

IP-Based Multimedia Services:

The UMTS Forum's View of a Common Service Concept

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UMTS Forum 2002 charter

Mission

The UMTS Forum is an open, independent body for promoting the *global uptake of third generation (3G) mobile systems and services.*

Scope

Technologically neutral, the UMTS Forum recognises the importance of all players - including new entrants - in the 3G value chain. As well as offering guidance to governmental and financial communities it also advises on technical *standardization requirements*. The UMTS Forum serves the interests of its members through educational and promotional activities in its role as the *voice of the 3G mobile market.*

As Market Representation Partner, advising the technical community, the Forum will continue to guide the industry on 3G service requirements, user expectations and market opportunities.

Recent market studies

The UMTS Forum has recently published a series of reports to forecast worldwide 3G market demand and operator-retained service revenues.

- ▶ **\$320 billion** worldwide revenues in 2010
- ▶ Cumulative revenues of almost **\$1 trillion** from launch until 2010
- ▶ In 2010 the average 3G subscriber will spend about **\$30** per month on 3G data services
- ▶ Non-voice service revenues will dominate voice revenues by year 3 and comprise **66%** of 3G service revenues by 2010
- ▶ Recent economic downturn and market turmoil following September 11 will have only short term implications on 3G revenues.

IP-based multimedia services

The UMTS Forum proposes a *single service concept* to provide *customers worldwide* with a unified set of multimedia services, irrespective of access technology and location.

This service concept is based on:

- ▶ the integration of *mobile communications and Internet technologies* which will bring the power and richness of Internet services to the mobile environment and
- ▶ the *interoperability between fixed and mobile networks* which will allow users to experience *seamless converged services*.

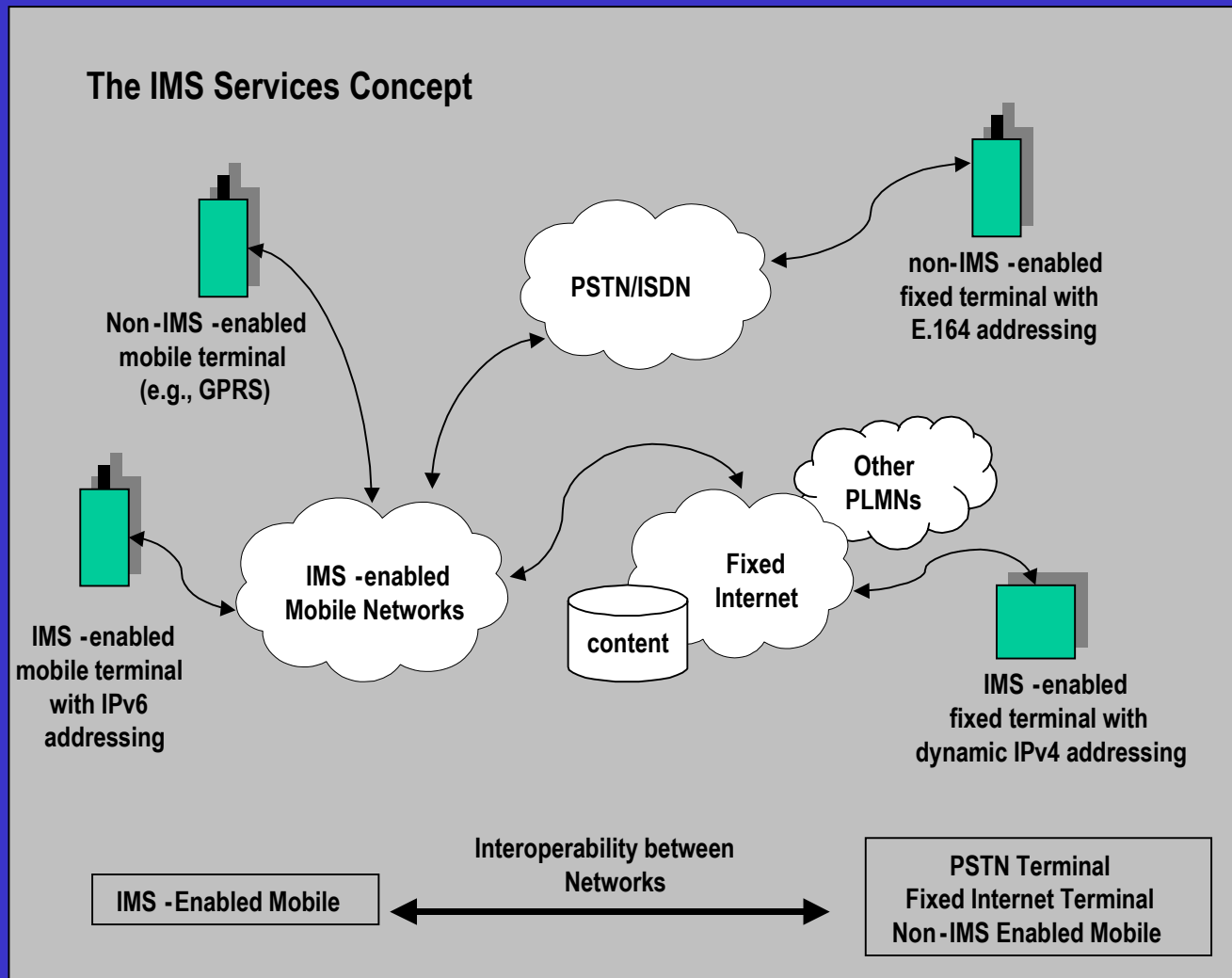
IP-based multimedia services (2)

