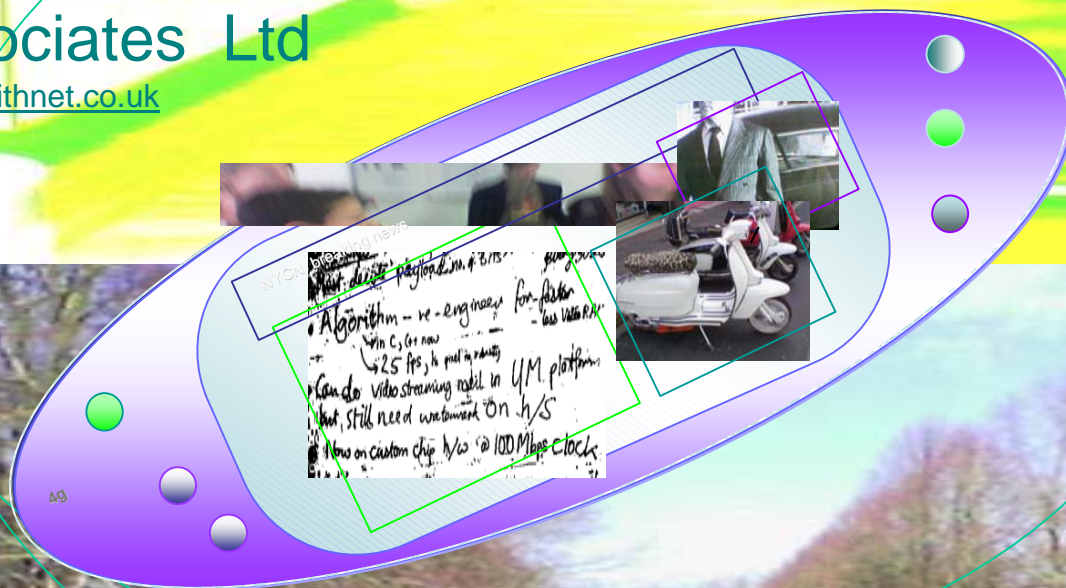


The Need for a Socio-economic Approach in Assessing Spectrum Requirements for Future Mobile Communications Markets and Services

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Ubiquitous Networks and Radio Aspects

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New services have often been mysteries to the industry - greatly underestimated or overestimated

	<i>Telecoms Industry view at launch</i>	<i>The consumer speaks – the ‘street’ view</i>
ISDN	The next generation of telecoms- replace POTS	UK / USA : “Idiot Services users Don’t Need”
WAP	The mobile user will really go for this <i>technology</i>	“WAP is crap” - expensive, no services, difficult to use
Iridium LEOs	Just what the remote business traveller needs	<i>20 times too expensive</i>
Internet/WWW	Ignore.... Oh still there ?!! ..horror -stifle! ..VoIP wins	<i>Just use it (@ no cost)</i>
GSM – digital mobile	An extra (minor) feed for our fixed networks	Just what we need! - till we see the bill ! -so <i>PAYG</i> rules
SMS	Minor supplementary service (CLASS for Mobile)	The <i>only</i> service (mobile or fixed) for many users

While some of the biggest product launches in communications services over the last 20 years have delivered flops, seemingly trivial services have exploded.

