

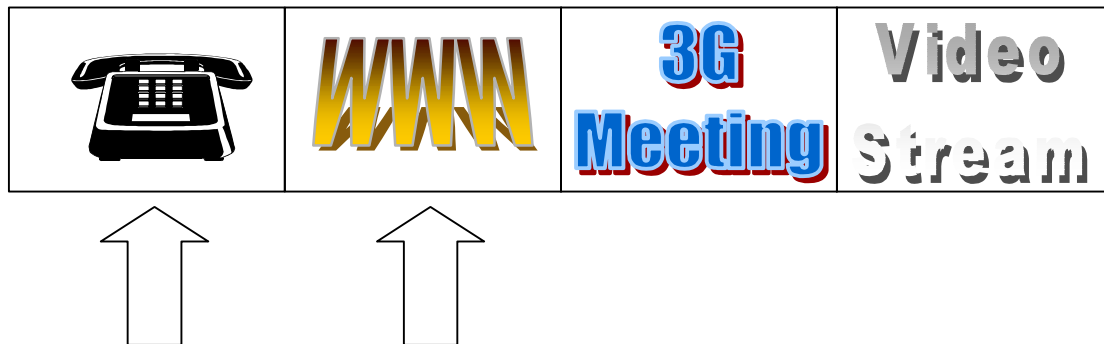
Source: LM Ericsson
Title: IP Multimedia/Multiple Application/Telephony Usage Aspects
Document for: Information
Agenda Item: 5

Introduction

This document is aiming at facilitating forthcoming discussions on what is an IP multimedia application in relation to multiple applications and Telephony. Aspects of new and existing revenue streams are considered as well.

Multiple Applications – Telephony and Web browsing Example

Menu Bar



End-User presses the Telephony and WWW icon after another. Result is a voice conversation and a web surfing simultaneously.