This service concept will:

- ▶ deliver IP-based, real-time, person-to-person, multimedia communications (including voice)
- ▶ fully integrate real-time, person-to-person with non real-time, person-to-machine multimedia communications,
- ▶ provide the ability for different services and applications to interact, and
- ▶ allow the user to set up very easily multiple services in a single session or multiple simultaneous synchronised sessions.

The IP Multimedia Subsystem (IMS) and its equivalent in 3GPP2 are elements of 3G technology which will deliver this service concept to our customers

The IMS services concept



Key IMS features

Features	Comments
Real-time, person-to-person, multimedia	IMS will have the ability to deliver enhanced speech telephony services (including videophone) using packet technology
Real-time and non real-time services interaction	IMS allows for interaction of real-time and non real-time services within a single session (call)
Multimedia call model	IMS allows simultaneous use of: <ul style="list-style-type: none">▶ Multiple multimedia services within a single session▶ Multiple sessions between multiple users and devices The user perceives this as service integration
Network interoperability	IMS includes the ability for real-time, person-to-person communications, including exchanging presence and location information, with other IP networks.

Operator advantages

Network deployment and operations

- ▶ **Standards-based implementation enables interoperability between mobile and other IP networks**
- ▶ **Standard network elements (e.g. routers) can reduce infrastructure costs.**

Service creation

- ▶ **Faster, cost effective, scalable**
- ▶ **Increased service innovation, by leveraging experienced IP-based development communities**
 - ▶ **Standard service development tools.**

Competitive advantage

- ▶ **Ability to create customized services can enhance service differentiation.**

Mobile Videophone service

AT&T's prototype Picturephone dates back to the 1920s. More recent consumer interest in video technology has fostered the introduction and growth of video services.

- ▶ Instant messaging “video chat” services (often available at no charge on the Internet) using Web cameras
- ▶ Mobile videophone services for both real-time and streaming video

The addition of **mobility** and **presence** to the videophone concept has renewed market hopes for a commercially viable consumer service.

