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Business Considerations for Migration to IMT-2000

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Example of Business Plan

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- A real example from an Asia-Pacific country
- Three mobile operators (Champion, Public, Mini)
- Total population: about 24 million
- Per capita: USD 3,600 increasing by approx. 4%pa
- Business model for the life-cycle (~ year 2015)

IMT-2000 standards

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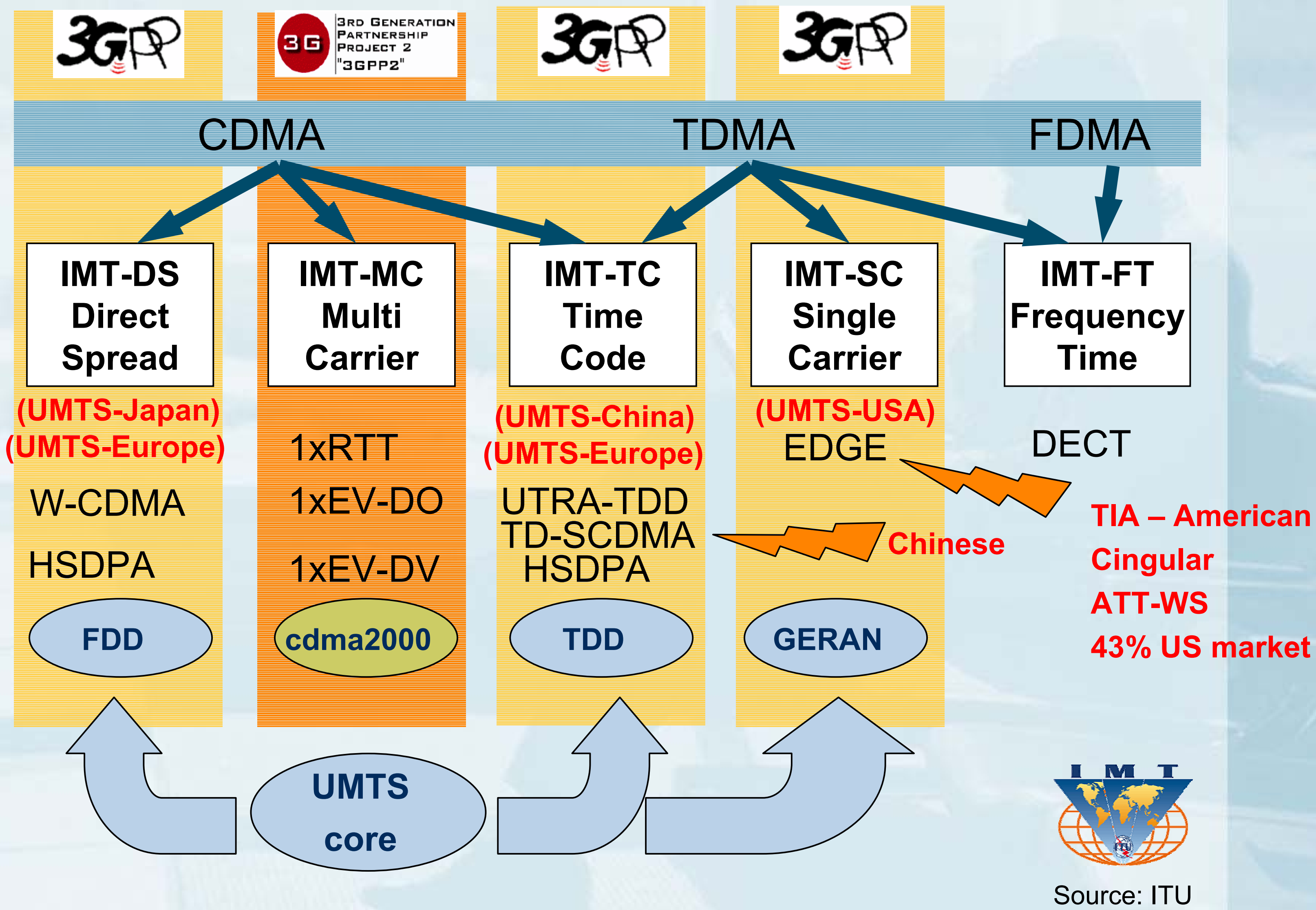
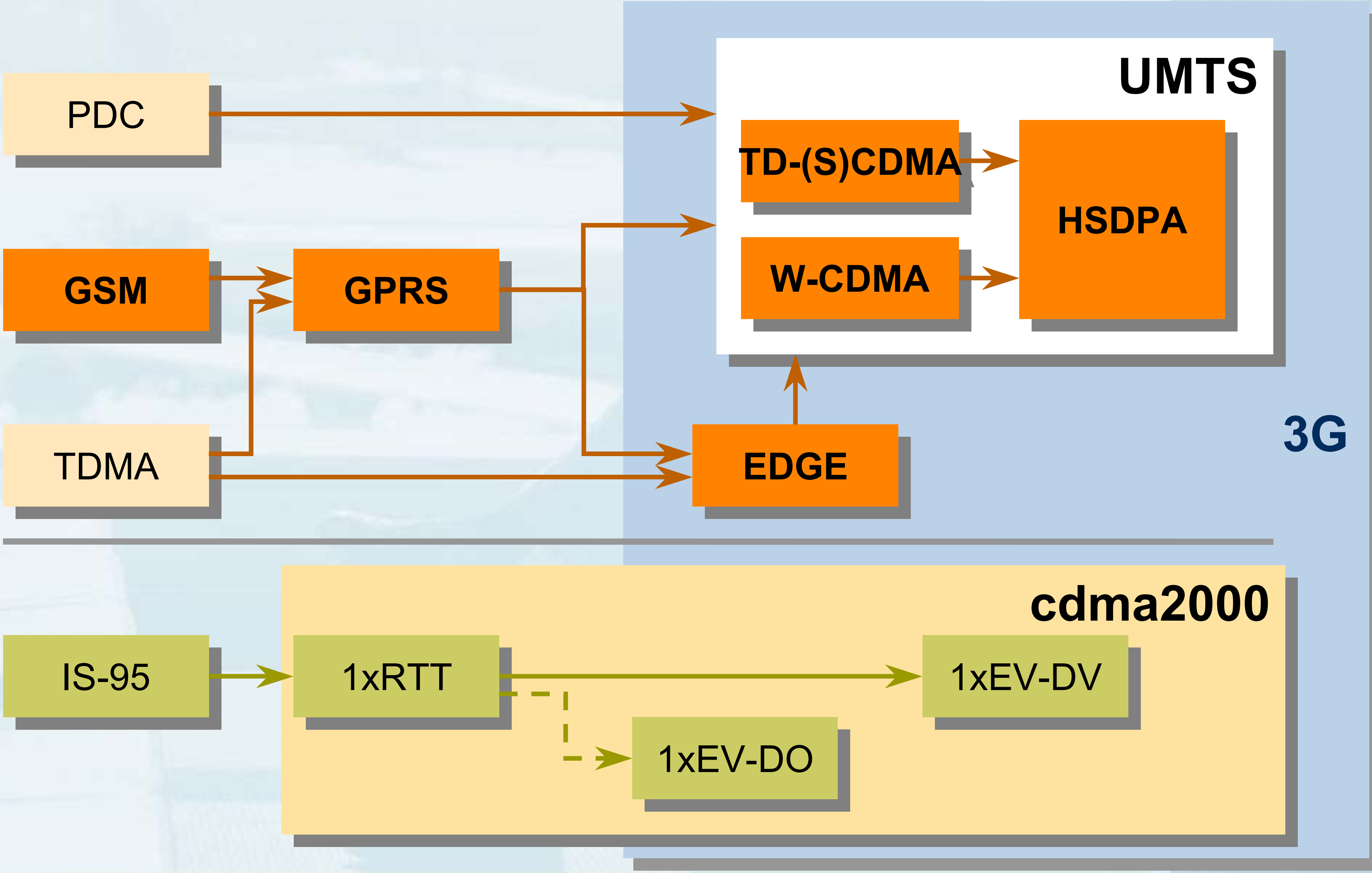
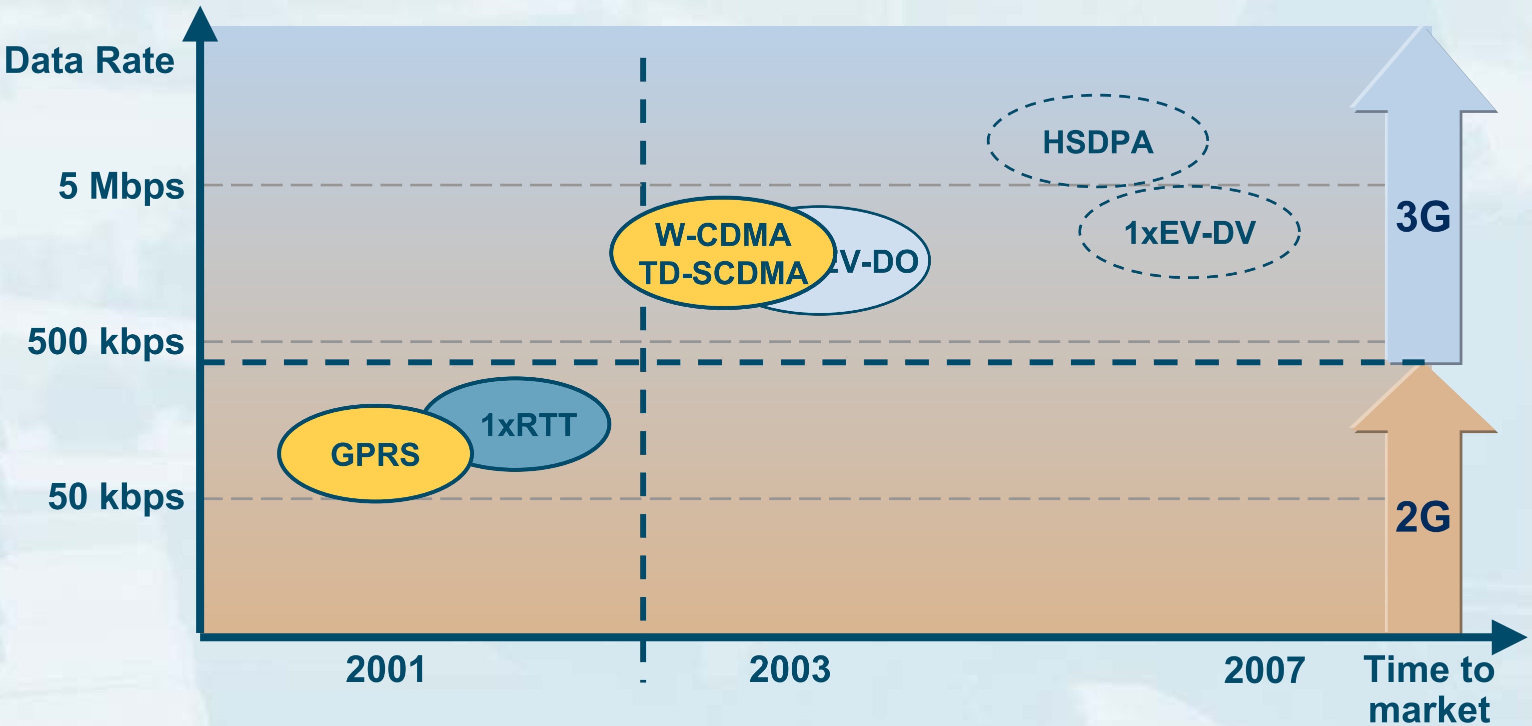


Evolution paths



The real 3G system



1xRTT performance comparable to GPRS

1xEV-DO supports data only

Support of Various Service Combinations

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Real 3G

	Voice activity	Data activity	GPRS	TD-SCDMA W-CDMA	1xRTT	1xEV-DO	1xEV-DV
Example 1	High quality voice call	High speed web surfing	no	yes	no	no	yes
Example 2	High quality voice call (call-back)	Video conference	no	yes	no	no	yes
Example 3	High quality voice call	Information retrieval	yes	yes	yes	no	yes

IMT-2000 Requirements

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- Support up to 2 Mbps data rates
- Support multimedia services
- Support of packet and circuit switched services
- Spectrum efficiency and high system capacity
- Flexible operating environments (Vehicular, Outdoor-to-indoor pedestrian, indoor office)
- Improved global roaming due to global frequency coordination with an IMT-2000 spectrum in 2 GHz range
- Packet data network
- Quality of Service
- Interoperability with 2G networks

… but in North America

- This spectrum was just auctioned for PCS operators
- 2G systems (e.g. PCS) just started service with large investments in spectrum and IS-95 equipment

→ Need of different 3G migration strategy

Mobile Subscriptions:

Year End 2001 – Total and GSM only

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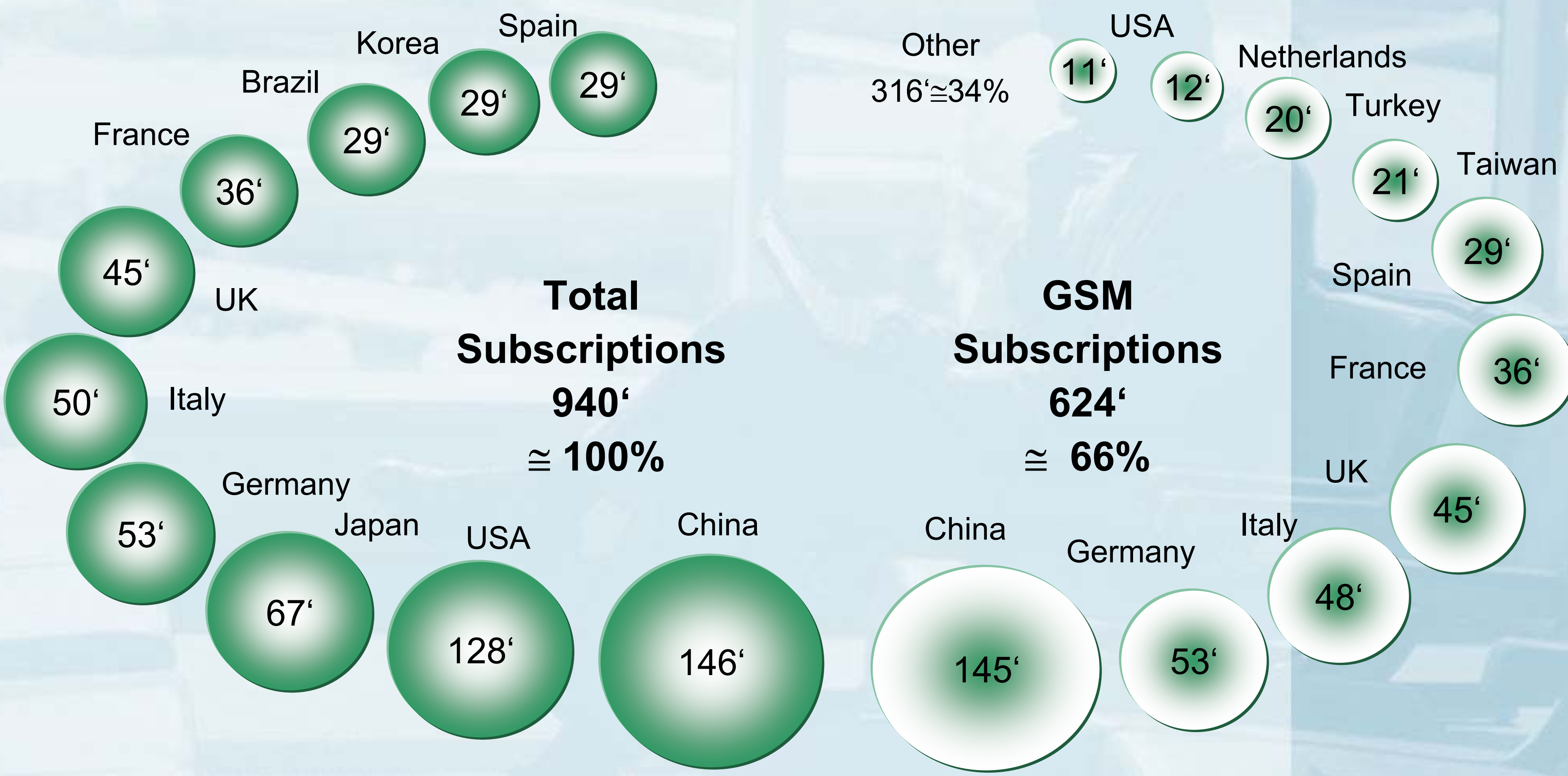

GSM Association forecast = 1 billion for YE2003

Source: ICM N M, Status: July 31st, 2002

Business Casing References: The strength is in Long Term Partnership

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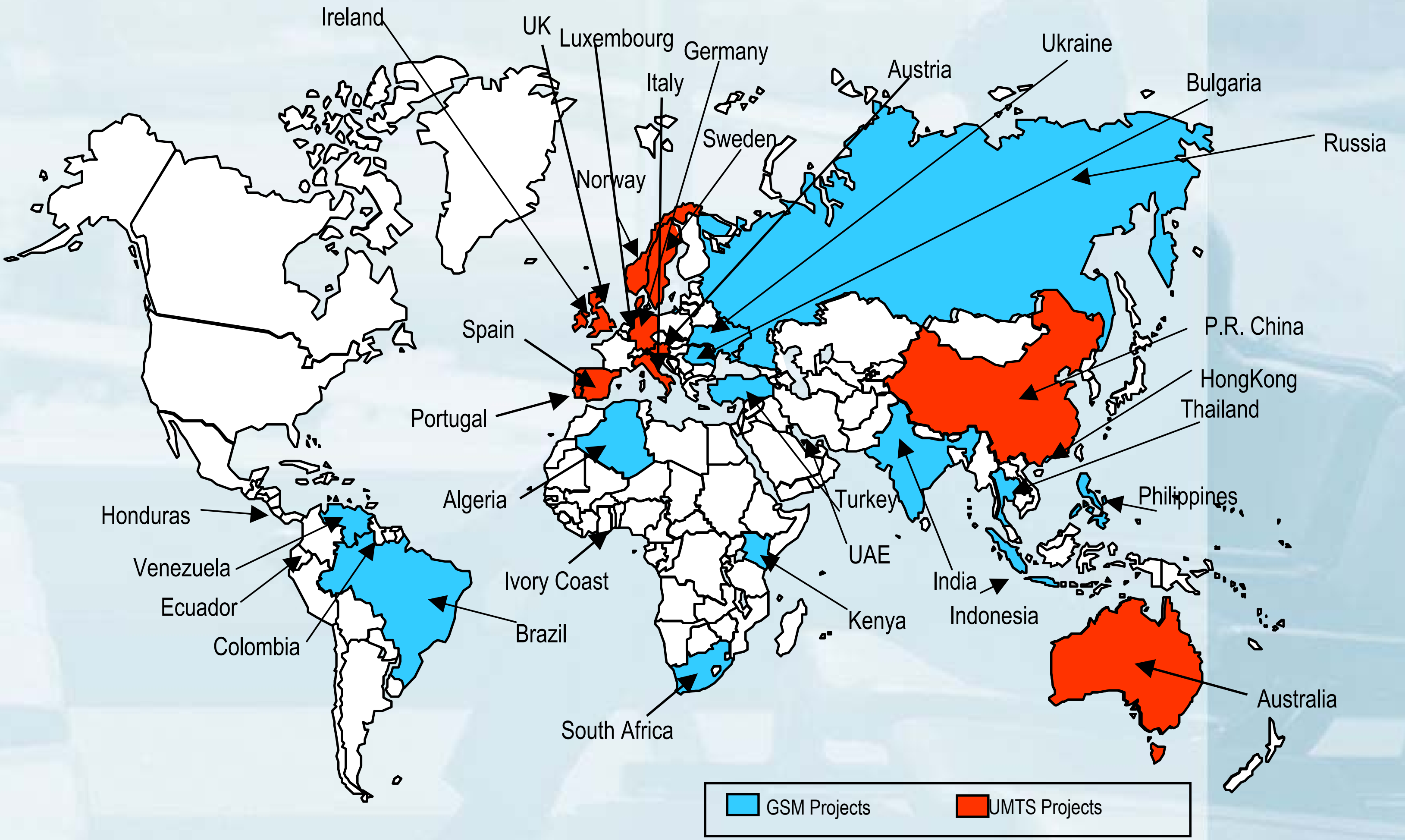

Business Plan Development:
An integral part of customer relationship

ICM Networks Marketing

- **Portfolio Management**
  - **PD** Portfolio Design
  - **SB** Solution Building
  - **CV** Customer Value Mgmt
- **Operator Business Plans**
  - **DD** Business Plan Due Diligence
  - **PD** Business Plan Development
- **Spectrum Economics**
  - **FP** Frequency Policy
  - **IC** Industry Co-ordination
- **Network Economics**
  - **CB** Customer Benefits
  - **BI** Business Impact
  - **BC** Budgeting & Controlling
- **Market Assessment**
  - **AS** Market Analysis & Scenarios
  - **CI** Competitor Intelligence
  - **CS** Customer Satisfaction
  - **AC** Customer Analysis & Analyst Relations

Siemens is able to support the Strategy and Business Plan Development

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Various steps from conceiving a corporate vision up to detailing implementation activities are necessary.

Vision and Concept

•Vision

•Corporate philosophy

•International alliances

Market Definition

•Assess market

•Understanding the market

•Positioning

Entry Strategy

•Develop a strategy
- Business units
- Products, Channels, Segments, Entry

•Regulator

Business Planning

• Build a business case with const and turnover estimates
• Budgeting
• Investments

Company build up

•Organization
- Process driven
- Customer oriented

•Integrated processes

•Technology and network planning

•IT Systems

•Key functions
- Marketing
- Sales
- Customer Care

•Support functions

Implementation

•Up-date strategy

• Implement the concept to build and develop core capabilities

•Focus resources on market entry date

Integrated project management

Business Plan Development – Customers benefit

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Business Development Process

Typical questions to be answered

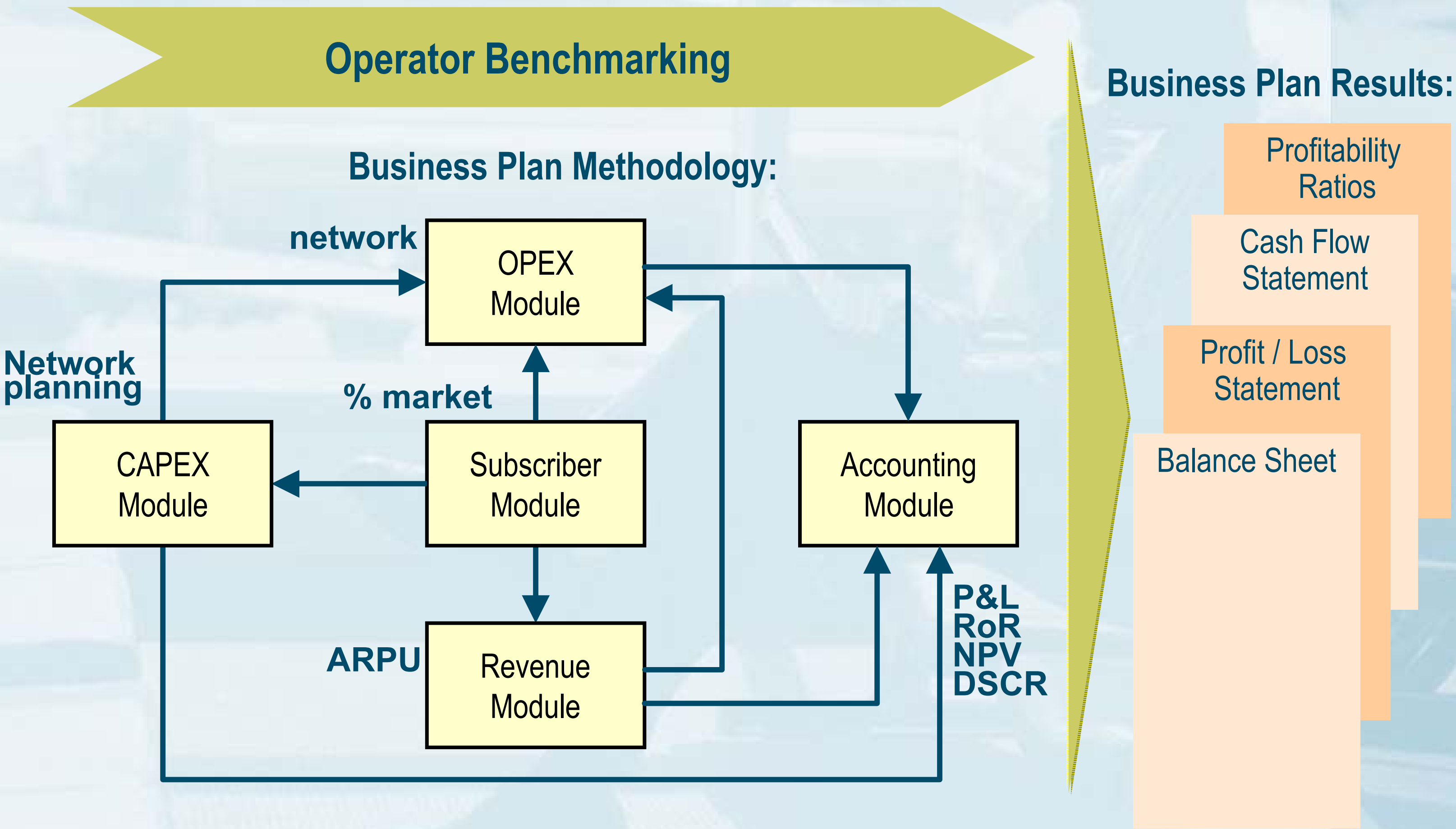
- We intend to buy a 2G/3G license. Could the project be feasible from a financial point of view?
- How does market, penetration, ARPU etc. look like? Can investors expectations be met?
- Is our strategy in line with my financial expectations?
- When do we have to consider technology migration?
- What new services do we need to improve financial performance?

Contribution of Siemens

- **Financial feasibility study**
- **Investors Case**
- **Development of fully comprehensive operators business plan**
- **Strategy assessment**

Siemens Business Plan Support is modular

The market and revenue simulations are the key modules of our business plan tool.



Our services cover all market phases from late 2G entrant to future IMT-2000 incumbent

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Customer Market Phase

New entrant in delayed market	Investors' case Fully comprehensive business plan	⇨ Stimulate investors
Migration **2G → IMT-2000**	Detailed subscriber model Migration benefits, operators' market attractiveness, competitive churn, technology churn, retention mechanisms	⇨ Position against "new comers"
"2nd wave UMTS" - UMTS new entrant	Data revenues, applications/solutions centric, bottom-up scenario modeling	⇨ Build key strategic relationships
"2nd wave UMTS" - UMTS incumbent	Supplier/product related incremental revenues, OPEX, CAPEX Link to product business plans	⇨ Evaluate alternative relationships

Example of Business Plan

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- Total population: about 24 million
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- Business model for the life-cycle (~ year 2015)

Structure of Business Plan model:
The customer (Subscriber) is the KING!

