0.1 EXECUTIVE SUMMARY

0.1.1 Background

This report seeks to describe UMTS, conceived as a mobile multimedia system, in the context of the future developments in telecommunications, information technology (IT) and media, which together will combine to deliver the Information Society. Today's concept of separate mobile and fixed telecommunications networks is not sufficient to explain the realities of tomorrow's business environment. A clear focus should be kept on the potential of UMTS to embrace new technologies, concepts and services. Elements of this vision are:

- The gradual convergence of telecommunications, IT and media, working to bring about global opportunities for businesses and consumers, while creating new ways of doing business, entertaining and informing.

- New ways for individual users to manage and control vast amounts of information from many diverse sources in order to fulfil their own objectives and interests. This will represent a very large and new personalised market that cannot be satisfied using existing concepts of service provision.

- New entities in the future converged market, such as content providers, Internet service providers, and virtual mobile network operators, will emerge as means of delivering information to the users in the market. Many services are likely to emerge from today's Internet but will be able to cover subscription as well as non-subscription services. Such services will also extend to cover corporate Intranets where information is managed and delivered to closed user groups on an organisational or interest basis.

- Personalised mobile multimedia services that will become commonplace in the future service offerings.

- A trading revolution that is taking place on the Internet as businesses form electronic communities to streamline their supply chains and procurement procedures. There will be "e-marketplaces" for industries as well as specialised sectors. On line trade will drive mobile commerce. The development of mobile, Internet-based electronic payment will enable this business.

0.1.2 New Players in a Changing Value Chain

This report analyses the elements of the value chain in order to allow the UMTS industry and regulators to better understand the evolution in the mobile multimedia services market over the next ten years. At present, the mobile network value chain is centred around the network operator who captures more than 90 per cent of market revenues, dominated by income from voice-based services. It is widely recognised, however, that advancing technology, growth of Internet services and new end-user demands are challenging this traditional value chain.

The new, fast changing value chain will have new players and entities, and many network operators are already adopting new business strategies to broaden their role and to defend their competitive position. The multimedia service provider will be one of the key players in the multimedia value chain. Revenues will increasingly be diverted to other market players than the traditional.

0.1.3 New Advanced Services

The new business opportunities with UMTS are adding new market segments to the existing and traditional telecommunications market. UMTS will offer new opportunities for service provision, such as

- fast mobile multimedia capabilities,
- location,
- service portability,
- personalised and ubiquitous communication capabilities

The question arises which services will result from UMTS. A single “killer” application clearly does not and will not exist. Many services, although they may start with 2G will become more affordable using 3G. Services that already exist will be greatly improved with location, interactivity and mobile multimedia, with customer segmentation based on lifestyle management. The demand for increased personal productivity will also be of importance. The blurring of boundaries between business and consumer markets, and between work and home, will continue.

0.1.4 Mobile Multimedia Portals

The convergence point for supply of information and entertainment, and the demand from the end users, will be the Mobile Multimedia Portal. As the end-user's preferred point of entry into all IP-based services and content, the portal is where the customer interacts with the entity that provides the services. The portal presents a huge market opportunity for strong customer relationships that are essential to competitive success in the new Internet-enabled environment.

Whereas traditional fixed portals are designed to provide a mechanism to organise information delivery to specific market segments, the mobile portal will be oriented towards individual users to reflect their needs of secure and robust access in changing locations and circumstances. Using an intelligent IP-access platform with dynamic service-selection capabilities, the portal owner can provide personalised location-dependent services that are tailored to the mobile users' individual requirements and choices. This type of personalised portal allows the customer to select, subscribe to and configure all type of services.

The Mobile Multimedia Portal is not restricted, as the traditional portal, to the Internet itself. Instead, it operates on a higher level in the control chain, providing access to and selection of all IP-based services, including, of course, the World Wide Web. Other services, which will be managed by the portal, come from audio and TV-media providers, application service providers (ASP), yellow pages, advertising companies and from the portal owner itself. For the customer the portal will be a personalised home page, which has the potential to greatly reduce customer churn. Partnering with organisations having an established brand can help the portal owner to deliver value-added services under its own brand to the customers.

0.1.5 Standardisation

The wireless access has already introduced a new set of standards and protocols that add a layer of complication to applications not necessarily compatible with the Internet world. For UMTS these standards have to be supplemented for those services that will be offered also on the wireline network. Also the harmonisation of the terminal interworking characteristics between wireless and wireline terminals may be a standardisation issue. The standardisation furthermore has to specify impacts regarding addressing, which is quite different in telecommmunications and the IP world.

The harmonisation of the UMTS standards in the IMT-2000 framework with the standards on the Internet side is necessary to make the Mobile Multimedia Portal a workable solution in an international networking environment, especially for the roaming user. The role of the UMTS Forum is to widen the scope in the standardisation and to convert its views into requirements and work items.

0.1.6 Regulation in a Convergent Environment

At present, in most countries of the world, the telecommunications, broadcasting and IT sectors (i. e. vertically independent sectors) are regulated separately. In a converged environment the question arises whether this approach is well suited to foster competition, innovation, consumer interests and the provision of services. A more horizontal approach seems to be more suitable whereby all sectors have the same infrastructure regulation, which is technology and sector neutral and relying upon competition law, to prevent parties abusing their dominant position in provision of services.