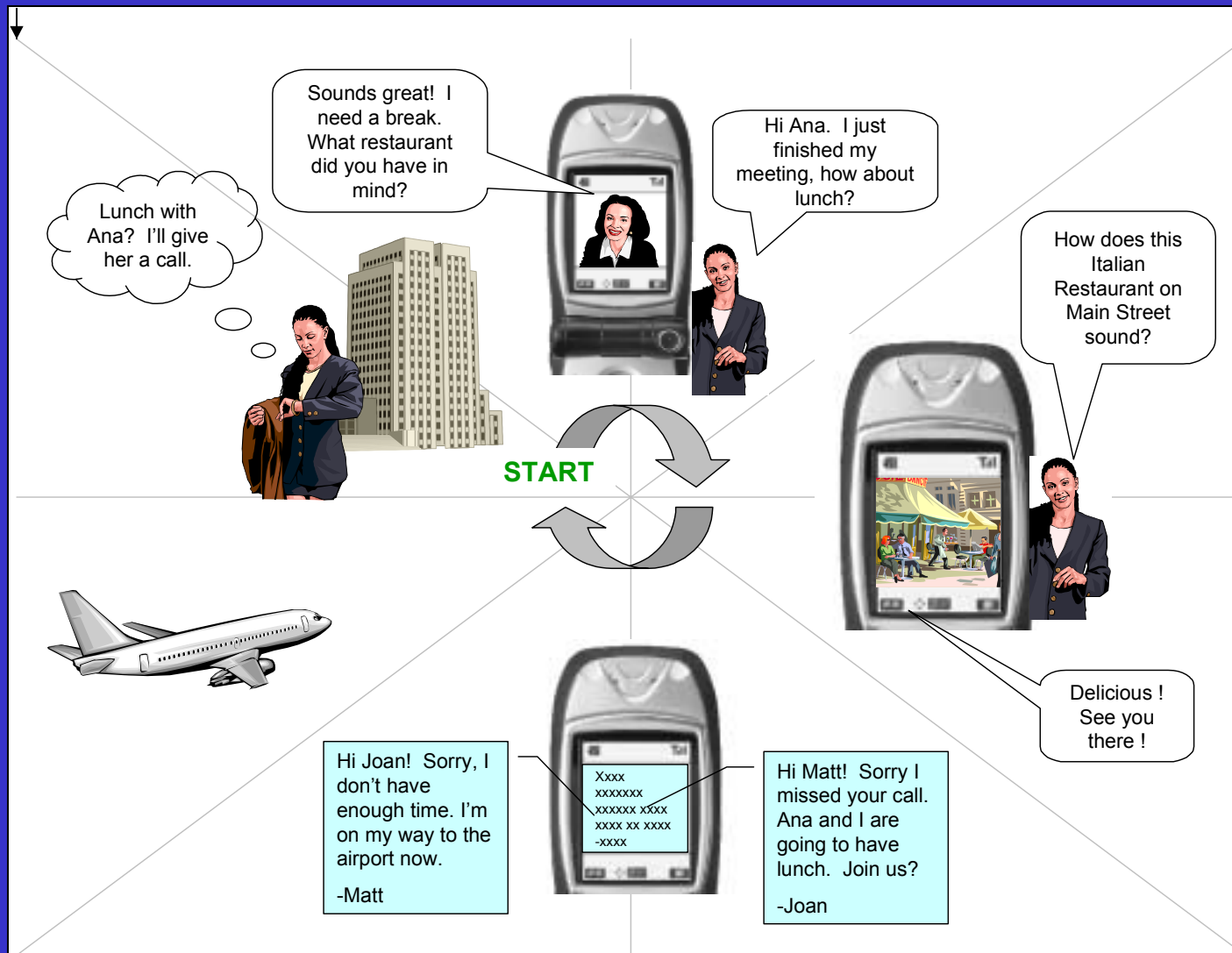
Benefits of mobility and presence

Benefits of mobility	Description
Further field of vision	Since the camera is mobile, it can be pointed wherever the user desires
Expanded use in time and place	Mobile Videophone Service would be accessible from any place within the mobile operator service area
Benefits of presence	Description
Increased control	Presence allows the called parties to decide when and how they will accept a video call.