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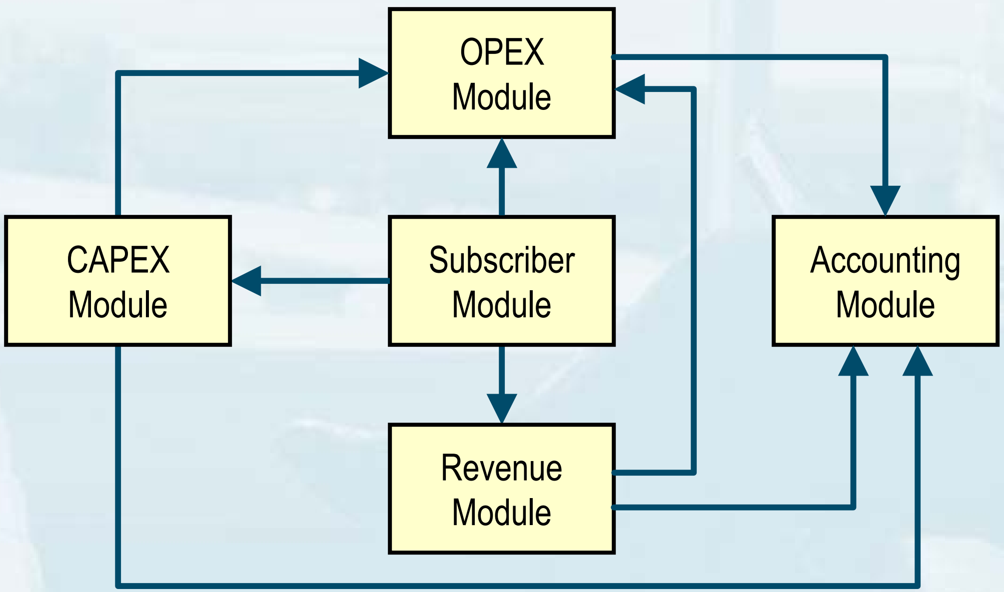

From market share growth to:
- Reduce Churn
- Increase ARPU
- Increase use of services
- Affordable new services

Considerations:
- Regulations (old & new)
- Purchasing Power (pre-paid)
- GDP and major trade partners
- Virtual Home Environment

Structure of Business Plan model: The customer (Subscriber) is the KING!

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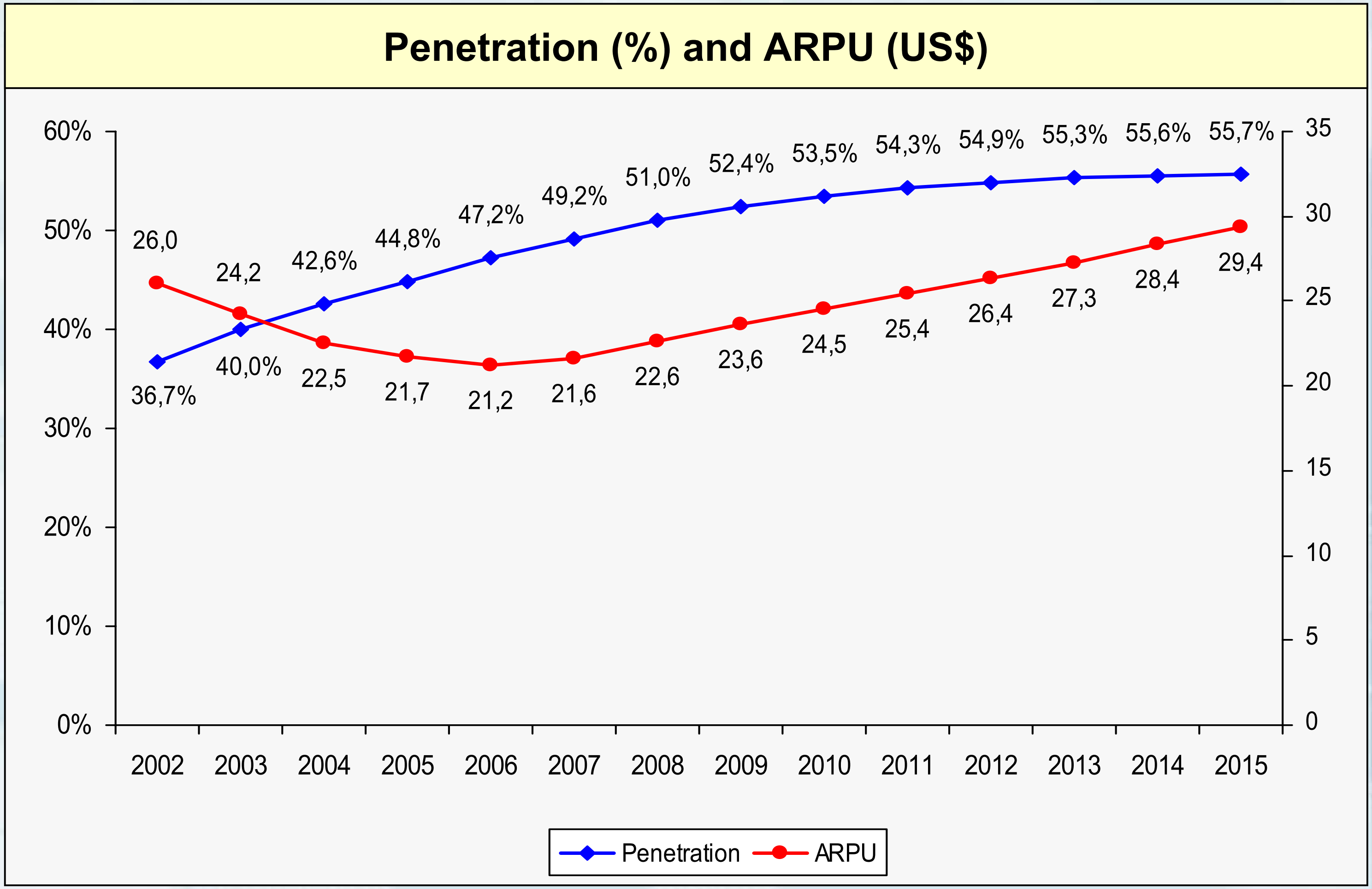

- **Max 56%**
- **Growth market**
- **ARPU decline due to market %**
- **From 2006 ARPU growth**

Technology Adoption Rate:
Users define it based on usefulness !

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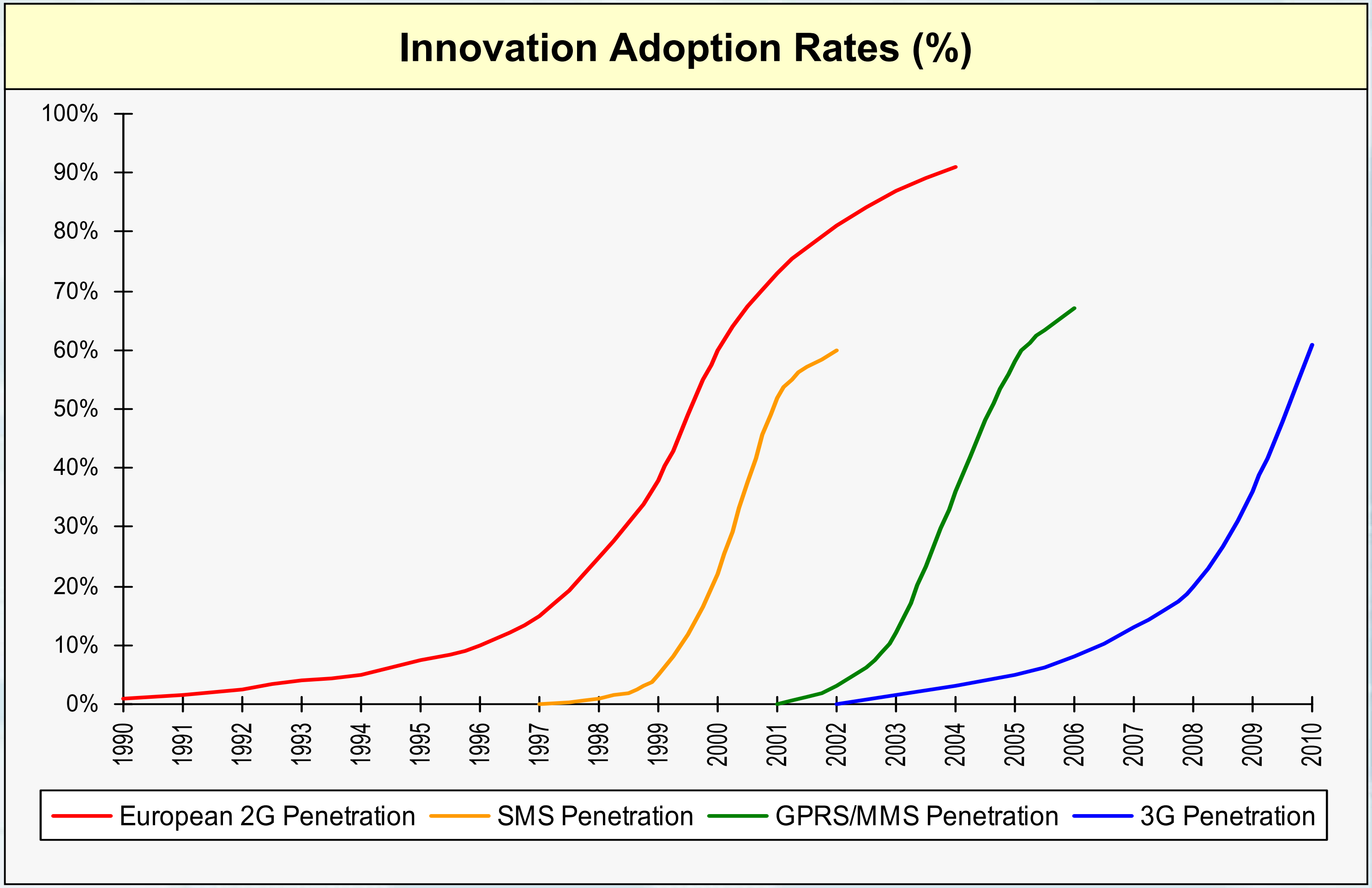
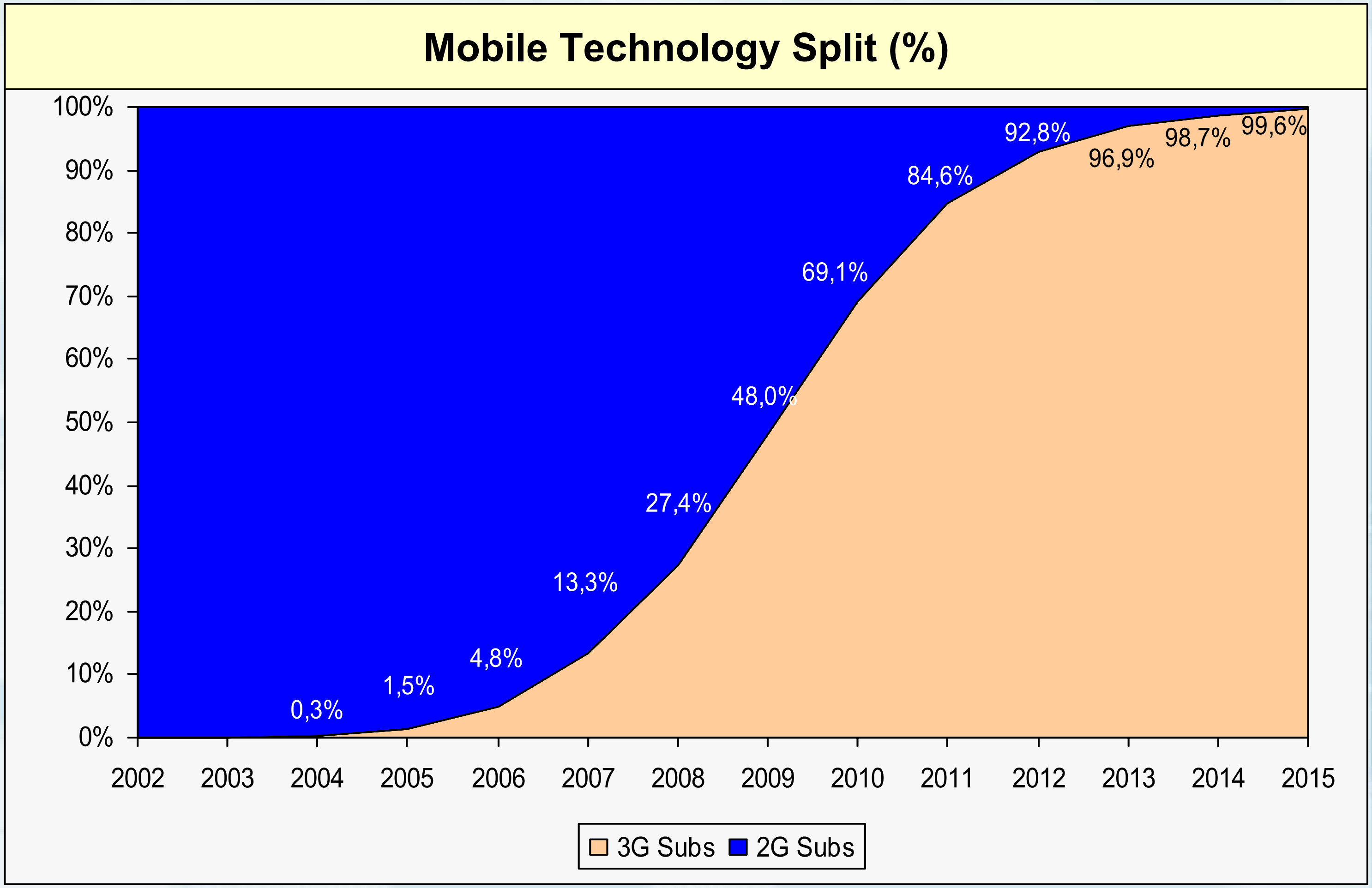


Source: Deutsche Bank

- "Killer" Services defined by users!
- Ring tones as killer app.! ($1B)
- SMS failure in US
- Photos (MMS)
- Internet ???

