



World Class Standards

GSM MOU – The Commercial Strategy

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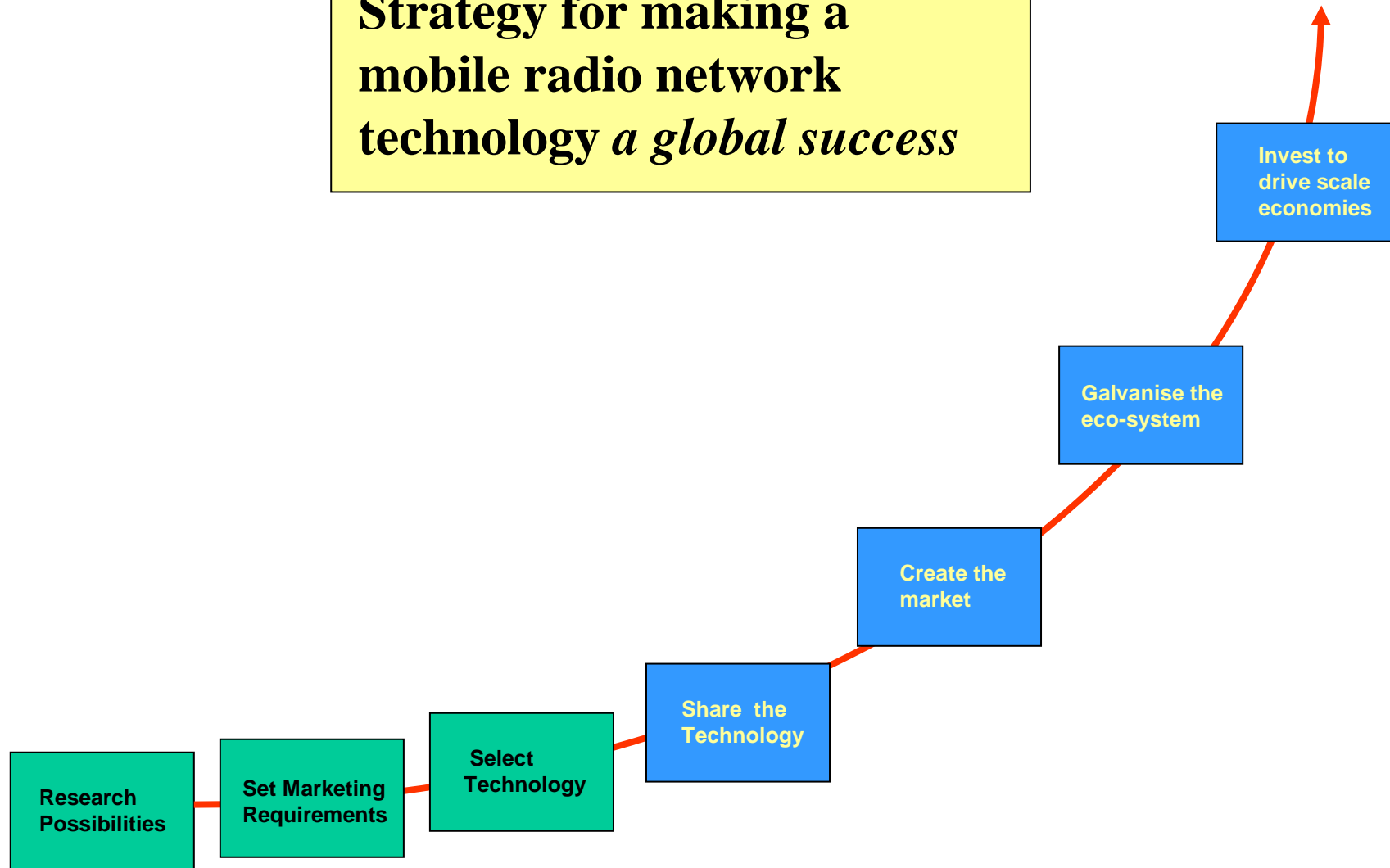
GSM...younger than ever