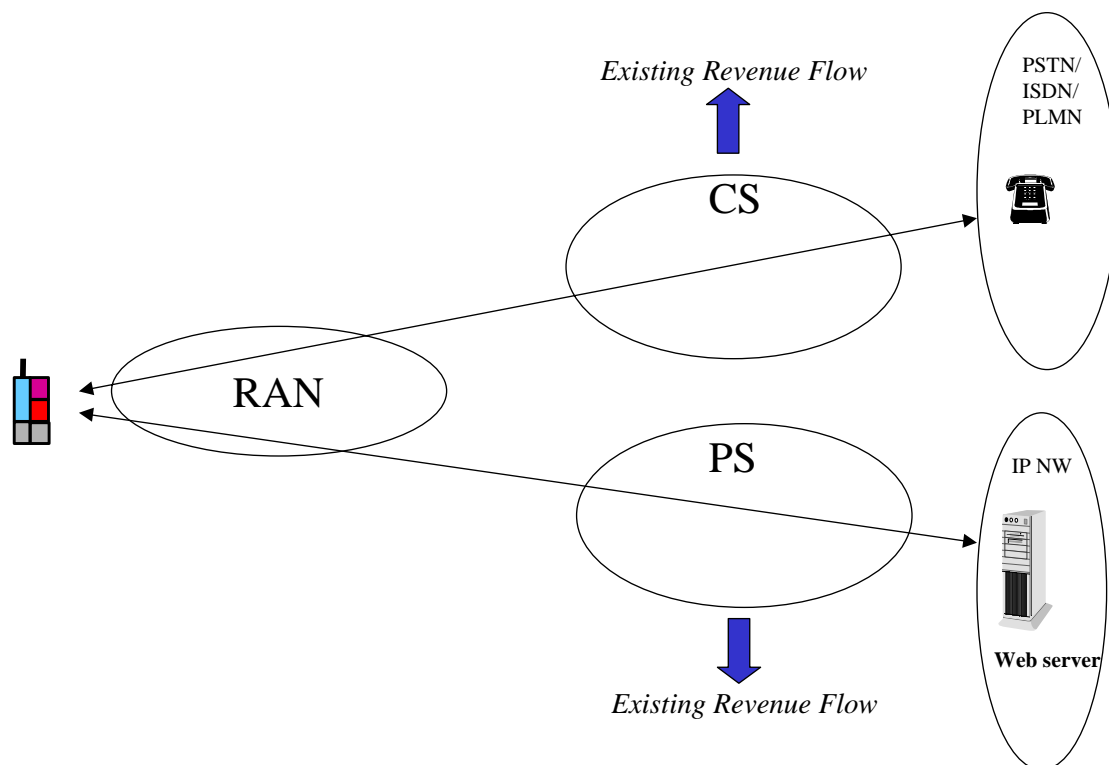


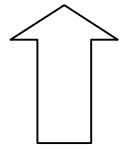
Figure 1

Figure 1 shows an end-user having multiple applications, one Telephony application and one web browser application. The end-user does not expect any association or synchronization between the applications.

The operator can get existing type of revenue (Telephony and www browsing are existing applications). The web server ISP may gain revenue as well.

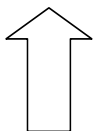
IP Multimedia Application – Audio and Video Example

Menu Bar

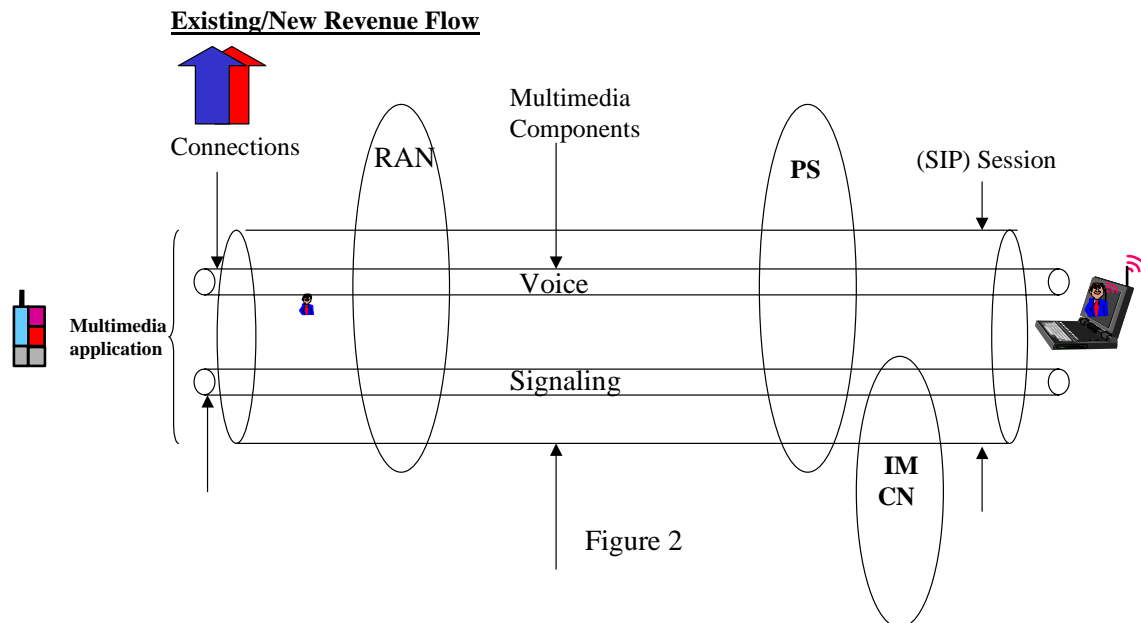


End-user presses the ‘3GMeeting’ Icon to start an IP multimedia application. New choices appear:

3GMeeting Menu Bar



The end-user presses the ‘Voice’ icon. Result is a voice conversation:





The end-user adds a video component to the voice conversation by pressing the '2wayVideo' icon. Result is a two-party videoconference.