Technology Migration: The “S” curve



Learning curve

Timing / aggressive

Technology churn

Coverage

Subscriber Migration to new Technology: 2G Networks will be with us for a long time!

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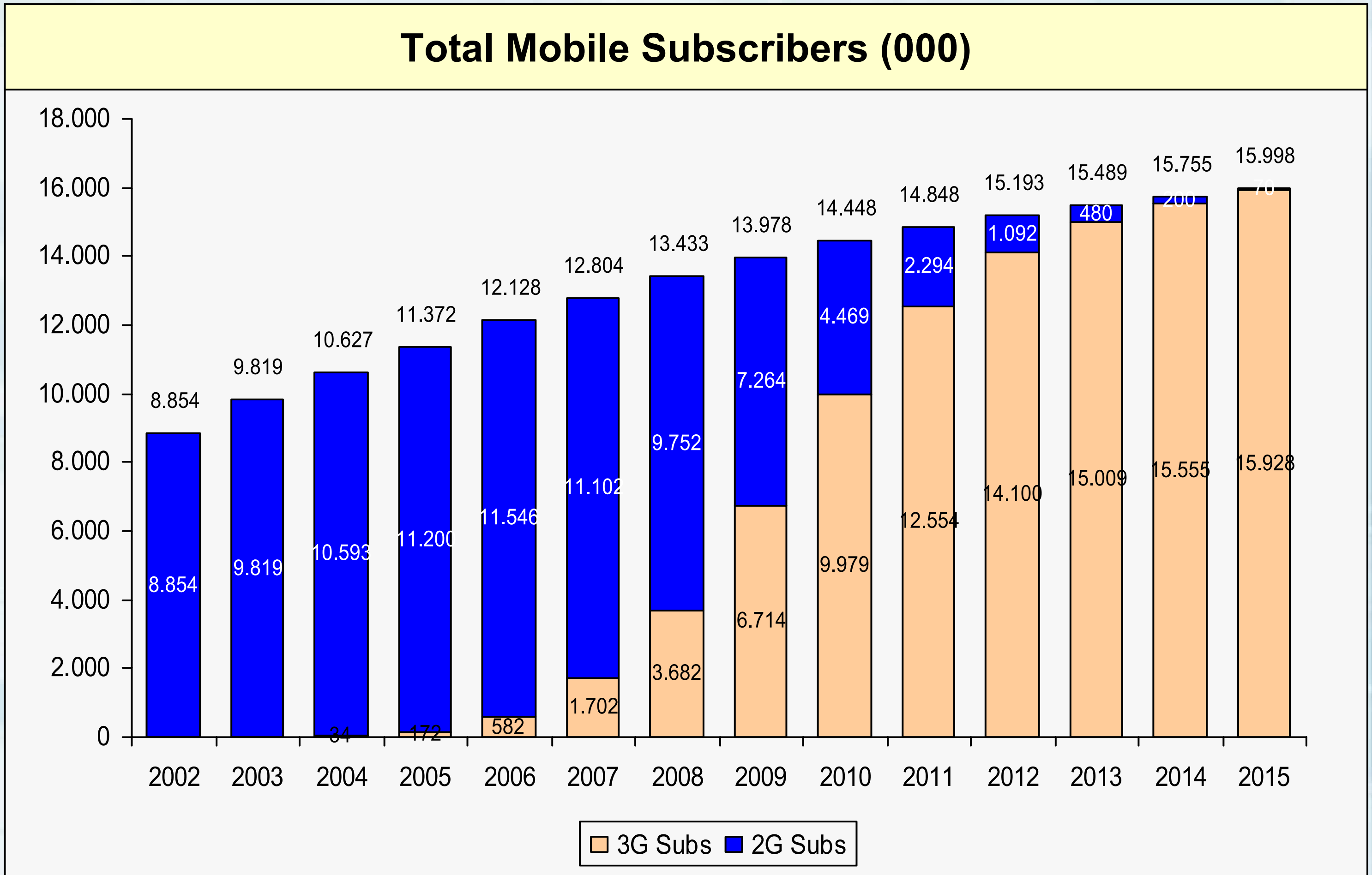

2G/3G compatibility

ARPU from 2G & 3G

Subs services

Competitiveness

Distribution of Subscribers per Operators

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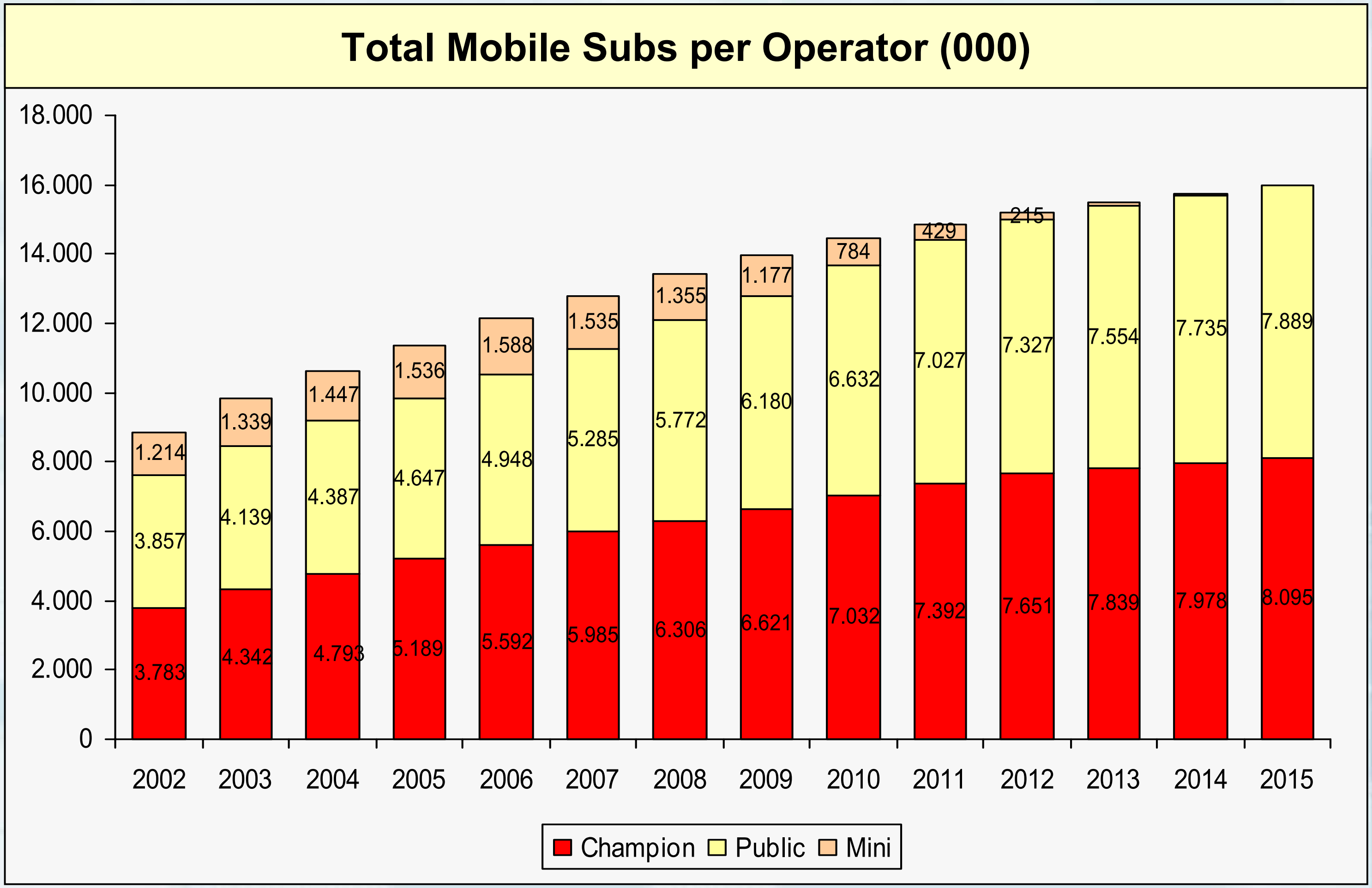

- Prepaid is norm
- Duopoly in long term
- Market share depends on service offerings
- New subscribers start with 2G

2G Subscriber Market Share:
2G Networks will be with us for a long time!

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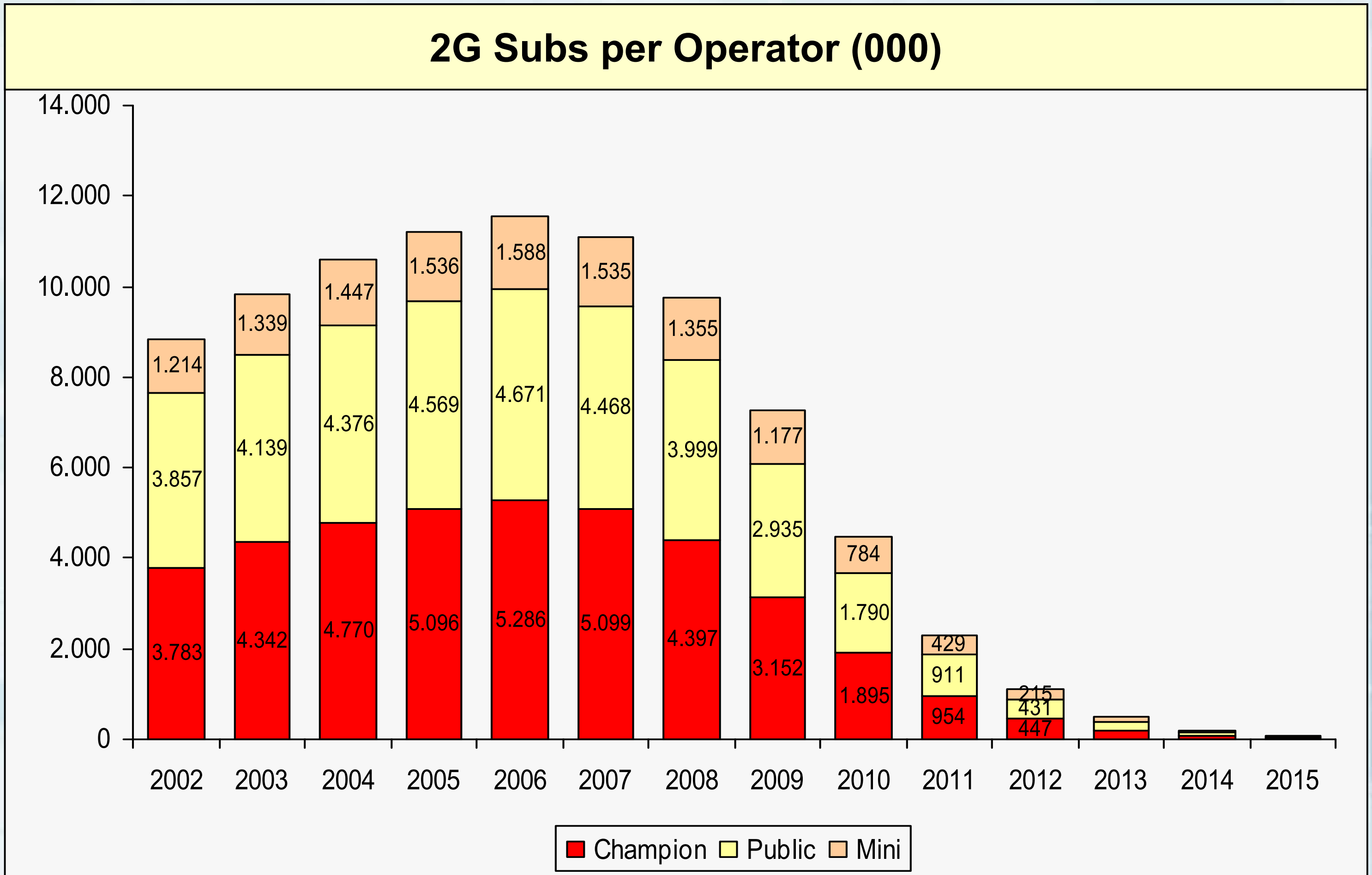

- 3G starts to show from 2007 onwards
- 2G network will be phased-out due to financial non-viability

Subscriber Market Share: Mini will disappear (market consolidation)!