Lemesos, Cyprus
15 – 16 March 2007

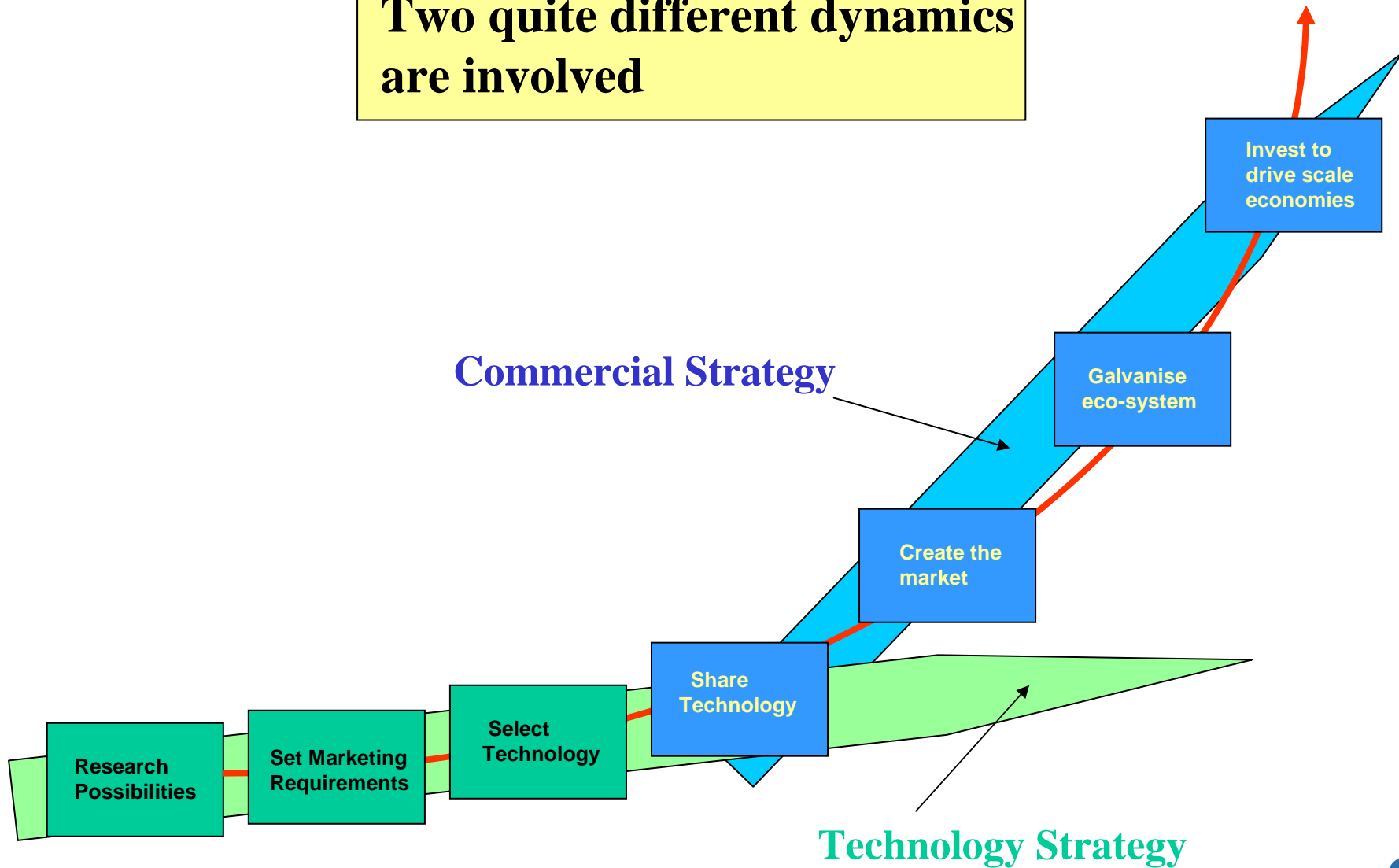


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Strategy for making a mobile radio network technology *a global success*

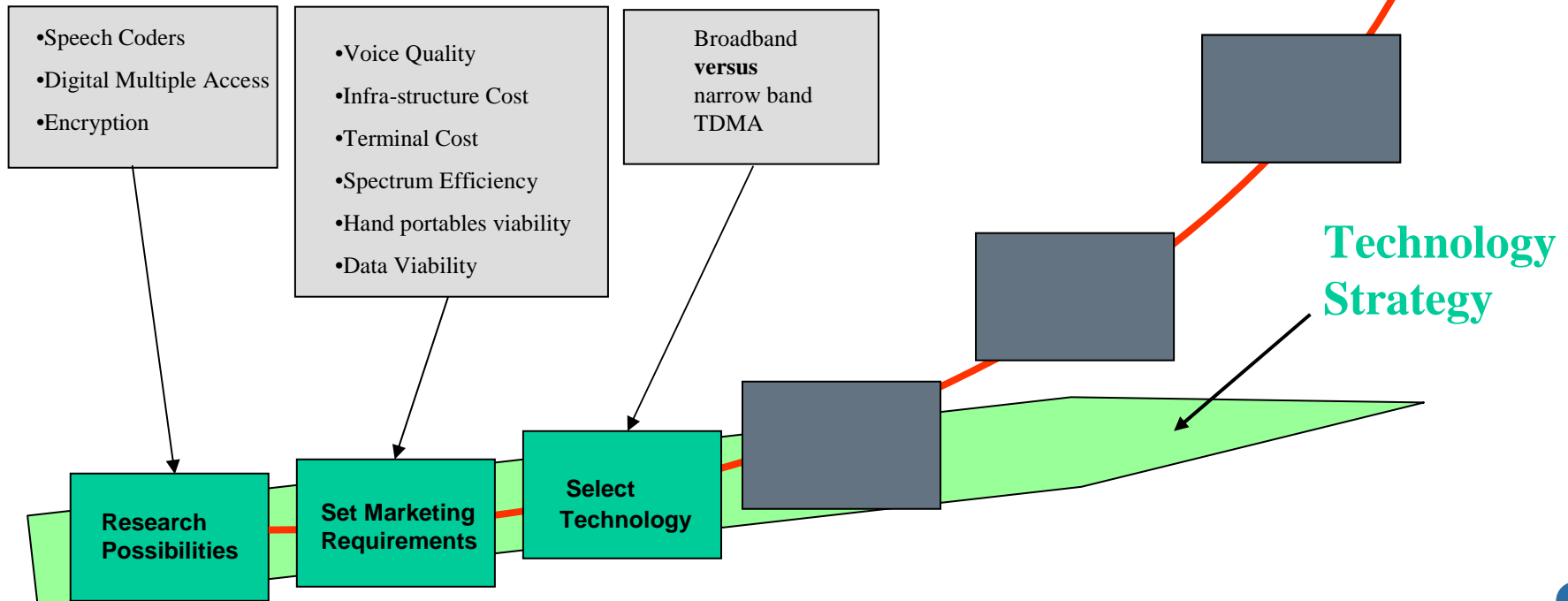


Two quite different dynamics are involved



The Technology Strategy:

Note: The Subject of other presentations

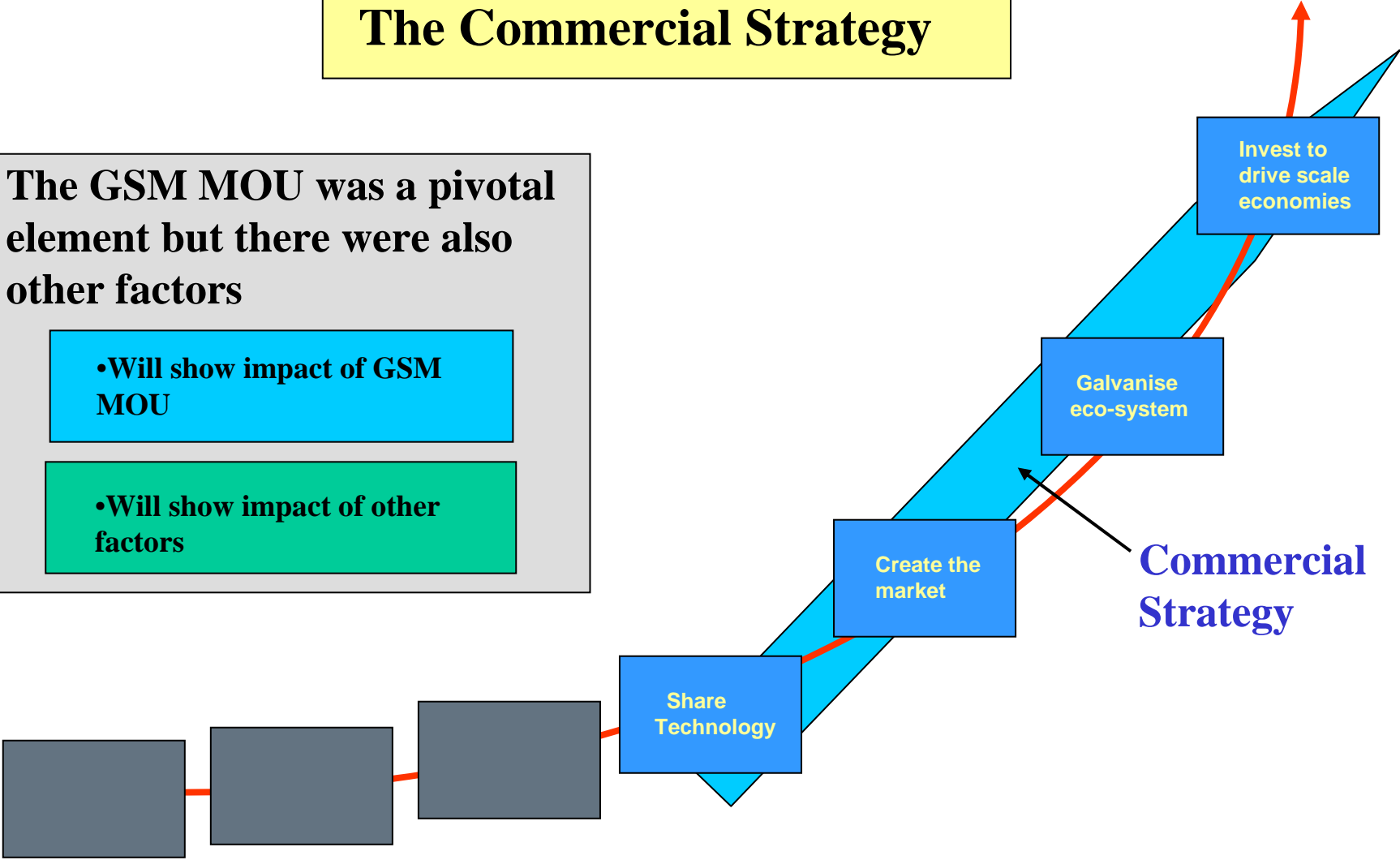




The Commercial Strategy

The GSM MOU was a pivotal element but there were also other factors

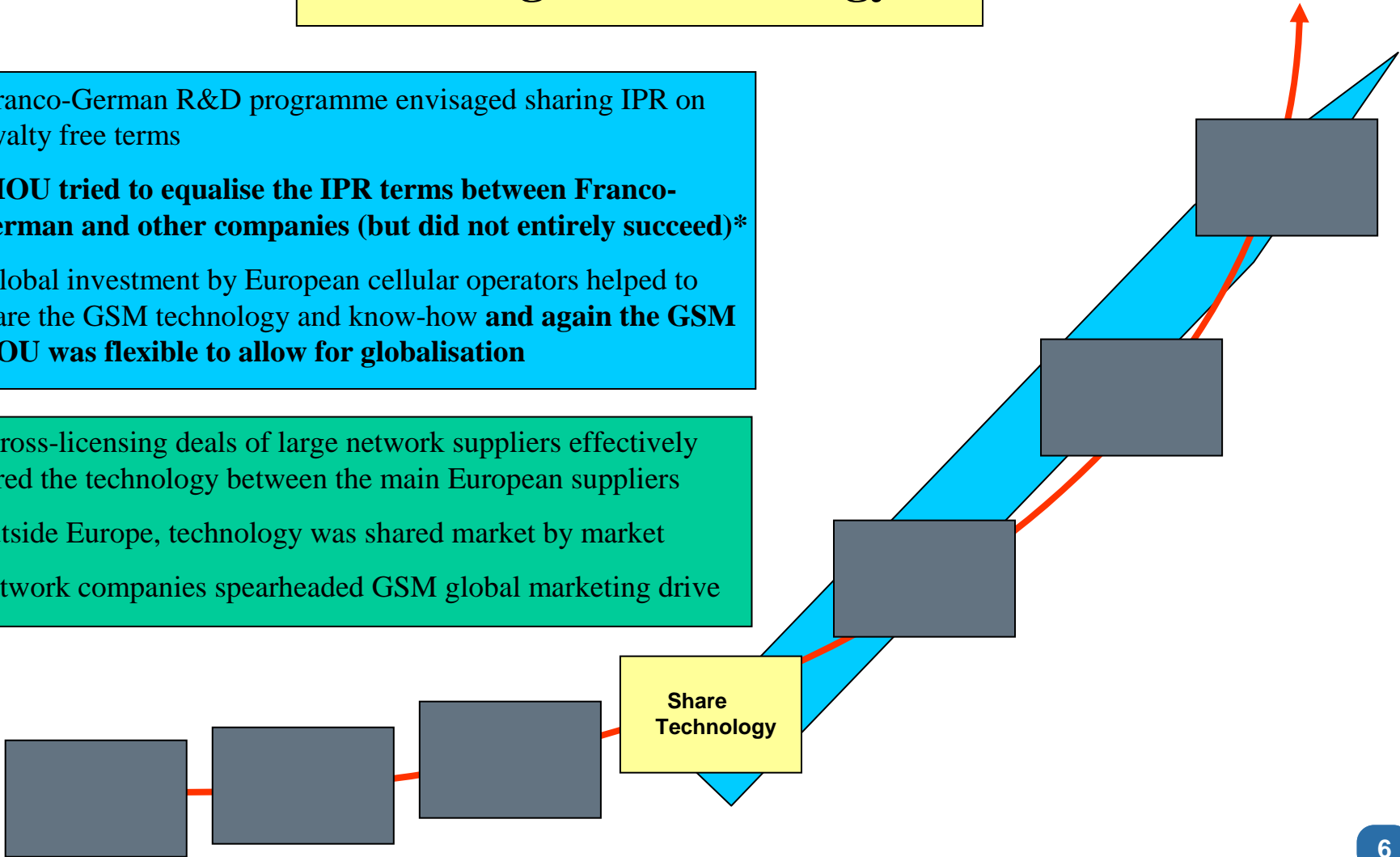
- Will show impact of GSM MOU
- Will show impact of other factors



Sharing the Technology

- Franco-German R&D programme envisaged sharing IPR on royalty free terms
- MOU tried to equalise the IPR terms between Franco-German and other companies (but did not entirely succeed)***
- Global investment by European cellular operators helped to share the GSM technology and know-how **and again the GSM MOU was flexible to allow for globalisation**

- *Cross-licensing deals of large network suppliers effectively shared the technology between the main European suppliers
- Outside Europe, technology was shared market by market
- Network companies spearheaded GSM global marketing drive