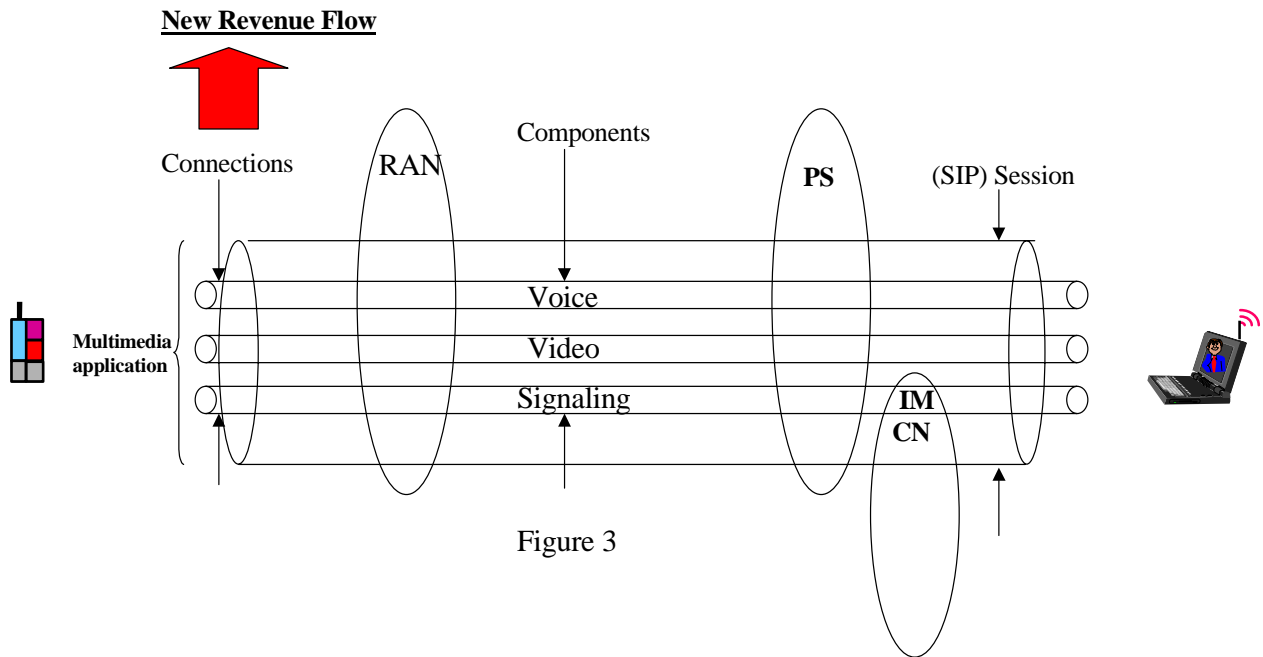


Figure 2 shows an end-user having a voice communication soon after having started '3GMeeting', a conversational IP multimedia application, on his mobile terminal. The remote end-user may be at a wireless or wire-line access. Although there is initially only a voice component, the end-user has higher expectations on this voice component than a standard telephony call. This is since he can add new multimedia components. Figure 3 shows a videoconference after end-user had added a video component from the menu bar.

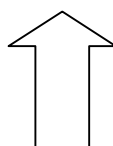
The end-user sees one IP multimedia application. But from system perspective there were first a SIP session, two multimedia components (voice and signaling) and two connections/bearers. After the end-user has added video, the system made a re-invitation of a new multimedia component into the existing SIP session. A new connection was added to carry the video component.

The operator can get new revenue flows from the connections over (PS) above and from the signaling data (IM CN).

Note: 3GPP R99 operators get revenue from 3G-324M video telephony between 3G-mobiles.

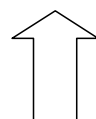
Multimedia Application- Chat Example

Menu Bar



The end-user presses the '3Gmeeting' icon to start an IP multimedia application. New choices appear:

3GMeeting Menu Bar



The end-user presses the 'CHAT' icon. Result is a text conversation.