We need a better strategy to assess spectrum demands

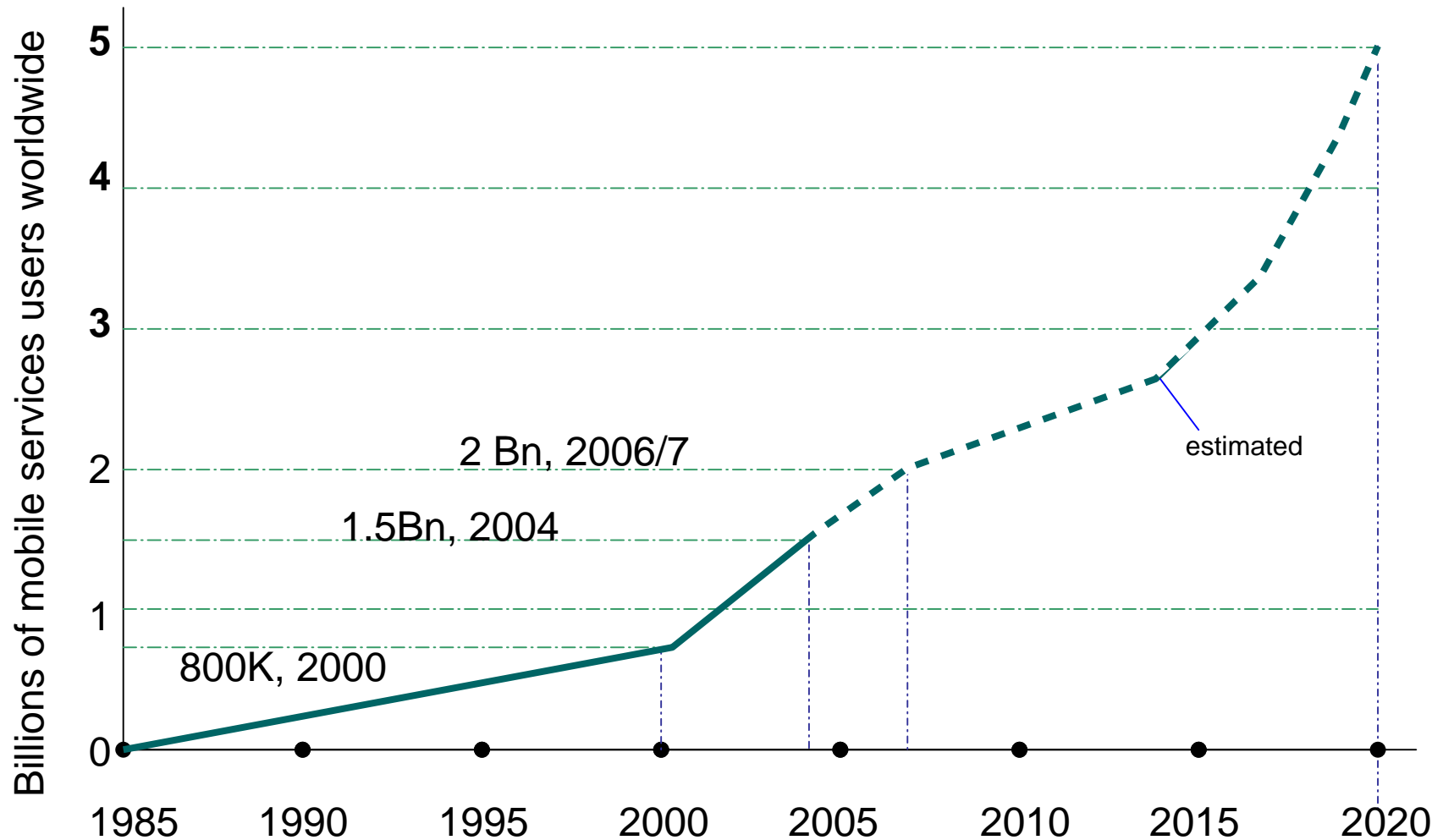
- the underlying concepts and policy need to be improved as we have a rapidly evolving market with exploding demand –
 - a discontinuity in radio technology could occur at any time, in order to cater for a far larger user population than the industry has ever seen before as radio exceeds fixed line, **and this effect is price sensitive**
 - a transformation is under way from a mobile communications market for the transport of plain vanilla voice, over networks, towards a media and commercial transaction environment **and again this effect is price sensitive**

However, many players in the traditional telecommunications world have yet to fully realise these developments will occur.

Any useful approach must take account of this - it should track the most likely path for customer demand based on needs and income and the healthy development of radio services, not biased by a technical view or that of specific short-term interests.