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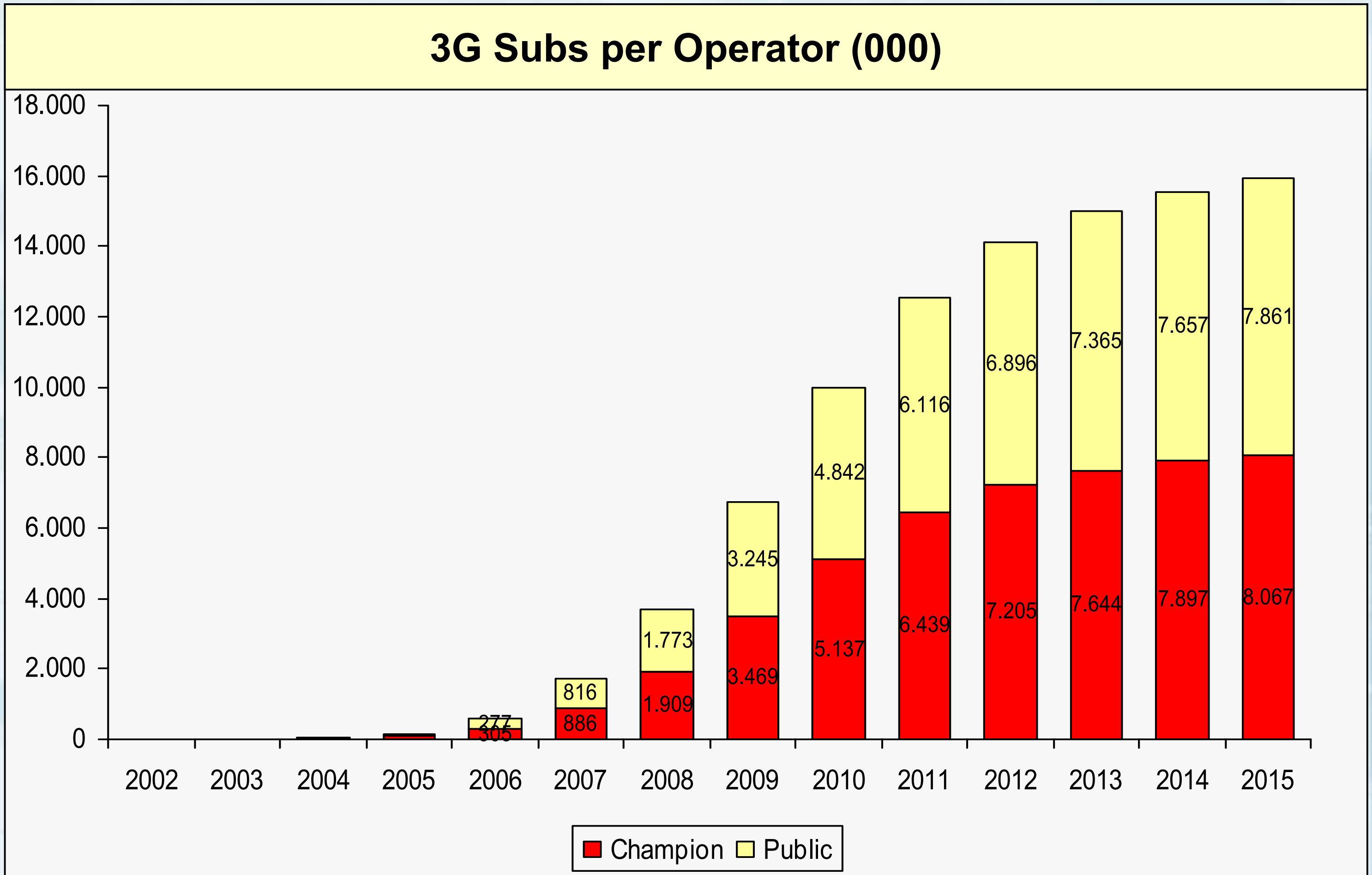

3G Subscriber Market: Migration from 2G to 3G and churn is norm!

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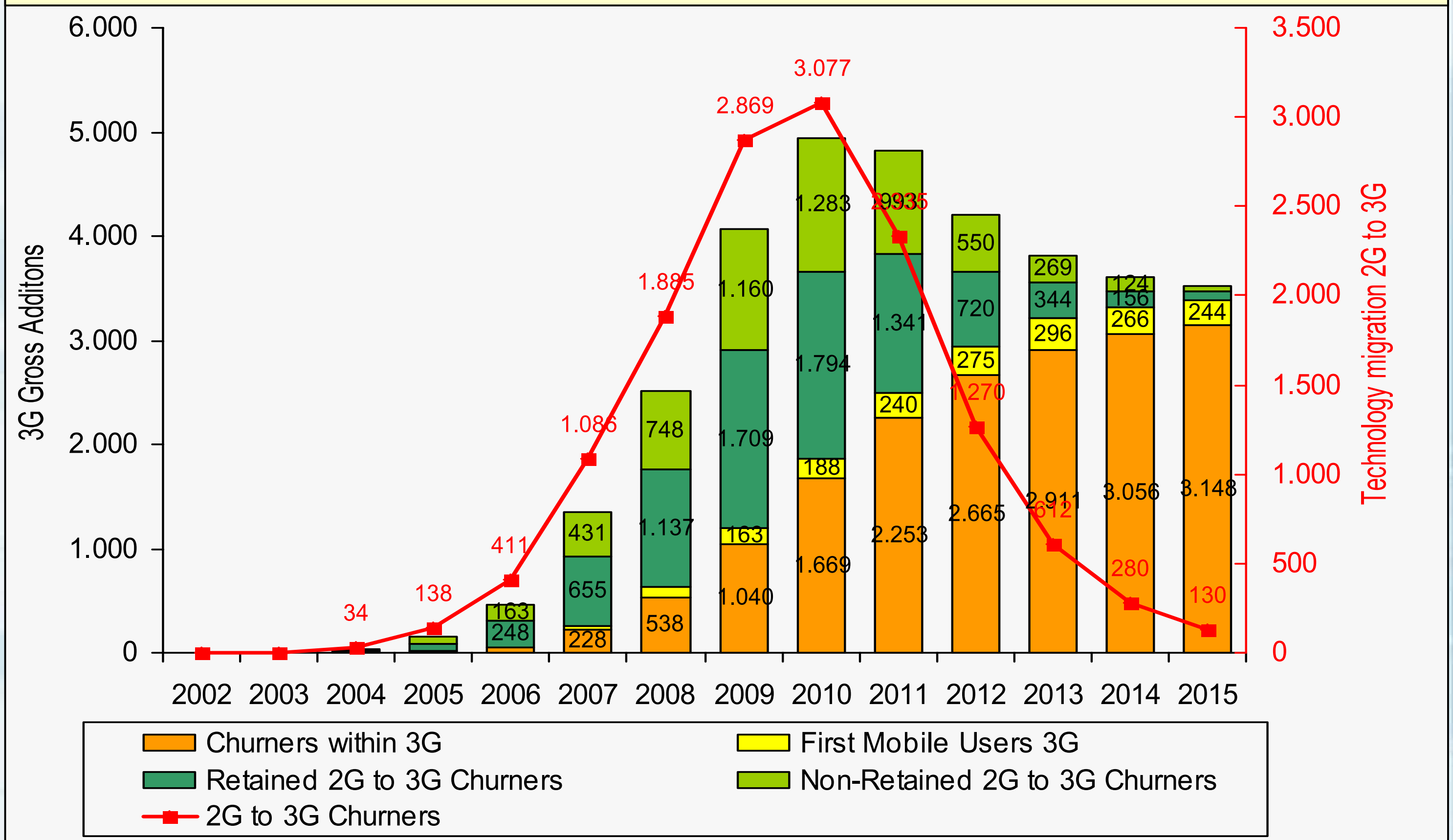
3G Market Gross Additions Structure (000)



- **Tech Migrators**
- **Churn > 2 - 3 year**
- **Competition in services / tariff**
- **New subscribers start with 2G**

Champion's Subscriber Market Segmentation: Prepaid Residential is key – not post-paid!

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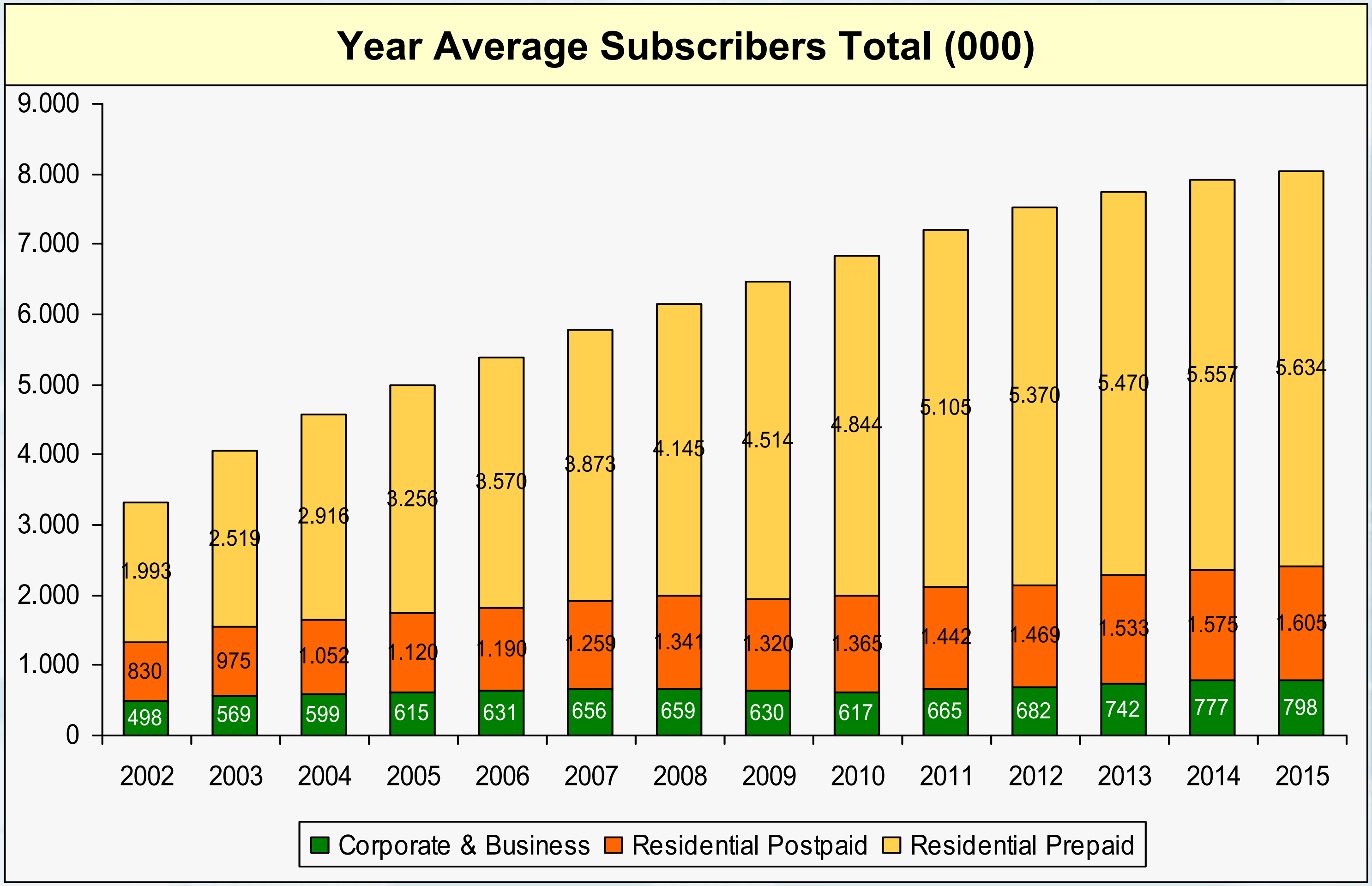

- Prepaid is norm
- user control for telecom expenses
- Cash-flow & bad debt control
- New subscribers start with 2G

Champion's 2G Subscriber Market Segmentation: Early migrators are business post-paid !

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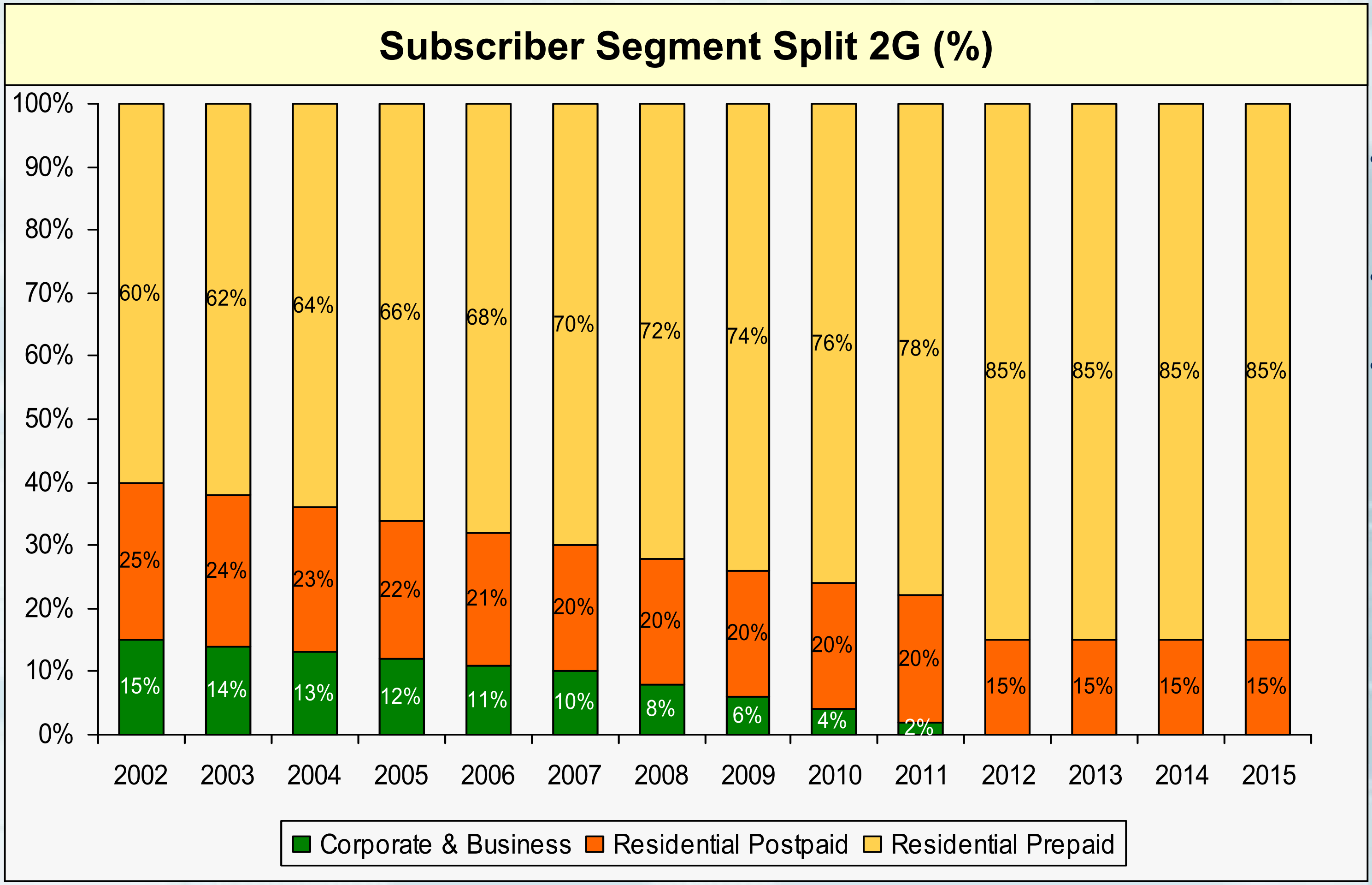

- Price insensitive migrate first
- Status symbol
- 2G serving bad "debt rated"

Champion's 3G Subscriber Market Segmentation: Early migrators are business post-paid !