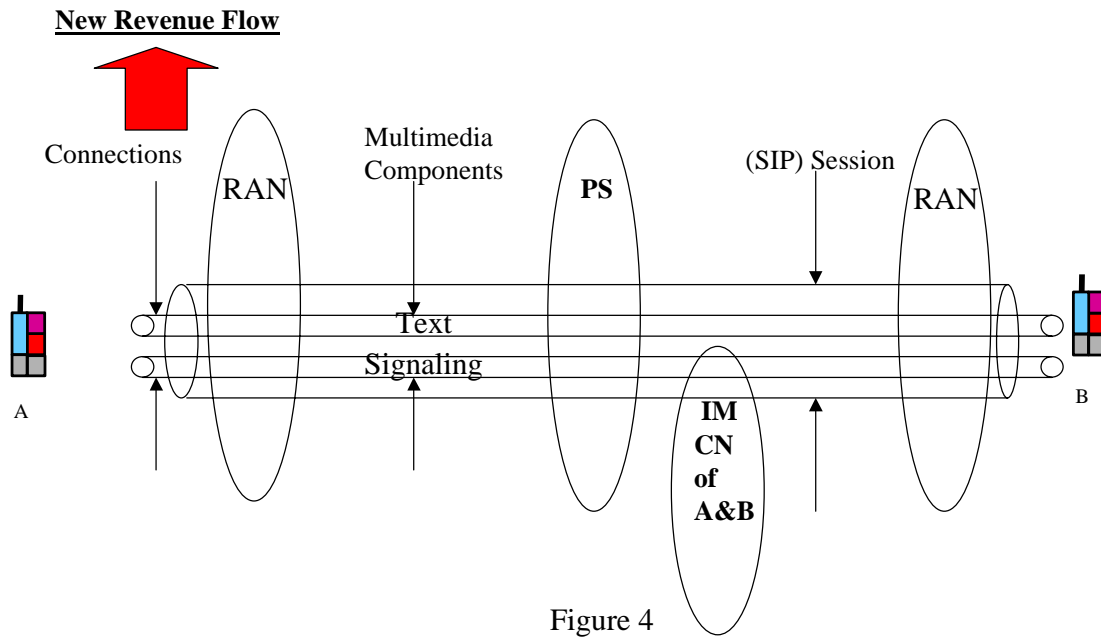


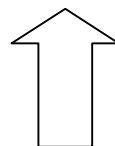
Figure 4 shows an end-user having started '3GMeeting', a conversational IP multimedia application, on his mobile terminal. The end-user selects a Text conversation function on the menu bar. Although the end-user can add new multimedia components, he chooses not to in this mobile-to-mobile example.

The end-user sees one multimedia application. But from system perspective there is a SIP session, two multimedia components (text and signaling) and two connections/bearers. The text payload is sent between the two mobile terminals without passing any network messaging entity at all.

The operator can get new revenue flow from the connections over (PS) and from the signaling data (IM CN).

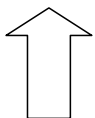
Multiple IP Multimedia Applications- Conversational and Streaming Example