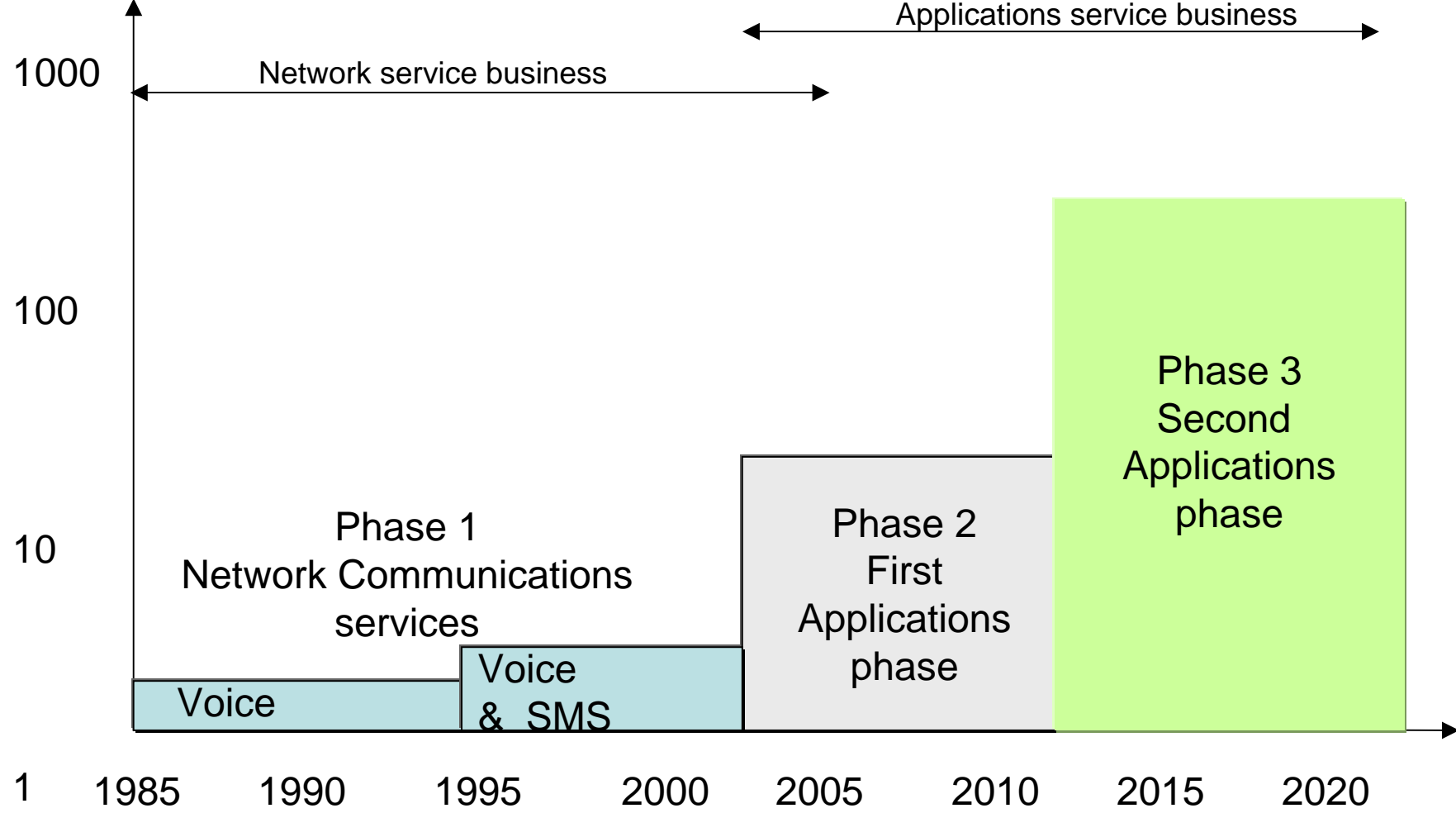
The context – a global user population growth

- With globalisation, costs of services and handsets will slowly be set by average world prices
- Saturation is set by affordable price for the majority of users – numbers which may reach near 65% of a global population of over 7.5Bn by 2020 = 5Bn users