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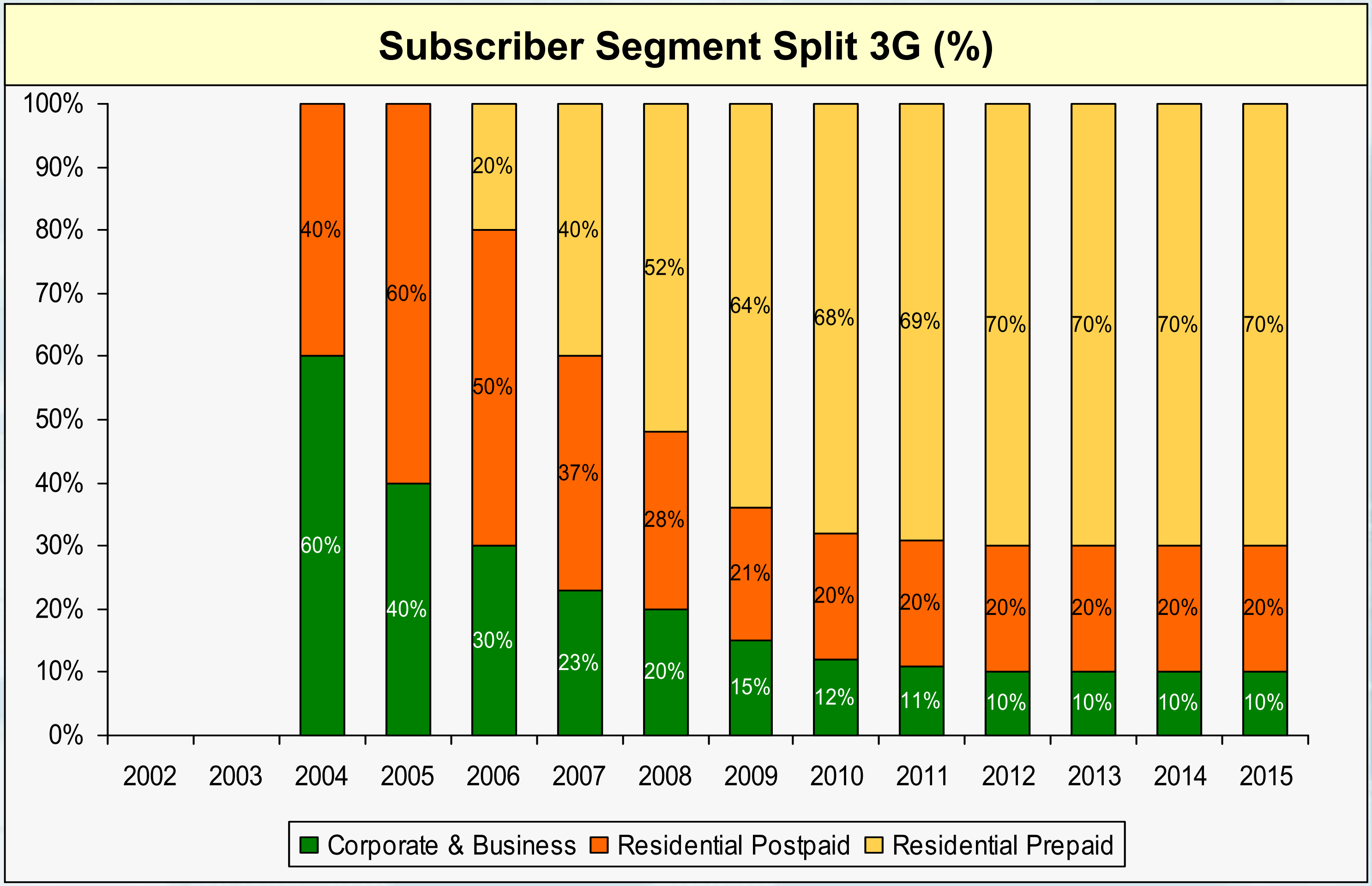

- "Rich" pre-paid migrate first

Champion's ARPU: Budgetary and affordability constrains !

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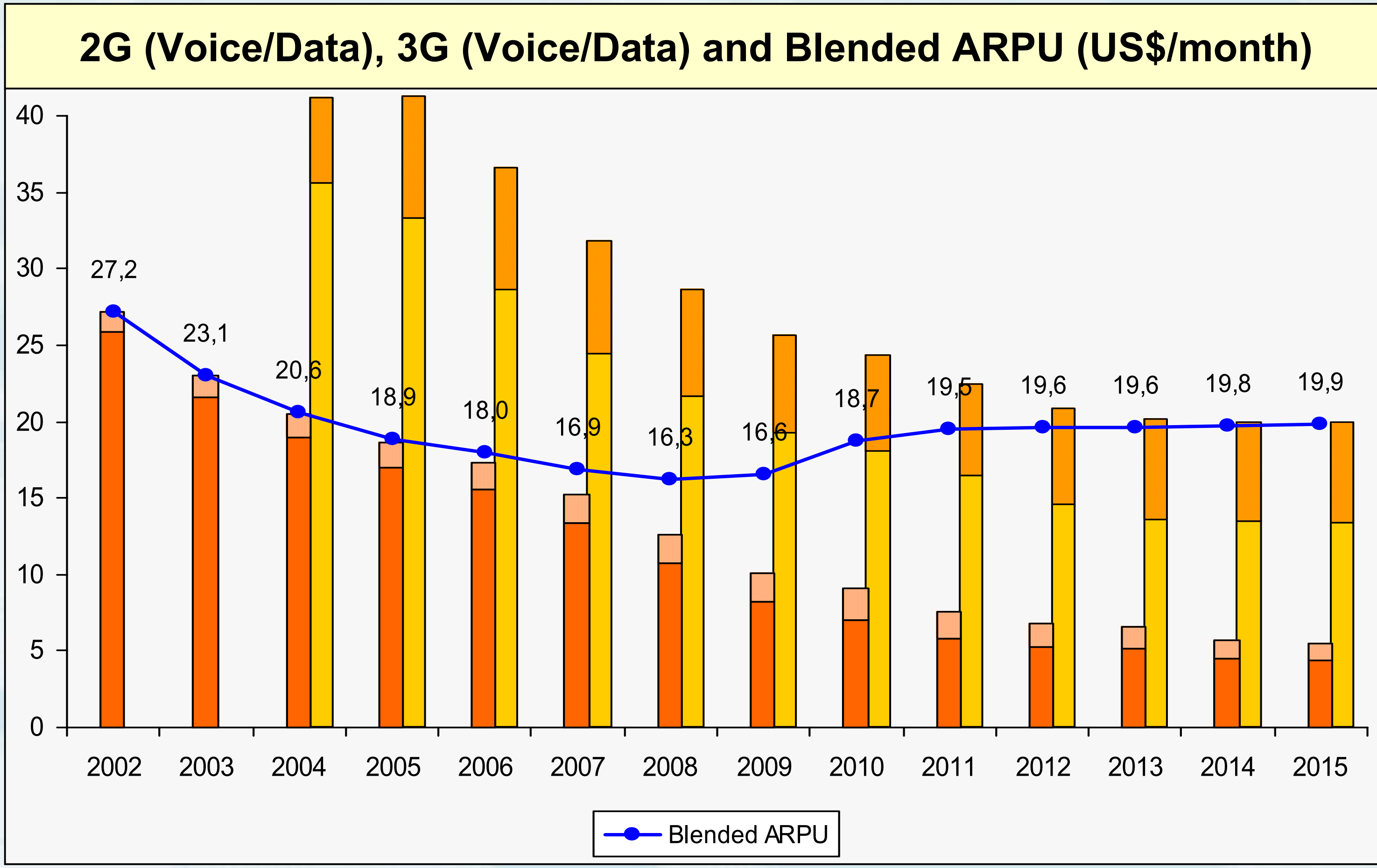
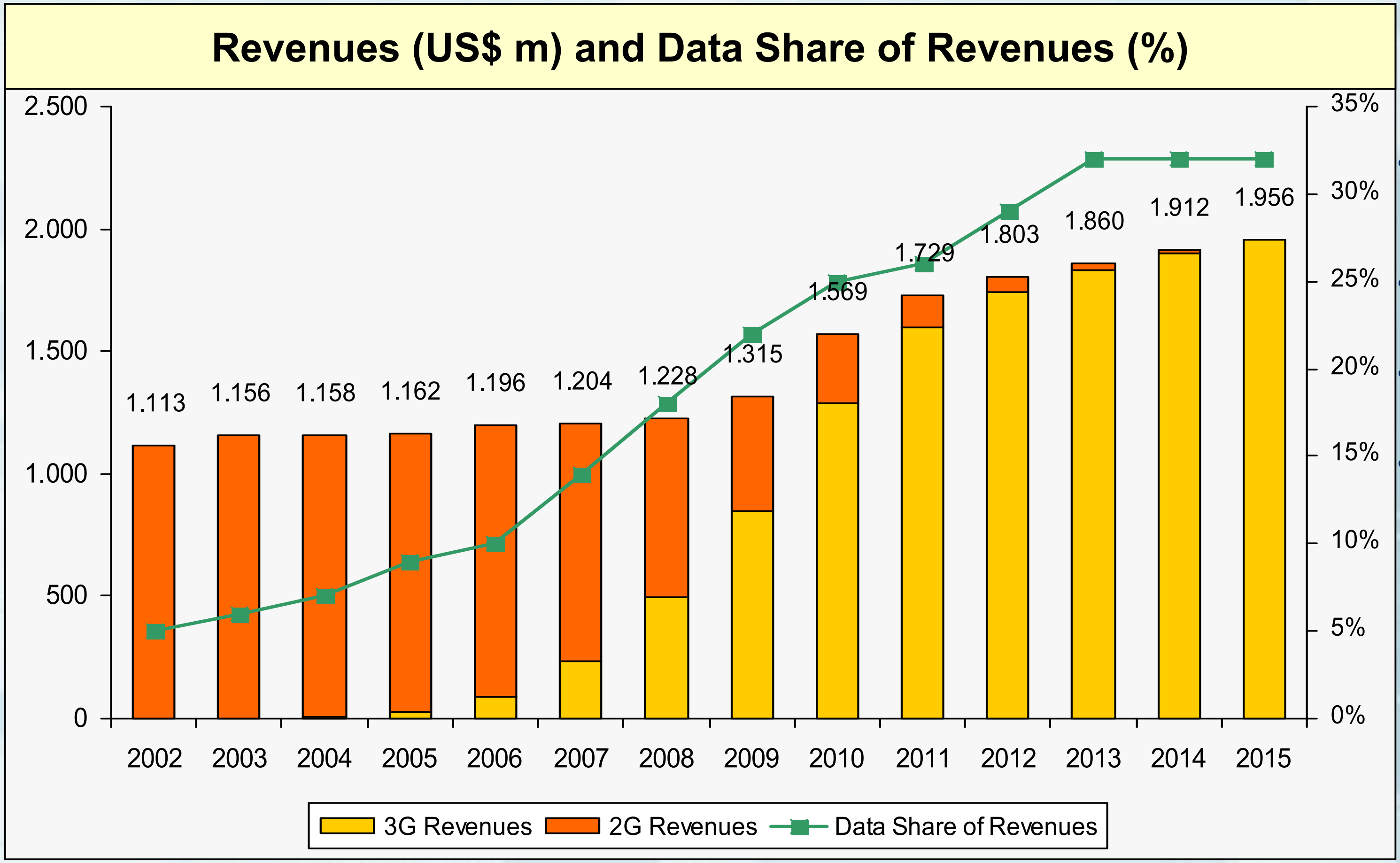


- Price competition keeps ARPU low
- Other networks take some of the telecom budget

Champion's Revenues



- Subscriber growth keeps revenue high up to 2006
- 3G revenues from 2006 onwards
- Data revenue from 5% to +30%
- 3G revenues are critical post 2007

Champion's blended ARPU (ARPU / services)