Menu Bar

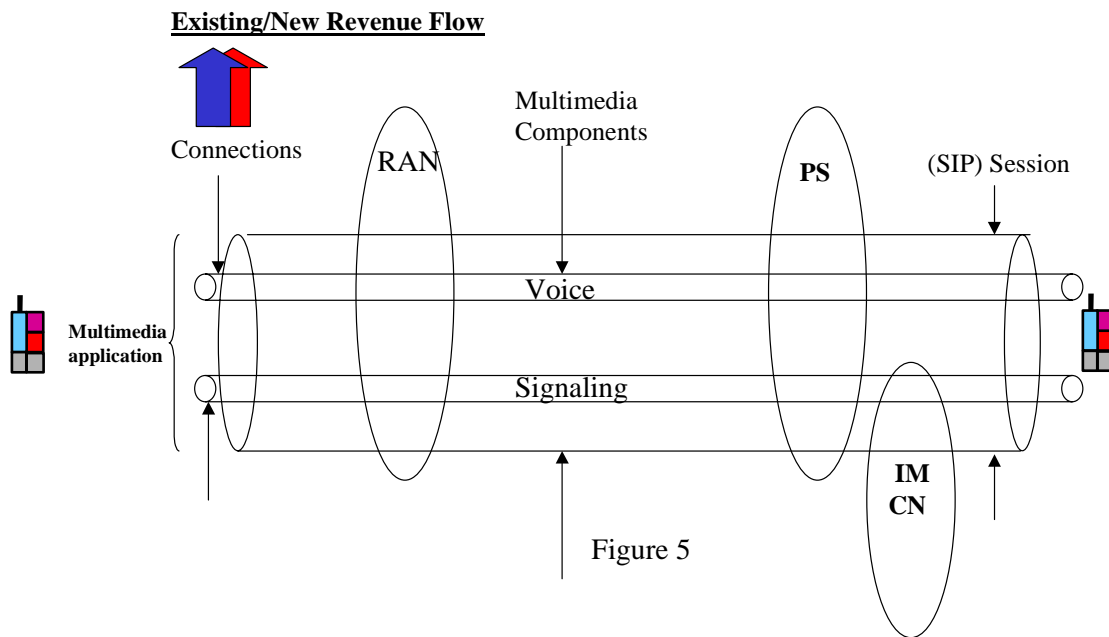


The end-user presses the '3GMeeting icon to start an IP multimedia application. New choices appear:

3GMeet Menu Bar



The end-user presses the 'Voice' icon. Result is a voice conversation:



The end-user presses the 'LINK' icon and selects an RTSP URL link to be sent to the remote end-user. The result is that both users view the same video sequence whilst they are talking:

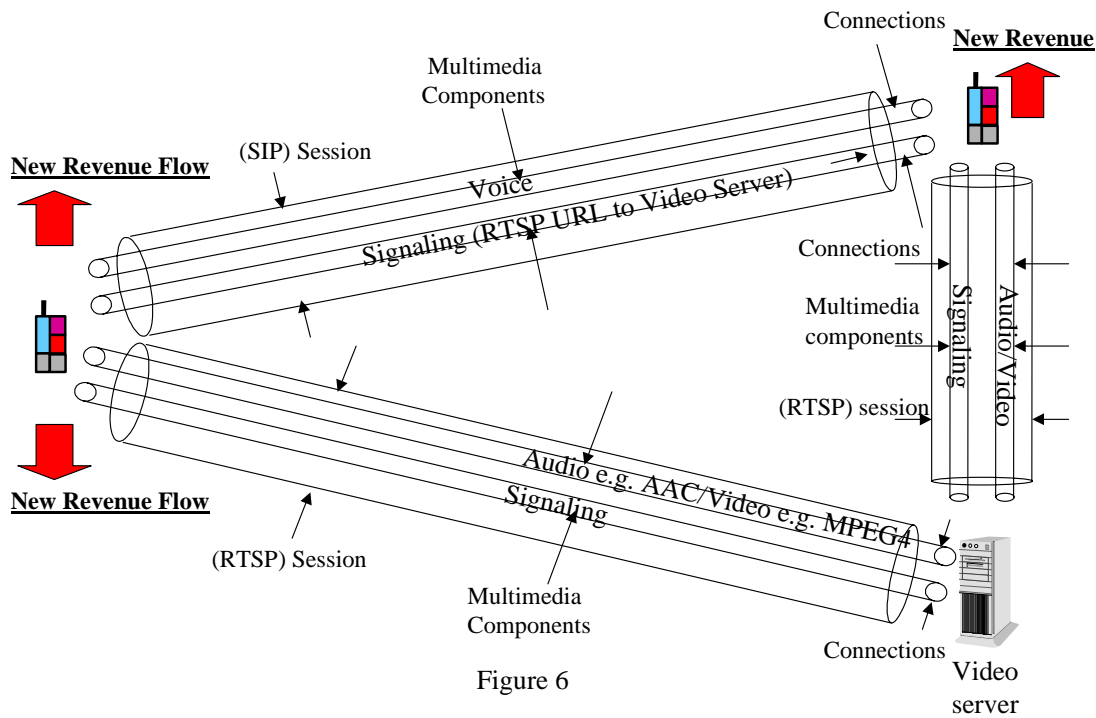


Figure 6

Figure 5 shows an end-user having started ‘3GMeeting’, a conversational IP multimedia application, on his mobile terminal. The end-user selects the voice function on the menu bar. During the voice conversation the end-user decides to send a RTSP (IETF Real-Time Streaming Protocol) URL to the remote party. The end-user’s terminal automatically starts the streaming video function behind the ‘Video Stream’ icon on the menu bar. The remote party’s terminal will also connect itself to the video server upon reception of the RTSP URL. The result is that both users are talking to each other and simultaneously are watching a short streaming video sequence, see figure 6.

