribute is selected from a group consisting of: a telephone number, a number associated with a voice communication device, a voice network identifier, an area code, a country code, an initiation of a voice call, a connection of a voice call, a disconnection of a voice call, a termination of a

voice call, a detection of a Public-Switched Telephone Network signal, a detection of a Voice over Internet Protocol signal, a detection of a Interactive Voice Response signal, a detection of a Dual Tone Multi-Frequency signal, a geographic location identifier, a street address, a zip code, a postal code, an account identifier associated with a subscriber, and a combination of two or more thereof; identifying at least one participant associated with the at least one telephony attribute; initiating a request for the at least one participant to access a multi-party video display; and providing access to the multi-party video display to the at least one participant.

According to a third aspect of the present invention, there is provided a system comprising: a detection module configured to detect an initiation of a voice call from a voice communication device to a publicly switched telephone network number, where the detection module is located outside to the voice communication device; an identification module configured to identify a visual content preassociated with the telephone number; and an access module communicatively coupled to the detection module and configured to send a request for the identified visual content to a content subsystem and receive the identified visual content from the content subsystem in response to the request; where the access module sends the identified visual content to a display device.

Brief Description Of The Drawings

FIG. 1 is a block diagram illustrating an exemplary visual telephony apparatus, according to an embodiment of the present invention;

FIG. 2 is a block diagram illustrating an exemplary visual telephony apparatus, according to an embodiment that includes a call center;

FIG. 3 is a block diagram illustrating a particular embodiment of the content subsystem of FIG. 1;

FIG. 4 is a block diagram illustrating a particular embodiment of the application subsystem of FIG. 1;

FIG. 5 is a block diagram illustrating a particular embodiment of the PSTN interface of FIG. 1;

FIG. 6 is a block diagram illustrating a particular embodiment of the interactive displays of FIG. 1;

FIG. 7 is a flowchart illustrating an exemplary process for providing visual content in response to recognition of an occurrence of predefined telephony signals, according to an embodiment of the present invention; and

FIG. 8 is a flowchart illustrating an exemplary process for joining participants in a multi-party video conference in response to recognition of an occurrence of predefined telephony signals, according to another embodiment of the present invention.

It will be recognized that some or all of the Figures are schematic representations for purposes of illustration and do not necessarily depict the actual relative sizes or locations of the elements shown. The Figures are provided for the purpose of illustrating one or more embodiments of the invention with the explicit understanding that they will not be used to limit the scope or the meaning of the claims.

Detailed Description Of The Preferred Embodiments

In the following description, for the purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the Telex Apparatus 100

CLAIMS

WHAT IS CLAIMED IS:

1. A method implemented using a processor, the method comprising the steps of:

detecting at least one telephony attribute associated with a voice call directed from a voice communication device to a publicly switched telephone network number;

identifying a visual content that has been preassociated with the at least one telephony attribute;

initiating a request for the visual content in response to the detecting step; and

receiving the visual content in response to the initiating step, the visual content being received at a display device.

2. The method of claim 1, where the at least one telephony attribute comprises at least one of a called number, and a caller number associated with the voice communication device.

3. The method of claim 1, where the step of identifying a visual content comprises querying an index stored at a publicly switched telephone network interface and identifying a visual content associated with the at least one telephony attribute.

4. The method of claim 1, where the step of identifying the visual content comprises querying an index stored at a publicly switched telephone network interface and identifying an interactive display associated with the telephony attributes.

5. The method of claim 1, where the voice communication device comprises a device structured to communicate with the public switched telephone network.

6. The method of claim 1, where the step of initiating the request for the visual content comprises querying a content subsystem containing visual content associated with the telephony attributes.

7. The method of claim 1, where the visual content is selected from the group consisting of: a static visual content, a dynamic visual content, an interactive visual content, a menu, and a combination of two or more thereof.

8. The method of claim 1, where the display device is structured to communicate with an Internet.

9. The method of claim 1, where the publicly switched telephone network number is a toll-free number.

10. The method of claim 1, where the voice communication device is also the display device.

11. The method of claim 1, where the display device is a multi-party video display.

12. A method implemented using a processor, the method comprising the steps of:

detecting at least one telephony attribute associated with a voice call directed from a voice communication device to a publicly switched telephone network number;

identifying at least one participant associated with the at least one telephony attribute;

initiating a request for the at least one participant to access a multi-party video display; and

providing access to the multi-party video display to the at least one participant.

13. The method of claim 12, where the publicly switched telephone network number is a toll-free number.

14. The method of claim 12, where a voice from the voice call and the multi-party video display are placed into a multiparty video conference.