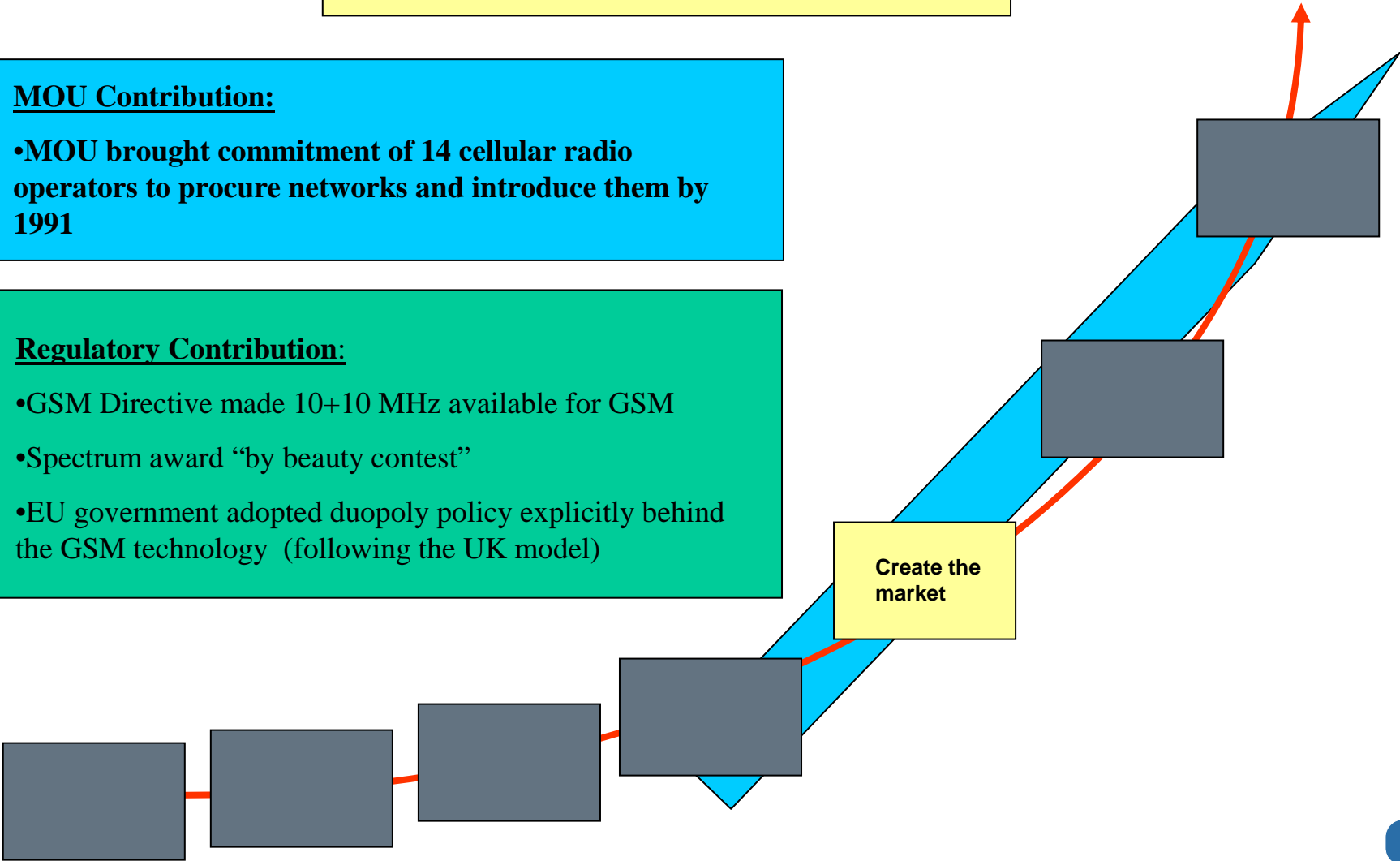
Creating the market

MOU Contribution:

- MOU brought commitment of 14 cellular radio operators to procure networks and introduce them by 1991

Regulatory Contribution:

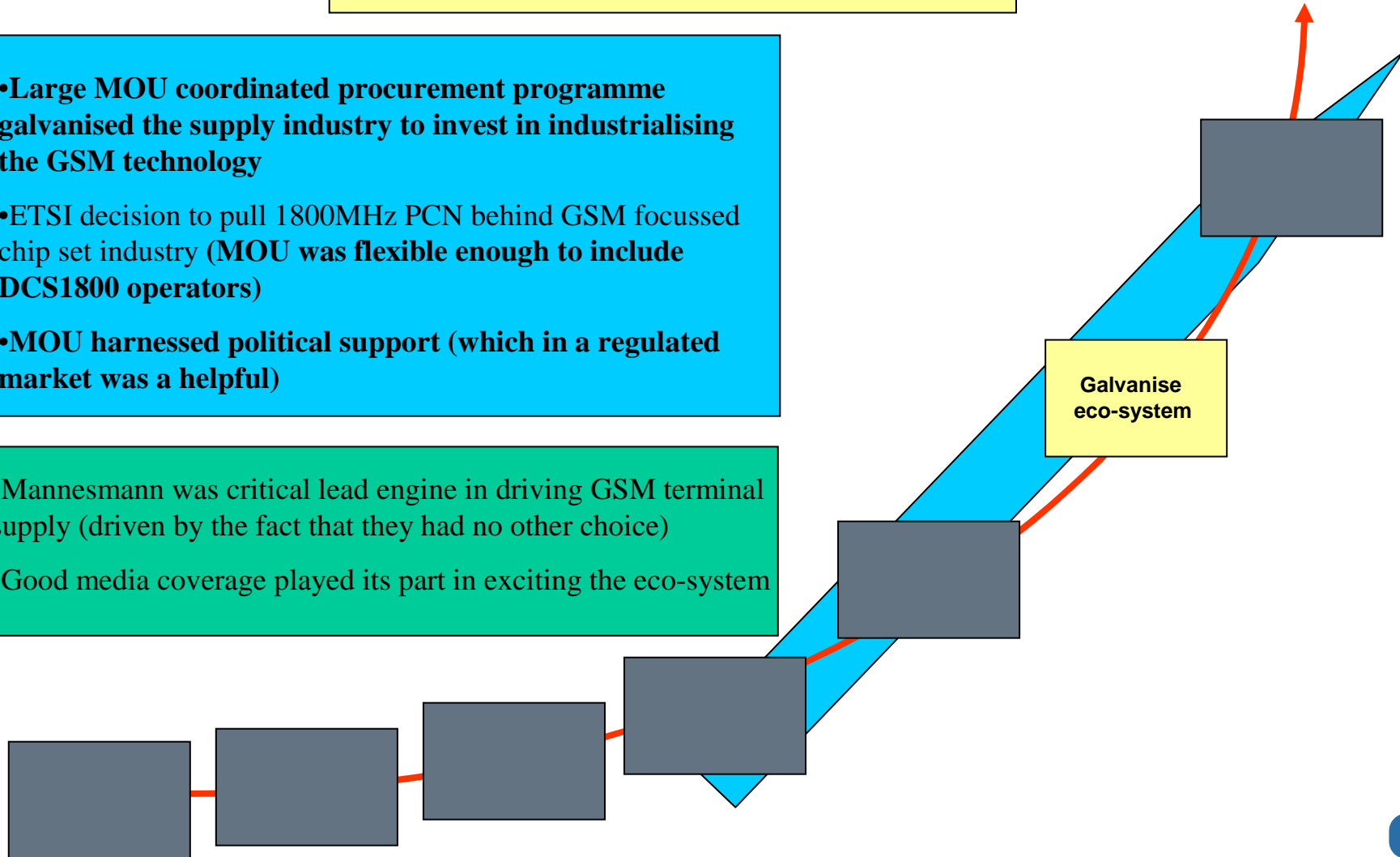
- GSM Directive made 10+10 MHz available for GSM
- Spectrum award “by beauty contest”
- EU government adopted duopoly policy explicitly behind the GSM technology (following the UK model)