The end-user perspective is one multimedia application. From a system point there are two sessions, one SIP session and one RTSP session, as per user. There are two multimedia components for the voice communication, and two for the streaming video.

The operator can get new revenue flows from the connections over (PS), from the signaling data (IM CN) and from the selected video object pointed out by the RTSP URL.

Telephony

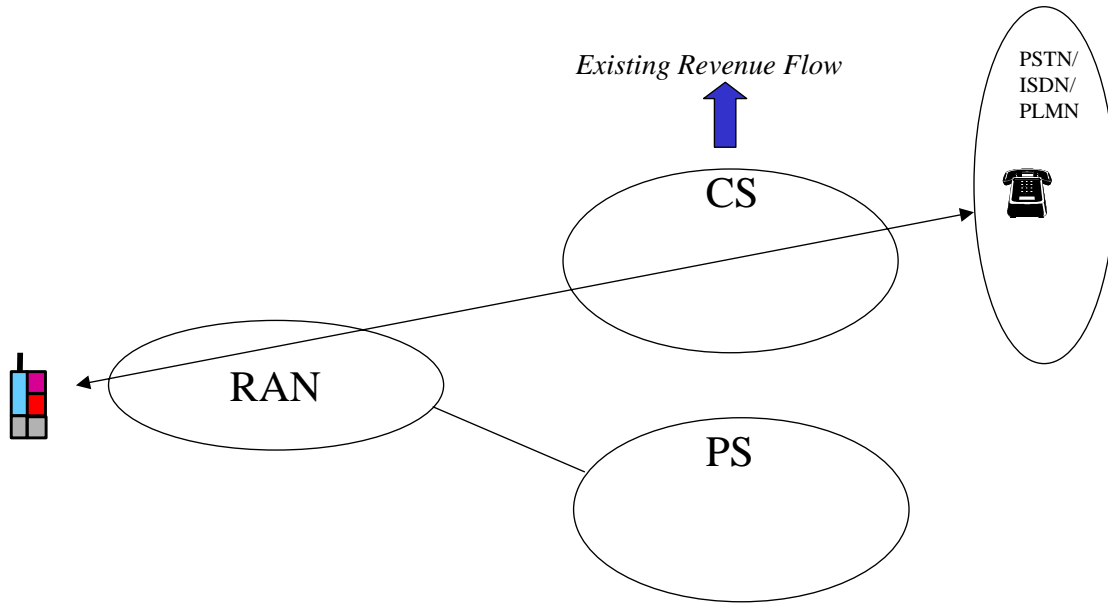


Figure 7

Figure 7 above shows an end-user having a Telephony application. It is set up over the All-IP CS domain (e.g. CS over IP). The operator gets existing type of revenue flow (Telephony is an existing application) from the connection over the CS domain.