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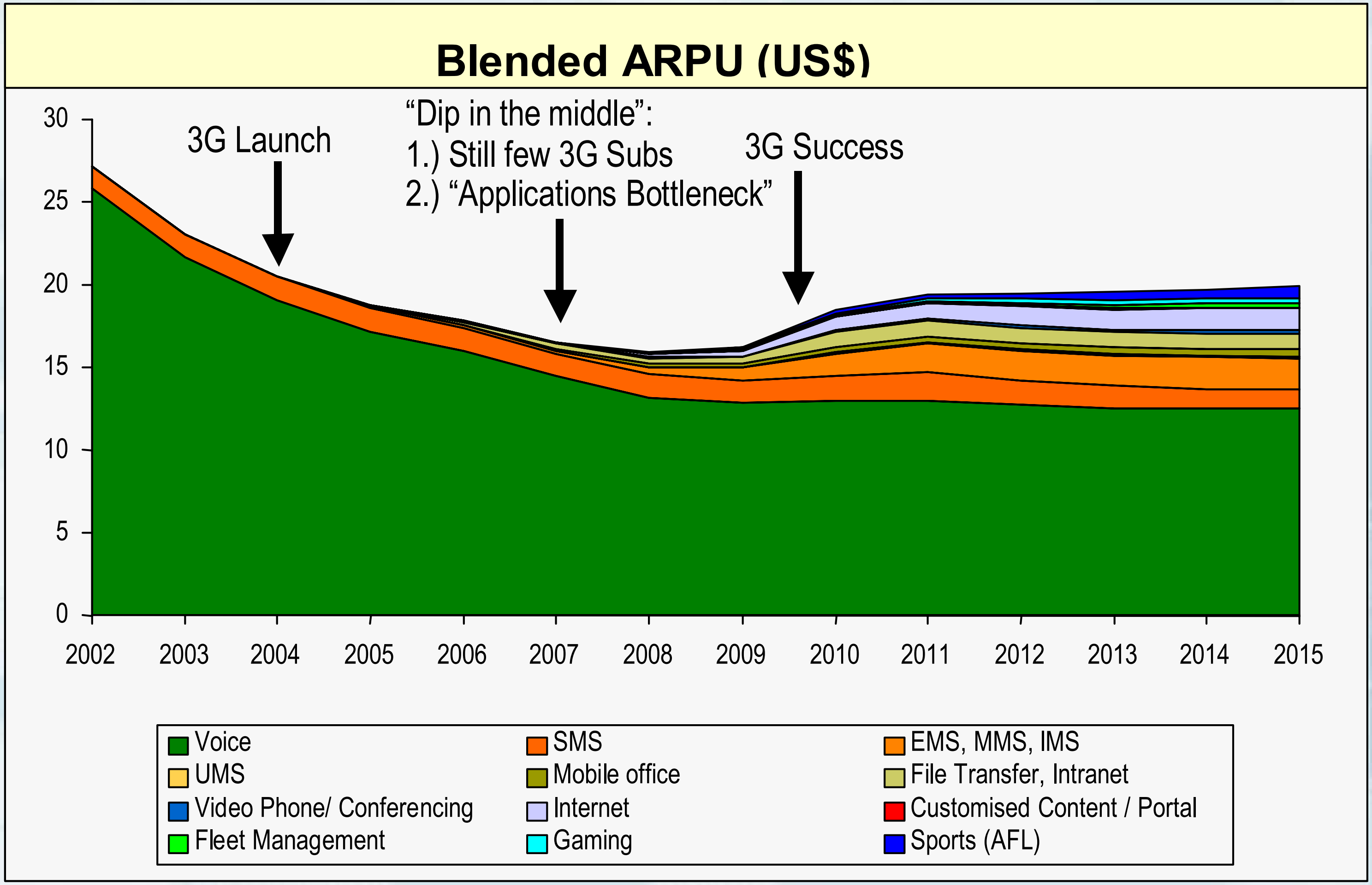

- Dips due:
- lower ARPU from 2G and transition
- 3G services have "launch" problems
- Interoperability
- retention of "high value" customers

Champion’s OPEX breakdown

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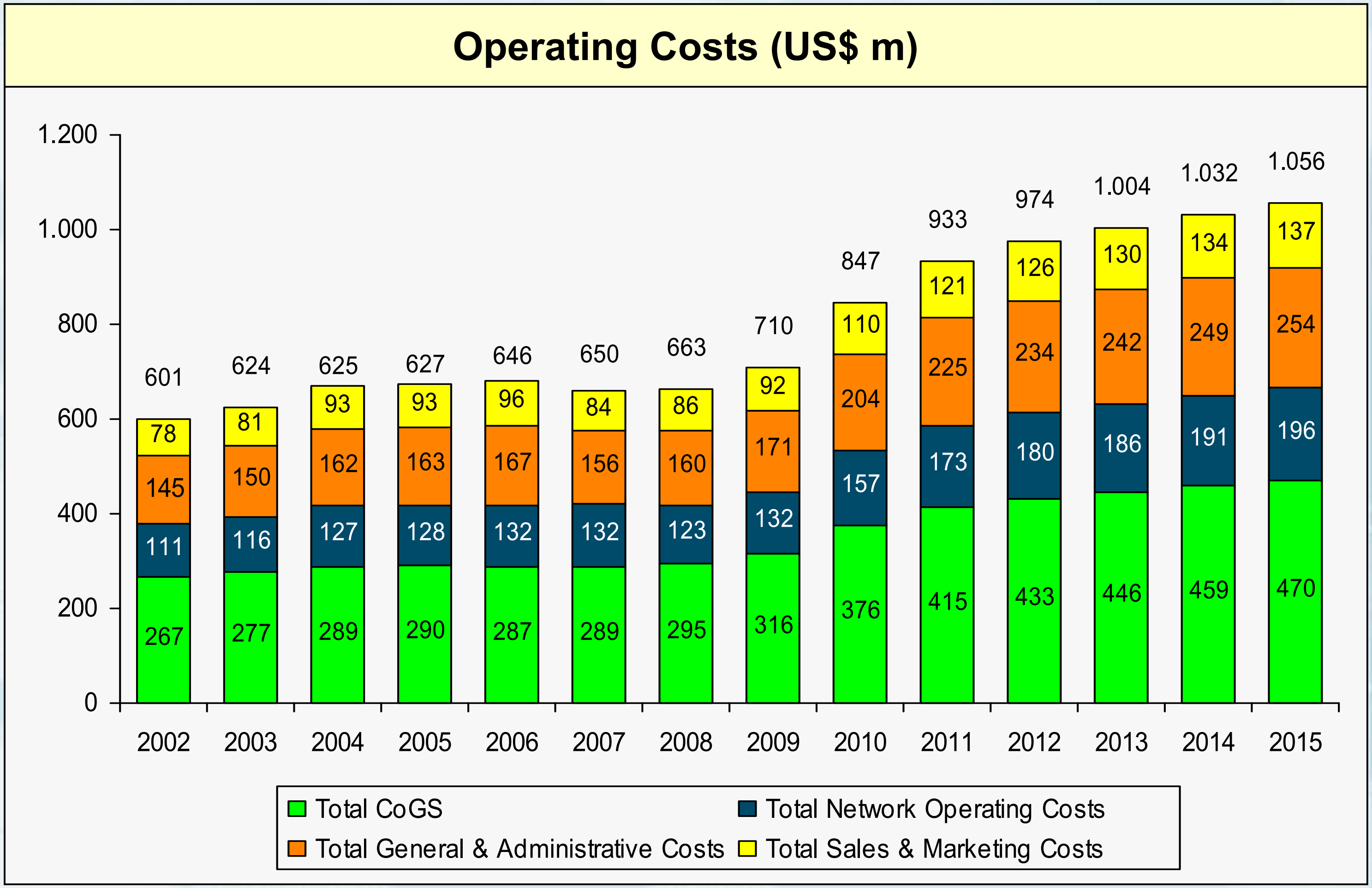
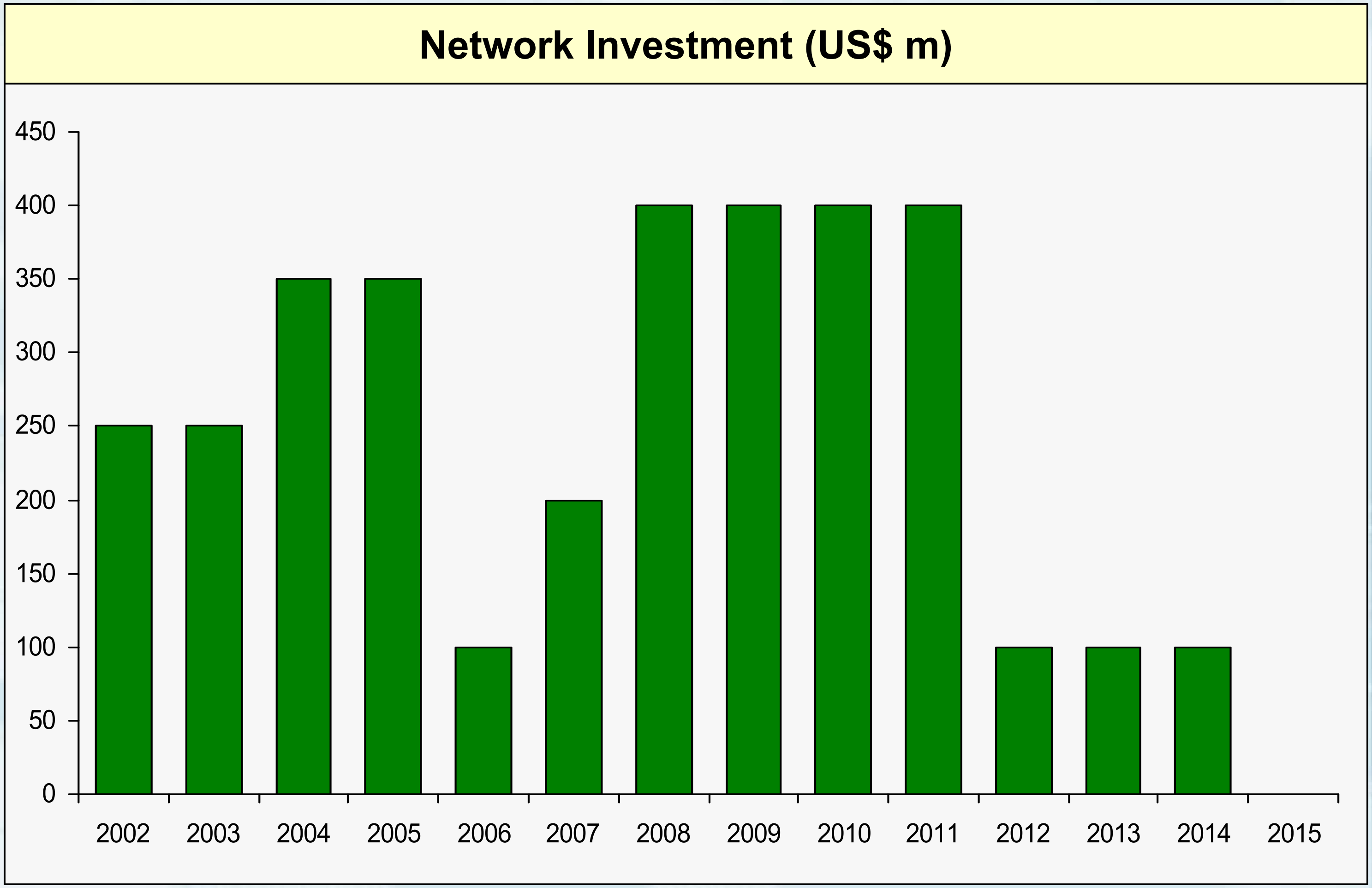


- **Attention to IPR costs for network operations !!!**
- **IPR costs for “contents” not included**
- **OPEX dip due to “stable-state” 3G network**
- **OPEX broadly in line with network investments**