Galvanise the eco-system

- **Large MOU coordinated procurement programme galvanised the supply industry to invest in industrialising the GSM technology**
- **ETSI decision to pull 1800MHz PCN behind GSM focussed chip set industry (MOU was flexible enough to include DCS1800 operators)**
- **MOU harnessed political support (which in a regulated market was a help)**

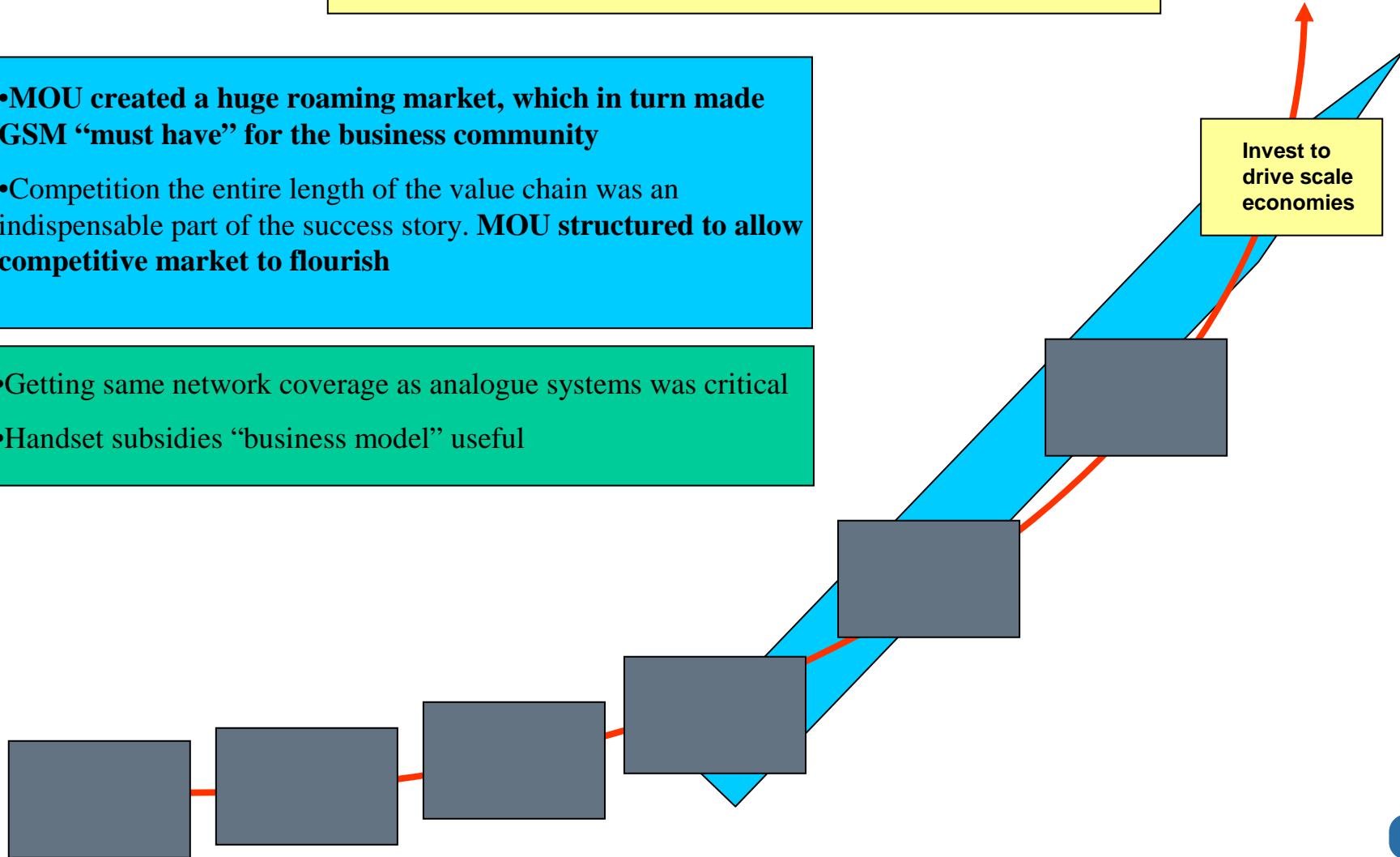
- **Mannesmann was critical lead engine in driving GSM terminal supply (driven by the fact that they had no other choice)**
- **Good media coverage played its part in exciting the eco-system**