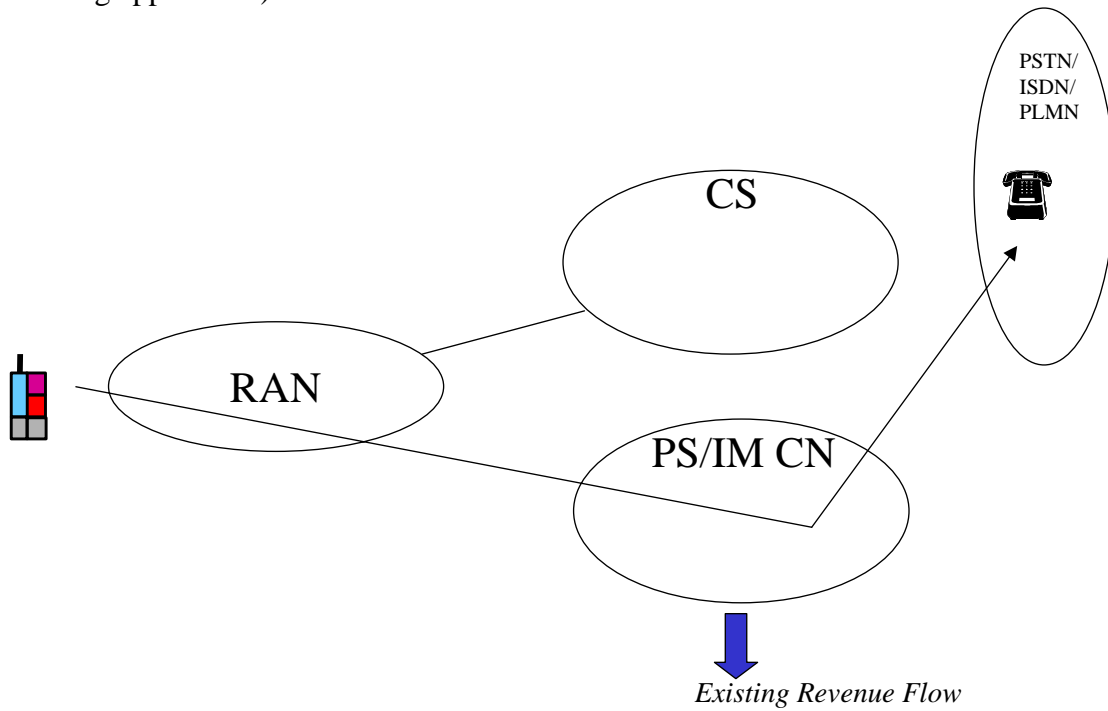


Figure 8

Figure 8 above shows an end-user having a Telephony application. It is set up over the All-IP PS/IM CN domain. The operator gets existing type of revenue flow (Telephony is an existing application) from the connection over the PS domain.

Summary

End-user perspective

- IP Multimedia Application

Can be a conversational or streaming type of application.

An example of an IP conversational type of multimedia application is the usage of multiple components e.g. voice and text or voice and video, which are associated by lip-synchronization. But the end-user can use the multimedia application for text only or audio to an end-user, e.g. during an initial phase of the communication.

An example of an IP streaming type of multimedia application, is where the end-user can order a 3-minute video-on-demand, e.g. MTV like music video with audio and video components.

- Multimedia Component(s)

Voice, Audio, video, text, image, are examples of components within an IP multimedia application.

- Multiple Applications

Applications which are different in nature, and where no association or synchronization are offered to, nor expected by the end-user. Examples are a Telephony application in parallel to a web browsing application or a conversational multimedia application in parallel to a streaming multimedia application.

-Telephony

A telephony application is one, which can never contain anything but voice component(s). Typically set up by means of circuit switched UNI and NNI protocols, but where transport can be packet switched.

System perspective

- Session

A conversational multimedia type of session contains components that are handled in real-time fashion over the network connections between both terminals of a session. One or several components (see definition above) can be part of the conversational session. Synchronization between some of the components e.g. video and voice, is done by both terminals locally.

A conversational multimedia type of session is typically set up using protocols such as the IETF SIP/SDP and the ITU-T H.323.

A streaming multimedia type of sessions contains components that are handled in real-time fashion over the network connections from the streaming server to the terminal. One or several components can be part of the streaming session. Synchronization between some of the components e.g. video and audio is possible by the receiving terminal.

The streaming multimedia type of session is typically set up by the IETF RTSP protocol with SDP as the component(s) format description.

A HTTP session is yet another session example. It is typically set up by the terminal and network when an end-user is using the web browsing application. Such session contains content such as a digital still image.

- Connection

A packet bearer/connection that transfers one or several component(s).

Operator perspective

The operator gets new revenue flows from the IP multimedia applications enabled by the IM CN sub-domain as complementary to the applications of the existing domains. This is due to all the new traffic generated by the enriched flora of media combinations that the new IM CN sub-domain enables. Existing revenue continues to flow as generated by the existing traffic, such as Telephony, web surfing, 3G-324M, Multimedia Messaging etc.