Champion's CAPEX breakdown



- Peaks due:
- initial 3G launch
- capacity increase
- Interoperability

Champion's Revenues & cash-flow breakdown

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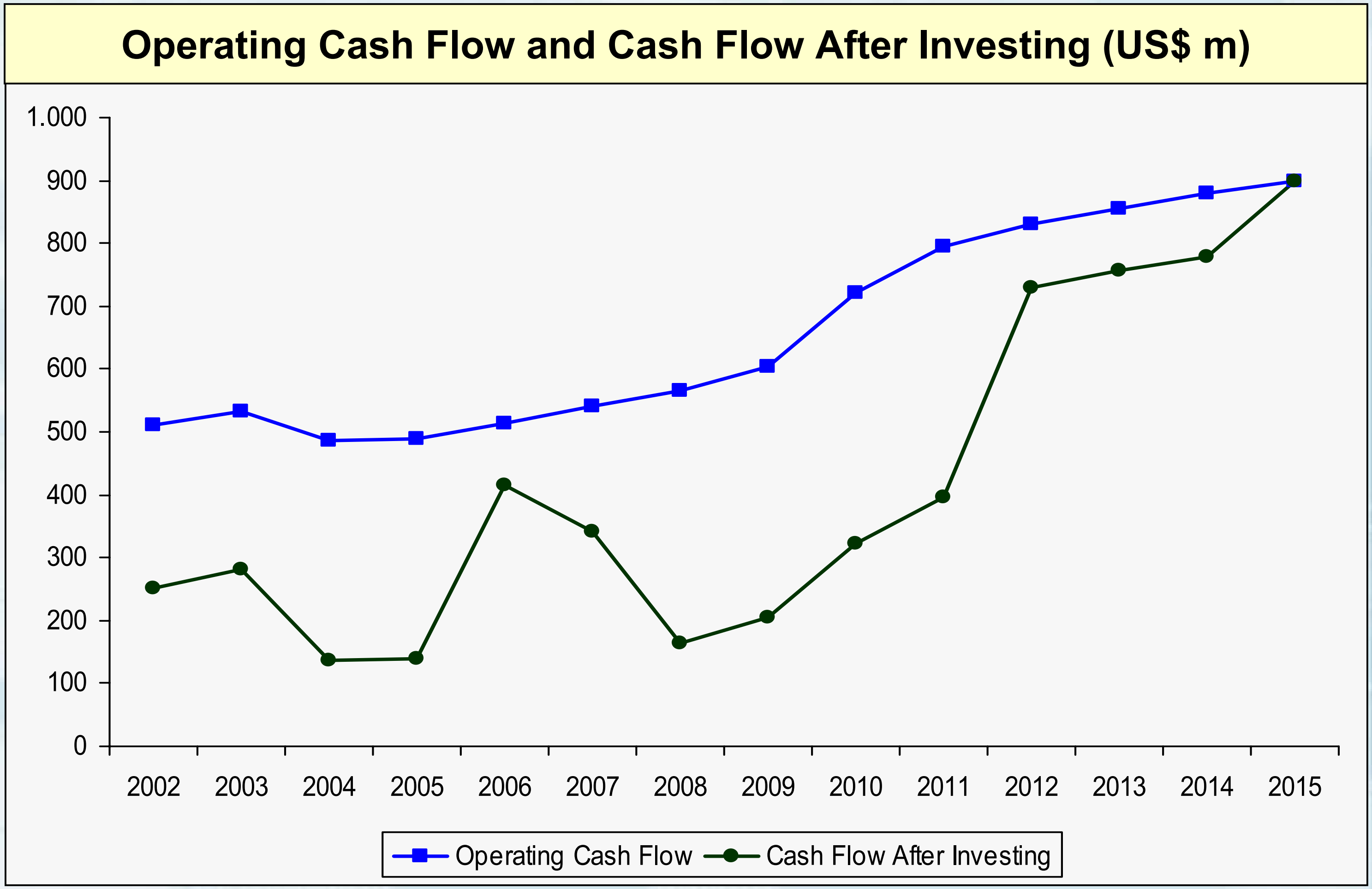
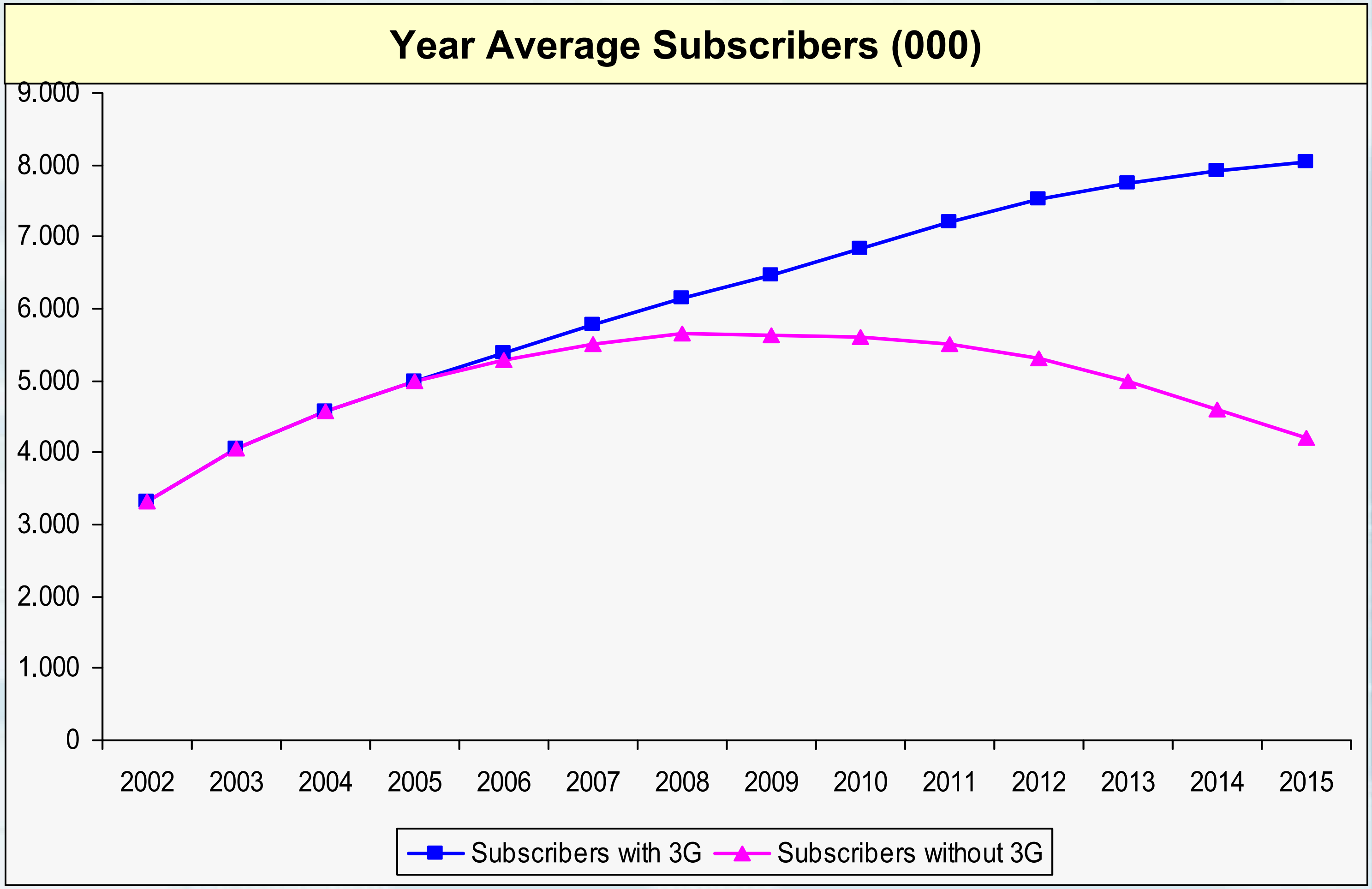


Champion's future without 3G - # of subscribers



Champion's future without 3G - revenue

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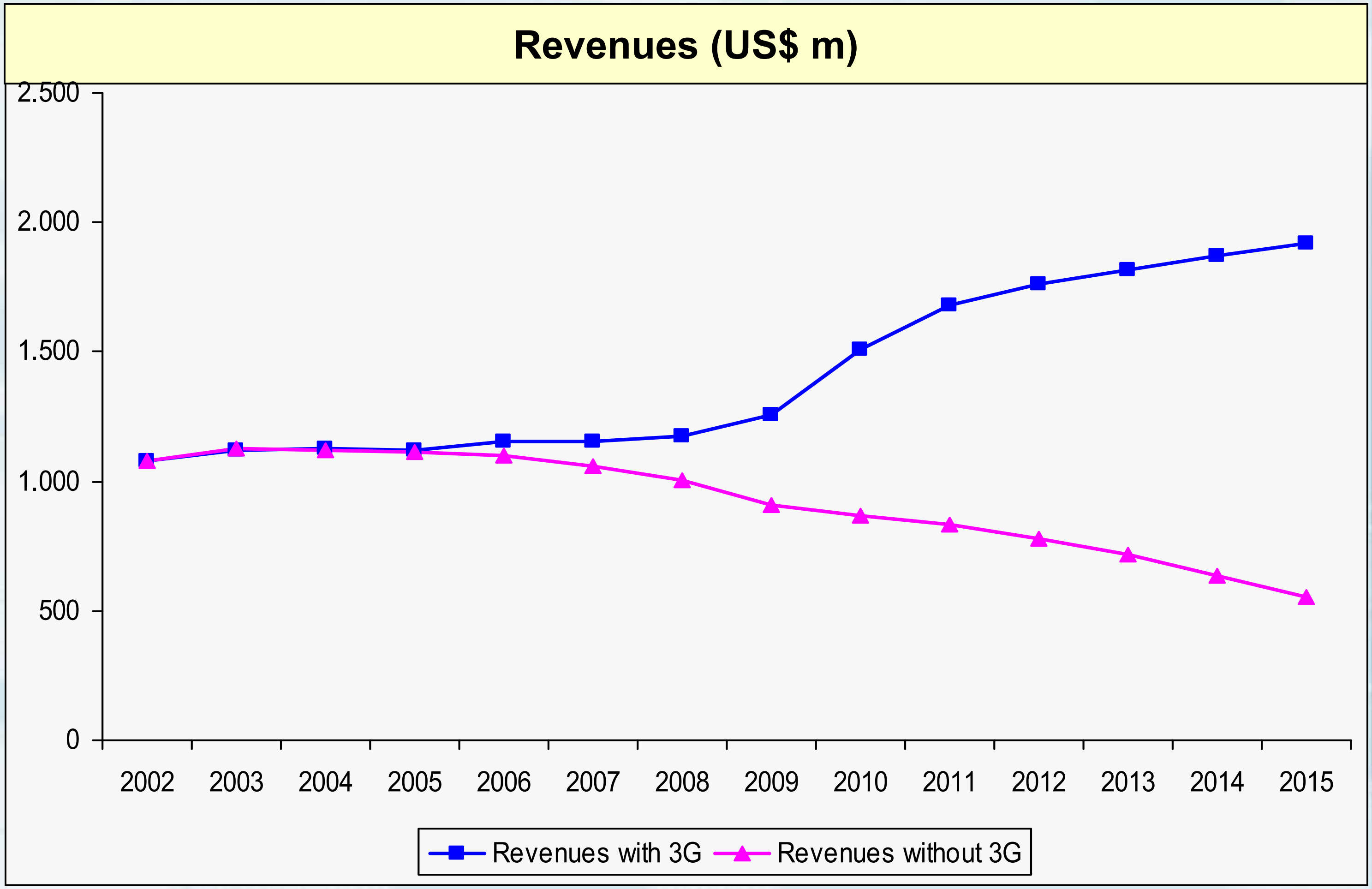

Champion’s future without 3G – Cash flow

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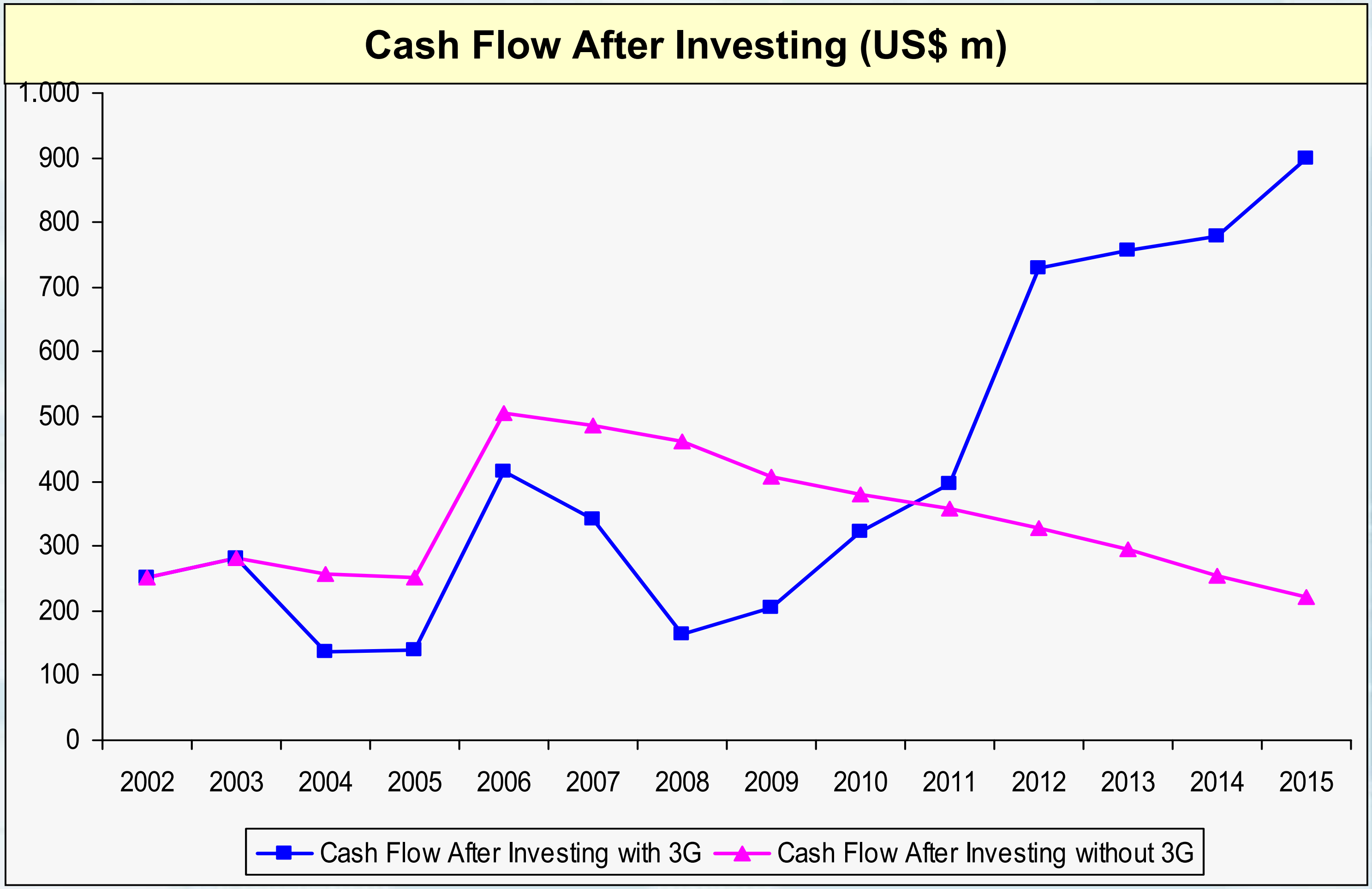

Conclusion of Business Plan

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- Users do not care about technology but services!
- 3G investments is a must for “Champion”
- Market consolidation and “phase-out” of Mini
- Already we see that small operators are leaving market in Europe
- Market consolidation will happen in USA as well
- Business model for the life-cycle (~ year 2015) and network operation IPR costs can dramatically impact the scenario negatively!

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Thank You very much!

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