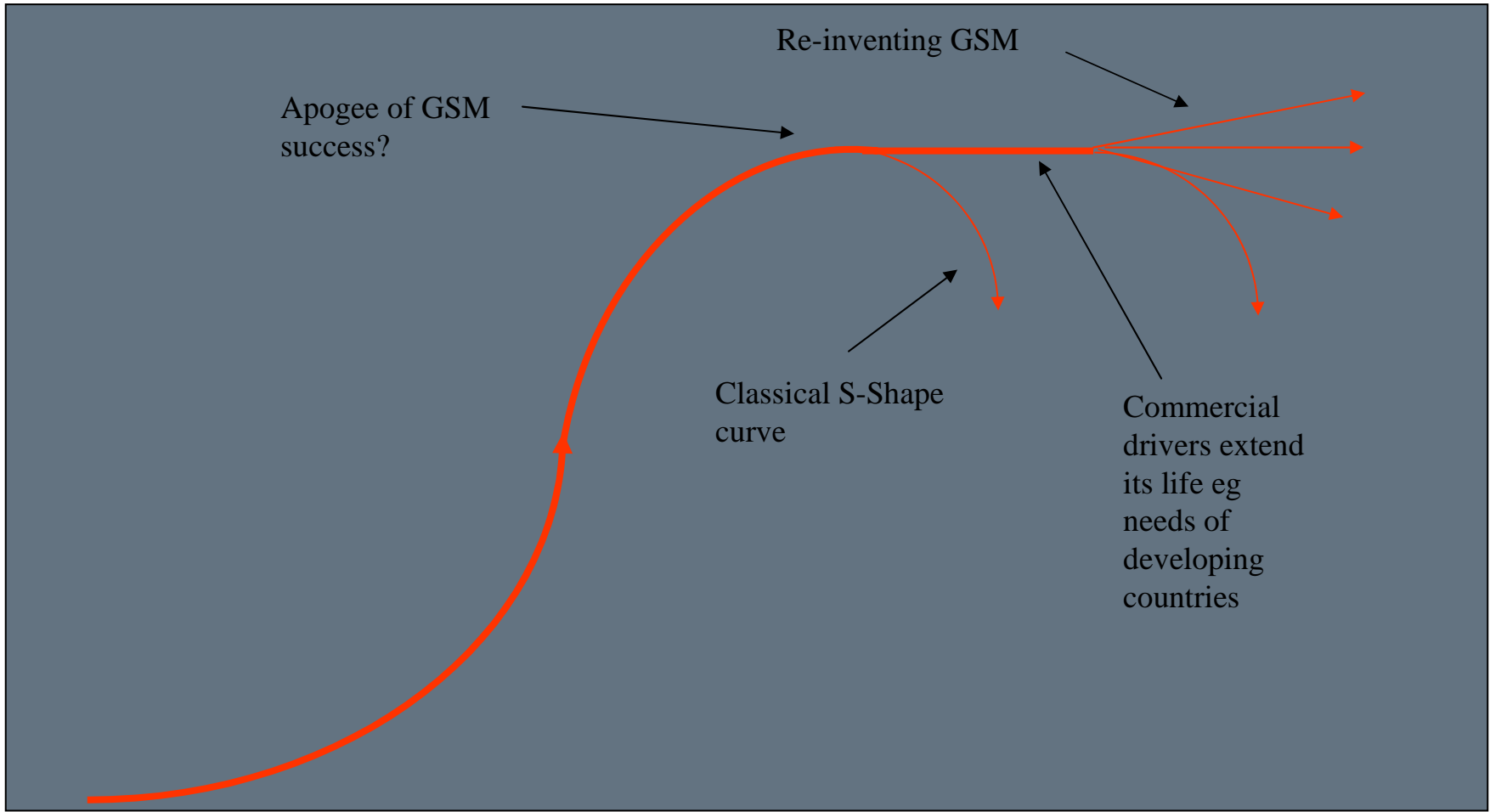
Investing to drive scale economies

- MOU created a huge roaming market, which in turn made GSM “must have” for the business community
- Competition the entire length of the value chain was an indispensable part of the success story. MOU structured to allow competitive market to flourish

- Getting same network coverage as analogue systems was critical
- Handset subsidies “business model” useful