15. The method of claim 12, where a voice from the voice call and the multi-party video display are joined into a multiparty video conference and a visual content displayed on the multi-party video display is viewable to a plurality of other callers.

16. A system comprising:

a detection module configured to detect an initiation of a voice call from a voice communication device to a publicly switched telephone network number;

an identification module configured to identify a visual content preassociated with the telephone number; and

an access module communicatively coupled to the detection module and configured to send a request for the identified visual content to a content subsystem and receive the identified visual content from the content subsystem in response to the request;

where the access module sends the identified visual content to a display device.

17. The system of claim 16, where the publicly switched telephone network number is a toll-free number.

18. The system of claim 16, where the display device is a multi-party video display.

19. The system of claim 16, where the voice communication device is also the display device.

20. The system of claim 16, where the at least one telephony attribute comprises at least one of a called number, and a caller number associated with the voice communication device.

CLAIMS:

1. A method implemented using a processor, the method comprising the steps of:

detecting at least one telephony attribute associated with a voice call directed from a voice communication device to a publicly switched telephone network number, where the step of detecting the telephony attribute occurs outside to the voice communication device, and where the at least one telephony attribute is selected from a group consisting of:

a telephone number, a number associated with a voice communication device, a voice network identifier, an area code, a country code, an initiation of a voice call, a connection of a voice call, a disconnection of a voice call, a termination of a voice call, a detection of a Public-Switched Telephone Network signal, a detection of a Voice over Internet Protocol signal, a detection of a Interactive Voice Response signal, a detection of a Dual Tone Multi-Frequency signal, a geographic location identifier, a street address, a zip code, a postal code, an account identifier associated with a subscriber, and a combination of two or more thereof;

identifying a visual content that has been preassociated with the at least one telephony attribute;

initiating a request for the visual content in response to the detecting step; and

receiving the visual content in response to the initiating step, the visual content being received at a display device.

2. The method of claim 1, where the step of identifying a visual content comprises querying an index stored at a publicly switched telephone network interface and identifying a visual content associated with the at least one telephony attribute.

3. The method of claim 1, where the step of identifying the visual content comprises querying an index stored at a publicly switched telephone network interface and identifying an interactive display associated with the telephony attributes.

4. The method of claim 1, where the voice communication device comprises a device structured to communicate with the public switched telephone network.

5. The method of claim 1, where the step of initiating the request for the visual content comprises querying a content subsystem containing visual content associated with the telephony attributes.

6. The method of claim 1, where the visual content is selected from the group consisting of: a static visual content, a dynamic visual content, an interactive visual content, a menu, and a combination of two or more thereof.

7. The method of claim 1, where the display device is structured to communicate with an Internet.

8. The method of claim 1, where the publicly switched telephone network number is a toll-free number.

9. The method of claim 1, where the voice communication device is also the display device.

10. The method of claim 1, where the display device is a multi-party video display.

11. A method implemented using a processor, the method comprising the steps of:

detecting at least one telephony attribute associated with a voice call directed from a voice communication device to a publicly switched telephone network number, where the at least one telephony attribute is selected from a group consisting of:

a telephone number, a number associated with a voice communication device, a voice network identifier, an area code, a country code, an initiation of a voice call, a connection of a voice call, a disconnection of a voice call, a termination of a voice call, a detection of a Public-Switched Telephone Network signal, a detection of a Voice over Internet Protocol signal, a detection of a Interactive Voice Response signal, a detection of

a Dual Tone Multi-Frequency signal, a geographic location identifier, a street address, a zip code, a postal code, an account identifier associated with a subscriber, and a combination of two or more thereof;

identifying at least one participant associated with the at least one telephony attribute;

initiating a request for the at least one participant to access a multi-party video display; and

providing access to the multi-party video display to the at least one participant.

12. The method of claim 11, where the publicly switched telephone network number is a toll-free number.

13. The method of claim 11, where a voice from the voice call and the multi-party video display are placed into a multiparty video conference.

14. The method of claim 11, where a voice from the voice call and the multi-party video display are joined into a multiparty video conference and a visual content displayed on the multi-party video display is viewable to a plurality of other callers.

15. A system comprising:

a detection module configured to detect an initiation of a voice call from a voice communication device to a publicly switched telephone network number, where the detection module is located outside to the voice communication device;

an identification module configured to identify a visual content preassociated with the telephone number; and

an access module communicatively coupled to the detection module and configured to send a request for the identified visual content to a content subsystem and receive the identified visual content from the content subsystem in response to the request;

where the access module sends the identified visual content to a display device.

16. The system of claim 15, where the publicly switched telephone network number is a toll-free number.

17. The system of claim 15, where the display device is a multi-party video display.

18. The method of claim 15, where the voice communication device is also the display device.