The trillion dollar revenue opportunity of UMTS

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3G on rocky ground?
The reality… a gloomy economy and harder times still for mobile industry

- **Operators:**
  - Big investments in licensing
  - Will terminals arrive in time, and in quantity?

- **Manufacturers:**
  - Job cuts, lower expectations

- **Consumers:**
  - Do they want mobile data services after a poor early experience with WAP over GSM?
But there are good news!

- Japan launch of FOMA the 1 October
- Successful 3G trials in many countries
- Major vendors is committed to introducing terminals from Q3 2002
- WAP v.2 evolving to suit 3G needs
The 3G Market study

- 3G Market Study (Report #13) updated to reflect latest changes in outlook
- Changes in the rate of uptake of services
- Small changes in long-term figures
- Small changes in total revenue opportunities
Changes in revenues

3G revenue in mill. $

Old forecast  New Forecast

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Key assumptions

• **Growth in 3G subscribers** estimated from existing forecasts for worldwide mobile subscribers and 3G substitution rates

• **Worldwide service subscriptions** determined using adoption rates by service, applied to 3G subscribers

• **Service revenue forecasts** determined using known willingness-to-pay for analog services
Key assumptions continued

- No additional operator-retained revenue included for those services and applications users will expect as part of their future service package

- Average worldwide pricing assumed

- Significant price declines assumed over the forecast period for each service

- Country level service demand determined considering current mobile penetration levels and other economic, social and regulatory factors
Services framework

INFORMATION AND CONTENT (Non-Voice)

CONTENT CONNECTIVITY (Internet)

Mobile Internet Access
Mobile Intranet/Extranet Access
Customised Infotainment
Multimedia Messaging Service

PERSONAL
Direct Link to a Person

PEOPLE CONNECTIVITY
Always on, IP-based

MOBILITY

LOCATION
Knowledge of Location

VOICE
Rich Voice and Simple Voice

Source: Telecompetition, Inc August 2000
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3G user needs

- Demand will be driven by the following user needs:
  - Anywhere, anytime access to information
  - Access to corporate networks from any device
  - Access to all messages (voice, email, multimedia, fax) from any single device
  - Video and Web conferencing
  - Access to specific types of information (financial, recreational)
  - Social contact (community of interests)
  - Access to location-based information on demand
Impact of 3G share on ARPU levels

Source: Telecompetition Inc., February 2001
Is ARPU a useful tool in the 3G market?

The use of ARPU, mobile penetration rates and subscriber numbers as performance indicators for 3G has to be treated with caution:

- In a 3G environment, not all subscribers will take a subscription for all services.
- High subscriber numbers without an underlying revenue stream do not guarantee a sustainable long-term business.
Incremental Revenues
Per 3G subscriber- by service
(excludes simple voice)

Source: Telecompetition Inc., February 2001

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Long-term revenue growth till 2010

Worldwide Service Revenues ($M)

- Simple Voice
- Rich Voice
- Location-Based Services
- Business MMS
- Mobile Internet Access
- Consumer MMS
- Mobile Intranet/Extranet Access
- Customised Infotainment

Source: Telecompetition Inc., August 2001

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Long-term revenue opportunities for operators

- Customized Infotainment will be the largest revenue opportunity for the consumer segment
- Mobile Intranet/Extranet Access is the largest revenue opportunity for the corporate sector
- Multimedia Messaging Service is the second largest revenue opportunity for the business sector:
  - Managed corporate services will serve to retain customers, but will not be a significant revenue stream
  - Location-based services may not be a significant revenue opportunity for operators
Long-term revenue opportunities for operators

- For business and consumers, **Simple voice** will remain a vital component of operators’ service portfolio: In 2010, subscribers using a 3G device will generate $88 bn revenues from simple voice services, compared to $233 bn for all other services.

- From now to 2010, 3G subscribers will generate around one trillion dollars of additional revenue.
Revenues by segment

(Excluding simple voice)

Worldwide Revenues ($M)

- Business
- Consumer

Source: Telecompetition Inc., August 2001

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Revenues: Data and voice

Worldwide 3G revenues - data and voice
(including simple voice)

Source: Telecompetition Inc., August 2001

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Revenue by revenue type

(Excluding simple voice)

Source: Telecompetition Inc., February 2001
Revenue comparison by service by region - 2010

Source: Telecompetition Inc., February 2001

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Highlights

- $320 billion in revenues in 2010
- Cumulative revenues of more than $1 trillion from now 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 two thirds of 3G service revenues by 2010
- Asia Pacific represents the single largest total revenue opportunity - reaching $120 billion in 2010
- Europe and North America will provide the highest annual revenue per POP.
Business model framework

INFORMATION AND CONTENT (non-voice)

CONTENT CONNECTIVITY (Internet)
- Mobile Internet Access
- Mobile Intranet/Extranet Access

MOBILITY
- Customised Infotainment
- Portal Focused Approach
- Multimedia Messaging Service
- Location-based Services
- Mobile Specialised Services
- Rich Voice and Simple Voice

Source: Telecompetition, Inc August 2000

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Value chain positioning

Portal Focused Approach

- Non-Portal Application Platforms
- Portal Content Aggregation
- Third Party Billing
- Portal Access
- End-User Billing
- IP Network Access
- Mobile Network Access

Access Focused Approach

Mobile Specialised Services

Source: Telecompetition, Inc., February 2001
Revenue streams for 3G operators are highly dependent on the business models which they and their partners adopt.

The 3G operator role will change from a simple voice-only, direct relationship with the user to one which involves:

- Multiple partners
- Revenue sharing, and
- Third parties also targeting the end-user
Market Study Summary

- Very encouraging prospects for 3G
- Over the long term, only 3G will meet customer needs
- Voice will remain a key source of revenue
- 3G data services are the key to reverse declining ARPU and generate customer loyalty
- Operators will need to offer services which genuinely fulfill market needs
- Operators will need to forge strategic partnerships and adopt appropriate business models targeted to specific customer segments