Wherever regulation is in place, it must be applied in a workable and timely manner. The global nature of IMT-2000/UMTS combined with sector convergence points to potential difficulties of enforcing the rules of one country in other countries. Furthermore the rapid pace of change in terms of services and products, measured in months and weeks, presents a real challenge for anyone seeking a legislative solution to any particular problem.

Pragmatic international solutions need to be sought.

0.1.7 New Business Strategies

When discussing potential business relationships in the converged market, various models can be considered, comprising the roles of i.a. the Network Operator, the Internet Service Provider, the Portal Operator and the Content Provider.

- ***The fragmented model***, in which the business roles are kept by separate market players. The task of offering the end-user a coherent service package and simple commercial interfaces may be difficult to fulfil.

- ***The partnership model***, in which the market players having the main roles mentioned above are co-operating in an organised way. Competition issues will be important in this model.

- ***The ownership model***, in which the main roles are owned by one organisation. The responsibility for providing end-user services will be clear, but sufficient competition has to be maintained. This model has to allow additional partnership and/or additional service offerings from independent providers, e. g. end-user access to other portals and other content providers.

There are two major groups interested in Mobile Multimedia Portals: those who provide network access, i. e. network operators, and those who execute transactions. For both groups, the same factors – reach, richness and affiliation - are important when it comes to marketing the Portal. Network operators can be very strong in at least two of these dimensions – reach and affiliation – and are therefore well positioned in the portal industry. The third dimension – richness – has then to be covered by alliances with content aggregators.

The traditional elements that were billed in the world of telecommunications become irrelevant. Time dependent billing on the network is already fading and will disappear quickly as customers get used to the idea that connections are ‘always on’. Distance will disappear quickly, too – IP addresses are always local.
The billing will be based on availability, data type or volume. The key to an efficient billing process will be flexibility.

The real opportunity for service providers will be to take their place in the value chain of m-commerce, and in return for billing and supporting the customers receive a percentage of revenues of the products and services bought. In addition, there is the opportunity to act as a wholesale agent for content providers.
There will not be one business model but a number of different unique models. As the value chain evolves and gets more complicated, many new players are expected to materialise, such as Information Brokers, Information Integrators and Application Developers.

0.1.8 Conclusions

UMTS is much more than Internet or wireless communications. The vision of UMTS is a heterogeneous network environment with fast changes of concepts and businesses, where various organisations play different roles in the value chain. Mobile operators are well positioned to exploit the many new opportunities afforded by the introduction of 3G mobile multimedia services from 2001/2002, but a host of new players in the market will compete for the customers.

UMTS will continue to develop and add value, enabling players to grow their Mobile Multimedia businesses to 2010 and beyond. New opportunities for service providers and content providers to generate value will be created, by intensified support for personalisation, location, interactivity, the operational and transacting environment, and m-commerce. The Mobile Multimedia Portal will be one key element in the interface towards the customers, which will give its owner a competitive advantage in the new converged market.

0.1.9 Recommendations

Rec #	**Recommendation**	**Reference Section**
1	The UMTS Operator should take up the new business opportunities via partnering with ISP, Portal Content Providers or consider them in one ownership.	7.
2	Operators have the opportunity to move up the value chain: • In a stepwise approach towards "All IP" transport and switching, following 3GPP Rel. 99, Rel. 00 and further Releases towards HTML-DHTML-XML transparent solutions. • By accessing content via a ***Mobile Multimedia Portal Platform***.	5.
3	Harmonised timely introduction of "*service portability*" in conjunction with a Mobile Multimedia Portal platform will enable personalised content management. Functional blocks of the Mobile Multimedia Portal platform and its phased introduction should follow a harmonised milestone plan.	4.3.1 4.2.1 (3.1)
4	Early clarification of address reservation and structuring is vital to the success of UMTS/IMT-2000. Timely advanced planning of Internet Domain Names, IP-addresses and E.164 addresses is of importance for the industry in order to ensure an early clarification of address reservation and structuring.	4.6
5	Any regulation should be kept to the minimum necessary to achieve the desired effect. International solutions to regulatory problems should be sought. The regulatory framework should allow public service broadcasters and programme makers to take advantage of the new opportunities offered by the technological convergence in a commercial framework and in competition with other market players. However, such commercial activities must be kept strictly separated from state-subsidised activities.	6.3
6	Individuals should be allowed to carry IMT-2000/UMTS mobile terminals with them all around the world without any restrictions when crossing borders, such as customs duties or individual	6.6.1

	licences, and to use them, subject to normal connection requirements. Such mobile terminals shall of course comply with internationally accepted rules concerning interference, health and safety.	
7	3GPP should take up investigations and define UMTS solutions for • IPv4/v6 co-existence and integration with IPv6 • QoS control, applications-dependent • IP-security combined with USIM • Mobility management/roaming for information services (IP-based).	5.1
8	All players should work to achieve global acceptance of the principle of Suppliers Declaration of Conformance to mutually agreed requirements. This will simplify the placing on the market of future multi-mode terminals.	6.6.3