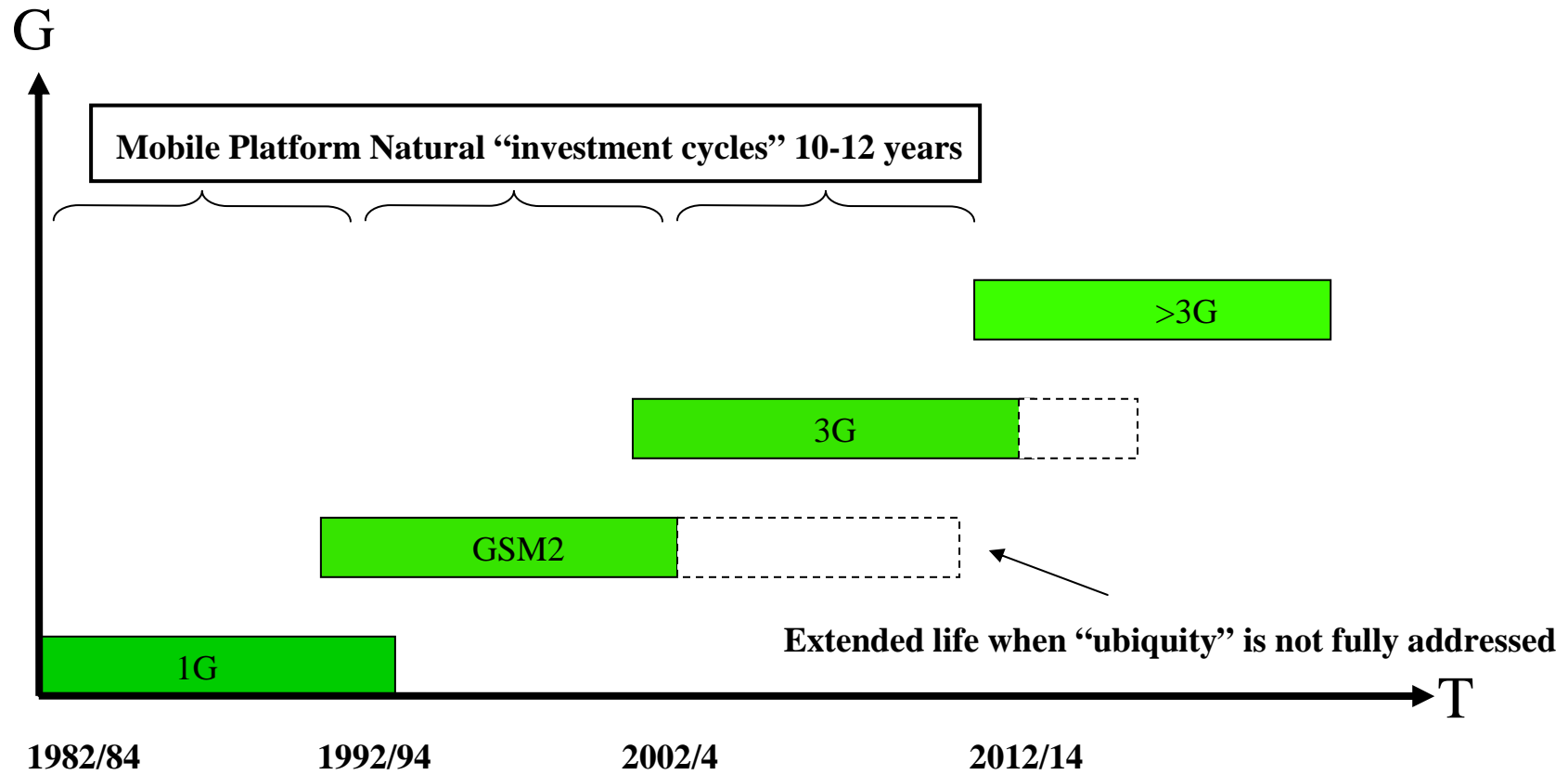
GSM's future commercial strategy



Re-inventing GSM:

- SMS re-invented by young customers (driven by attractive data tariffs relative to voice)
- GPRS creates a ubiquitous “light data” carrier work-horse
- GPRS has enabled MMS (Multi-Media Messaging) over GSM
- EDGE takes the edge off 3G data coverage black-holes as well as providing the most cost effective rural “medium data” solution
- The GSM SIM card has create a de- facto global currency for small transactions in some areas
- GSM coverage ubiquity drives innovation in other sectors eg security of high value loads, remote control & monitoring, road pricing, etc
- Silicon technology advances ensured incredibly low current drain GSM chip sets – allowing dual mode sets that eased 3G’s entry
- GSM plus pod casting pushes the boundaries of GSM for multi-media

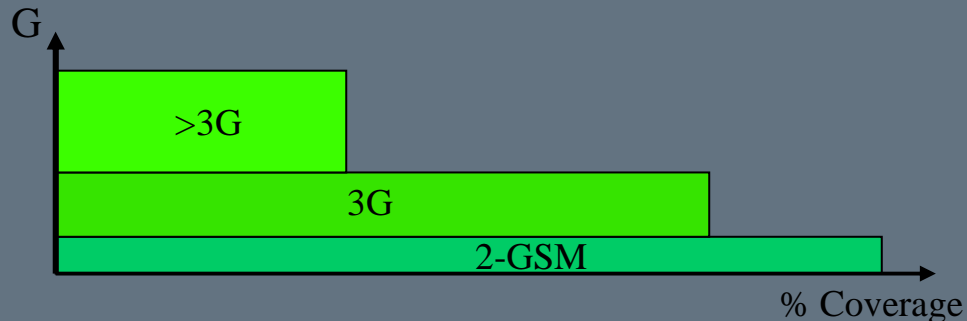
“Next Generation” Theory:





“Next Generation” Practice:

1. Coverage shortfall



2. Terminal parity

Cheapest GSM sets likely to be one third of the price of the cheapest 3G sets *in 5 years from now*

3. Roaming

3G not globally as universal as GSM

4. Cost of forced migration

20m ultra light GSM users in Europe expensive to migrate

5. GSM does the voice job well

Reasons why a large terminal price imbalance will remain:

- 3G sets need a GSM chip-set but GSM sets do not need a 3G chipset

- 3G requires faster processing speed

- More features are being added to 3G handsets eg HSDPA, UMTS900 etc

- The 3G price is being inflated with excessive IPR royalty demands

- GSM volumes are still rising driven by China, India etc

- “What the market can pay” is dragging down GSM handset prices in emerging markets but not 3G

GSM over the next 10 years:

- **Main engine to drive mobile penetration in emerging markets**
- **Low cost solution to address light users in mature markets**
- **Mainstay for rural coverage (ubiquitous coverage sells!!)**
- **Technology of choice for fashion “designer” mobiles**
- **Opportunity to ignite “machine to machine” market (\$6 data modem)**
- **GSM Voice technology for new combinations of technology eg (DVB-H+GSM instead of 3G)**
- **Means to introduce new generations of cellular radio technology in its introductory phase when its coverage is limited eg (4G + GSM) instead of (4G + 3G)**
- **Its market apogee is likely to be 5-10 years out and this will ensure GSM technology sees its 40th birthday**

... GSM remains the world’s most popular and cost effective technology for light voice and medium data requirements and its coverage ubiquity (coupled with 3G WCDMA for Japan) is universal !!!



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...we can look forward with complete confidence to GSM's 30th Birthday and it would be a fair bet to put a date in your diary for GSM's 40th Birthday