

1. Executive Summary

The next decade will see the emergence of 3G networks to fully realise mobile multimedia services. Enabling anytime, anyplace connectivity to the Internet is just one of the opportunities for 3G networks. 3G brings more than just mobility to the Internet. The major market opportunity builds on the unique characteristics of mobile to provide group messaging, location-based services, personalised information, and entertainment experiences. Many new 3G services will not be Internet-based—they will be truly unique mobility services.

Data will increasingly dominate the traffic flows. Pent-up latent demand for mobile data services will jump start 3G networks since there are more and more mobile users—over a quarter of a million *every single day*. By 2005, more data than voice will flow over mobile networks. This is an amazing statistic considering that mobile cellular networks today are almost exclusively voice.

Mobile subscribers will benefit from the always-on characteristic of 3G. Successful 3G services providers will navigate around the discontinuities that this new always-on mobile data environment creates. Many data services are possible and services providers with experience in marketing and billing bundled services will have an advantage.

This study highlights four areas of change for services providers²:

- Business Models
- Industry Structure
- Revenue Models
- Market Strategy

This report presents a compelling framework for categorising and studying the majority of near-term 3G services. This framework, introduced in Section 2.5, is the basis for the structure of the analysis and forecasts. The data services are subdivided into content connectivity and mobility, then further subdivided to create the following six services:

- Customised Infotainment
- Multimedia Messaging Service
- Mobile Intranet/Extranet Access
- Mobile Internet Access
- Location-based Services
- Rich Voice

Service diagrams and business models are then added to the framework to provide a complete picture.

²The term “services providers” is introduced to indicate the changed role of the mobile operator in the 3G world.

This study presents worldwide forecasts for 3G services that are consistent with the EU15 multimedia subscriber forecasts published in Report 8 from the UMTS Forum. Existing forecasts of worldwide mobile subscribers and 3G substitution rates are used to determine the growth of 3G subscribers worldwide until 2010. Adoption rates are then applied to the 3G subscribers to determine worldwide service subscriptions.

These 3G service subscriptions are then allocated amongst 195 countries world-wide according to country-level demographics, existing mobile penetration rates, anticipated 3G commercialisation schedules and other economic and regulatory factors. At the service and country level the forecast subscription numbers are also determined by propensity-to-buy considerations and population projections by age, occupation and industry. Addition of average pricing assumptions then allows service revenues to be forecast at a country level. The resulting country-level subscription numbers are the target market for the six 3G service categories introduced in this report.

Plausible pricing and adoption assumptions based on current pricing of analogous services existing today have been used throughout this study. This approach establishes an average price level for services based on known willingness to pay. It does not presume a pricing structure and so allows services providers flexibility in managing capacity.

The result is a conservative forecast that gives 3G services providers a benchmark from which to develop future marketing strategies. The forecasts demonstrate that significant revenue flows are realistically achievable from 3G services.

Three of the six 3G services are forecast in this report. Significant market potential exists for 3G services, although successful players may include only a select few in their product portfolio. The three forecasted services (Customised Infotainment, Mobile Intranet/Extranet Access, and Multimedia Messaging Service) were chosen because they encompass a variety of target markets and business models.

These service forecasts predict a Compound Annual Growth Rate (CAGR) of over 100 per cent growth during the forecast period, with total revenues for the three forecasted services of over \$164B³ by 2010. This partial forecast is impressive when compared to current worldwide totals for ALL mobile cellular service of about \$270B.⁴

Many high-potential 3G markets will be launched by 2004, with Japan, Finland, Spain and the UK leading the way in 2001. Regional differences highlighted in the study will dictate the rate of growth in each region. Both

³ All financial data in this report are presented in nominal US dollars.

⁴ Telecompetition Inc. estimate based on average worldwide ARPU (Average Revenue per User) of \$35 per month per subscriber.

geographic regions and economic regions are presented. Critical factors for success will be international roaming capabilities, device availability, and network deployment costs.

While this study only addresses 2000-2010 and the mere infancy of 3G, high growth is expected beyond 2010. At that time, developing countries will accelerate deployment of 3G to realise the potential for accelerating national development and closing the information gap with the developed world. The potential number of new subscriptions is staggering with over six billion people on the planet and the opportunity for multiple service subscriptions per person. The advent of company-wide corporate services also holds promise. Historically, mobile service for business has always been sold on an individual basis. This will change with the advent of Mobile Intranet/Extranet Access and other 3G services. 3G services provider shareholder value promises to be enhanced by these developments—if the barriers and challenges identified in this report are addressed successfully.

Some key implications and conclusions of this study are listed below. Details of the discussion can be found in the report where these key messages are highlighted.

- The continued use of mobile penetration rates and Average Revenue per User (ARPU) as performance indicators for the future 3G environment has to be questioned
- The importance of local content in the mobile portal environment cannot be overstated. Content should be appropriate to the local culture and in the local language
- Realistic positioning of the “mobile Internet” should be a priority for 3G services providers
- Mobile portals are an additional opportunity for mobile services providers
- Service portability between services providers will be necessary for location-based services to be offered globally
- The market expectations of Internet users tomorrow will be much higher than their expectations today
- Positioning 3G as the “mobile Internet” sends the wrong message to the market and paints an incomplete picture of 3G service potential
- Of the three services forecasted in this report, Customised Infotainment is forecast to produce the highest revenues during 2000-2010 primarily due to its low cost and mass market appeal
- 3G represents a significant revenue opportunity for services providers, infrastructure and device manufacturers, applications developers, content providers, etc.
- Asia Pacific and Europe will dominate other geographic regions during 2000-2010
- The US will continue to lag in the 3G market due to its lack of 3G spectrum and fragmented approach to the market

- Mobile services providers must effectively manage a sophisticated portfolio of services and target segments, continually developing new services, improve existing ones, and targeting high-value customers
- The UMTS Forum strongly recommends that deployment of 3G networks in developing countries occurs sooner rather than later to meet ITU objectives
- Today there are four device types that will evolve into a multi-purpose 3G Multimedia Device in 2005. Each of these four devices will also continue to be available resulting in five device types by 2005.
- Wide coverage for data services is a particularly important requirement in the marketplace that will be intolerant of any significant service degradation suffered when moving out of 3G coverage.

Section 2 follows and develops the study framework and puts it into an industry perspective. Section 3 explores the industry dynamics that drive revenue and subscription forecasts. Section 4 details each of the services and provides a framework-consistent diagram for each of the six. Section 5 contains details about the forecast assumptions and inputs as well as the forecasts themselves. Finally, Sections 6 and 7 provides key technology and business issues affecting 3G service demand. Conclusions regarding the framework and future potential are discussed in the final section. Appendices provide further forecast methodology and country-level detail.