Potential take-up of radio services: from communication to mobile applications relies on a price benevolent context for disposable income levels of the global mass market

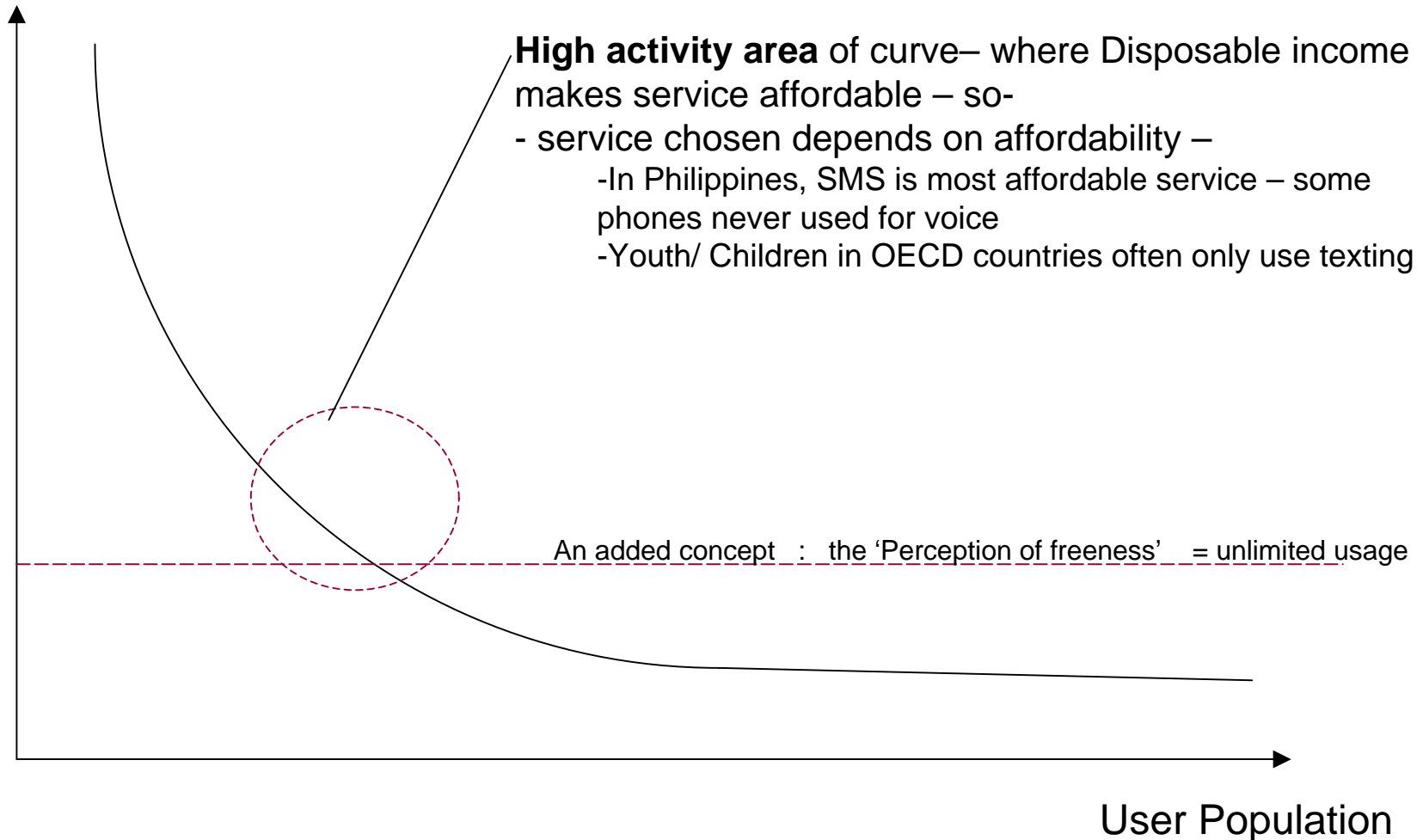
Number of Mobile Applications in mass usage