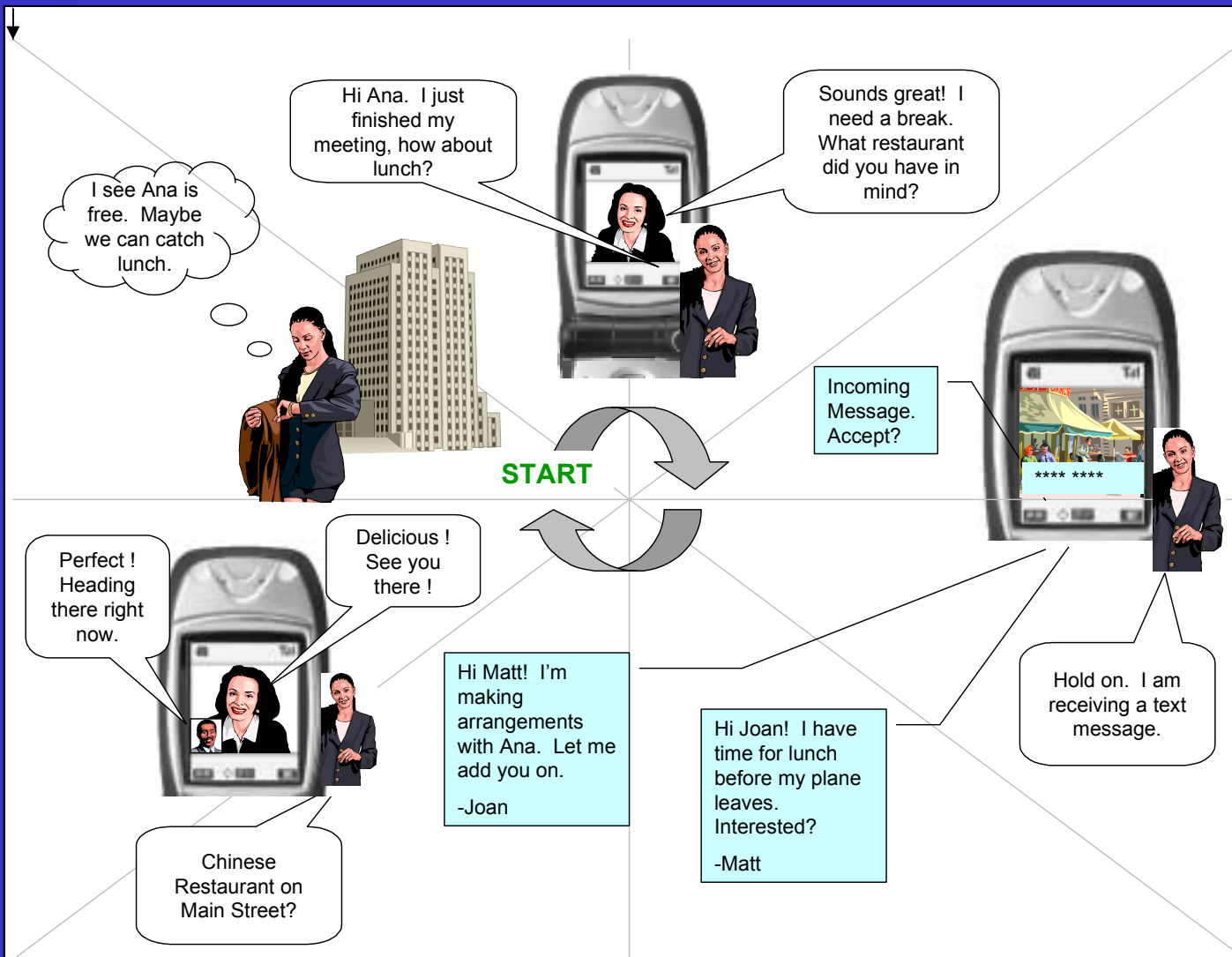
Additional benefits of IMS

Benefits	Description
Further expanded use in time and place	With IMS the service would be accessible from any place within the mobile operator service area and to other networks. In addition, it is possible to exchange media elements between mobile and fixed Internet environments.
Increased interpersonal connection through terminal interoperability and integration of services	The use of SIP and other existing Internet and video standards will enable increased interoperability between different terminal types. Greater integration of services creates a more natural personal experience.
Guaranteed call completion	Call completion does not depend on the called party having a compatible terminal. Calls can be accepted without the video component, or the video component can be routed to a different destination.

Mobile Videophone service (without IMS): user experience



Mobile Videophone service (with IMS): user experience



Deployment aspects

Operator decisions regarding the introduction of new IMS technology must consider the following points:

- ▶ **business plans,**
- ▶ **availability of similar capabilities in fixed networks and in the Internet,**
- ▶ **impact of delaying deployment (or partial deployment) on the take-up of 3G services and**
- ▶ **competitive positioning.**

Key IMS technology enablers

Requirements	Enablers
Ease of introducing new services	Separation of control and user planes New standard toolkits
VoIP QoS	RSVP, MPLS
VoIP interworking with PSTN	Gateways, softswitches
Billing, security, privacy, authentication, roaming, handover, etc	Specifications for the mobile environment are being developed in 3GPP and IETF (e.g. SIP extensions and the ISIM)

Key IMS technology enablers (2)

Requirements	Enablers
Mobile terminals	SIP protocol stack High resolution displays New compact browsers Pointing devices Voice recognition More memory
Multimedia call control	SIP server

Challenges

IMS reduces barriers to entry. IMS services can be delivered via alternative IMT-2000 RAN technologies, wireless LAN, fixed or private networks.

- ▶ **Is it in operators' interest to enable access via privately owned or competitor owned LANs?**

Powerful browsers might not be available for small handheld devices for a few years

- ▶ **Should certain minimum terminal capabilities for IMS be specified to ensure full enjoyment of services by the users?**

The full benefits of IMS depend on the capabilities of all intervening networks

- ▶ **Should there be an effort by the industry for a concerted roll out of IMS, so that person-to-person IMS sessions can be provided to customers who are in different PLMNs or in fixed networks?**

Conclusions

As it continues to guide the industry on 3G service requirements, user expectations and market opportunities, the UMTS Forum is proposing a *single service concept* for IP-based multimedia services.

- ▶ **This single service concept will be essential for the creation, availability and uptake of *new compelling services worldwide*.**
- ▶ **This single service concept and the benefits it brings end-users will be essential for achieving \$320 billion revenues in 2010.**

For more details, please consult the latest UMTS Forum reports on the Forum Web site

www.umts-forum.org