Usage of a Public Service is dictated by cost

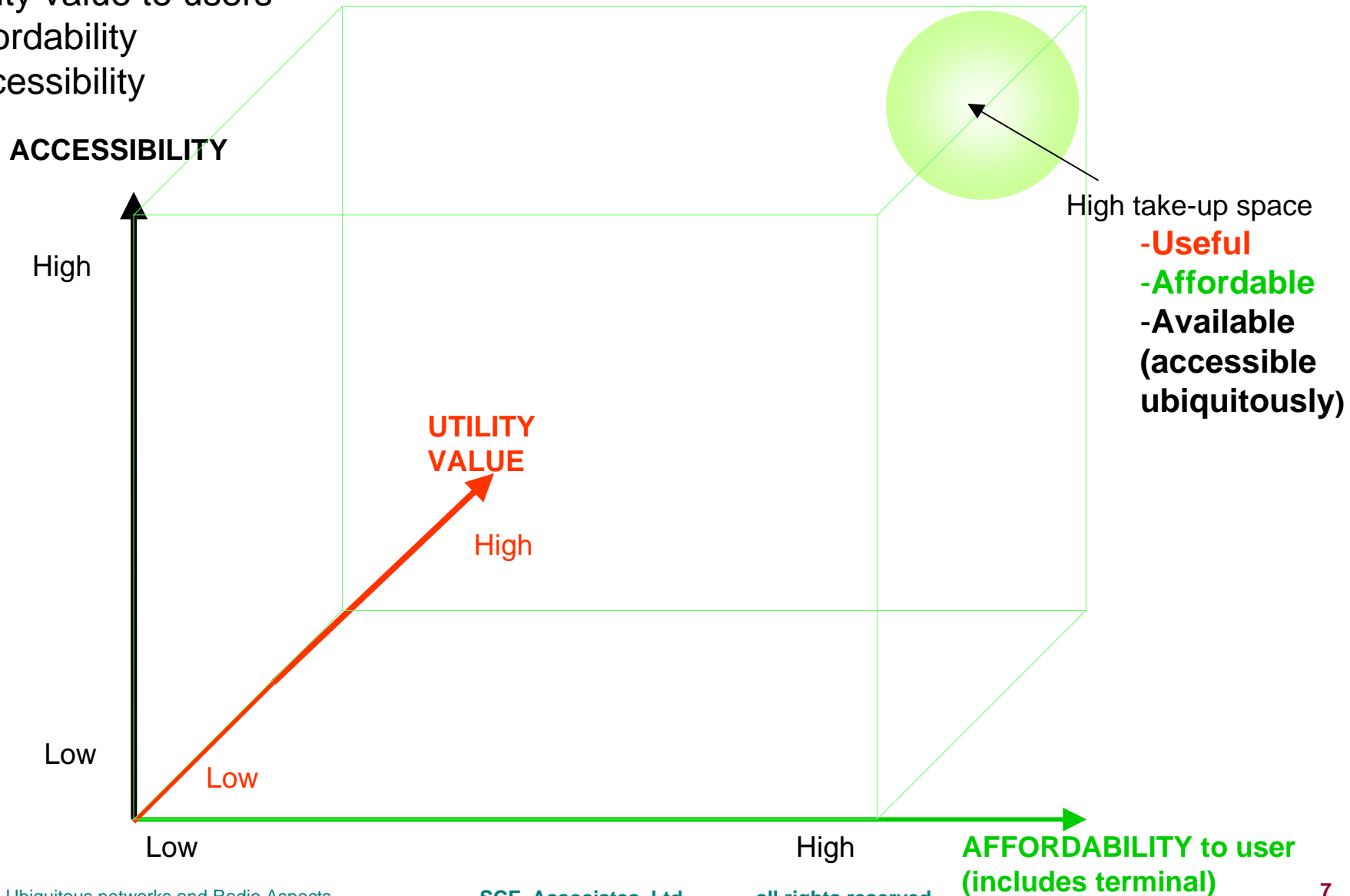
– with demand following to the Dupuit Curve (1840)

Price of service

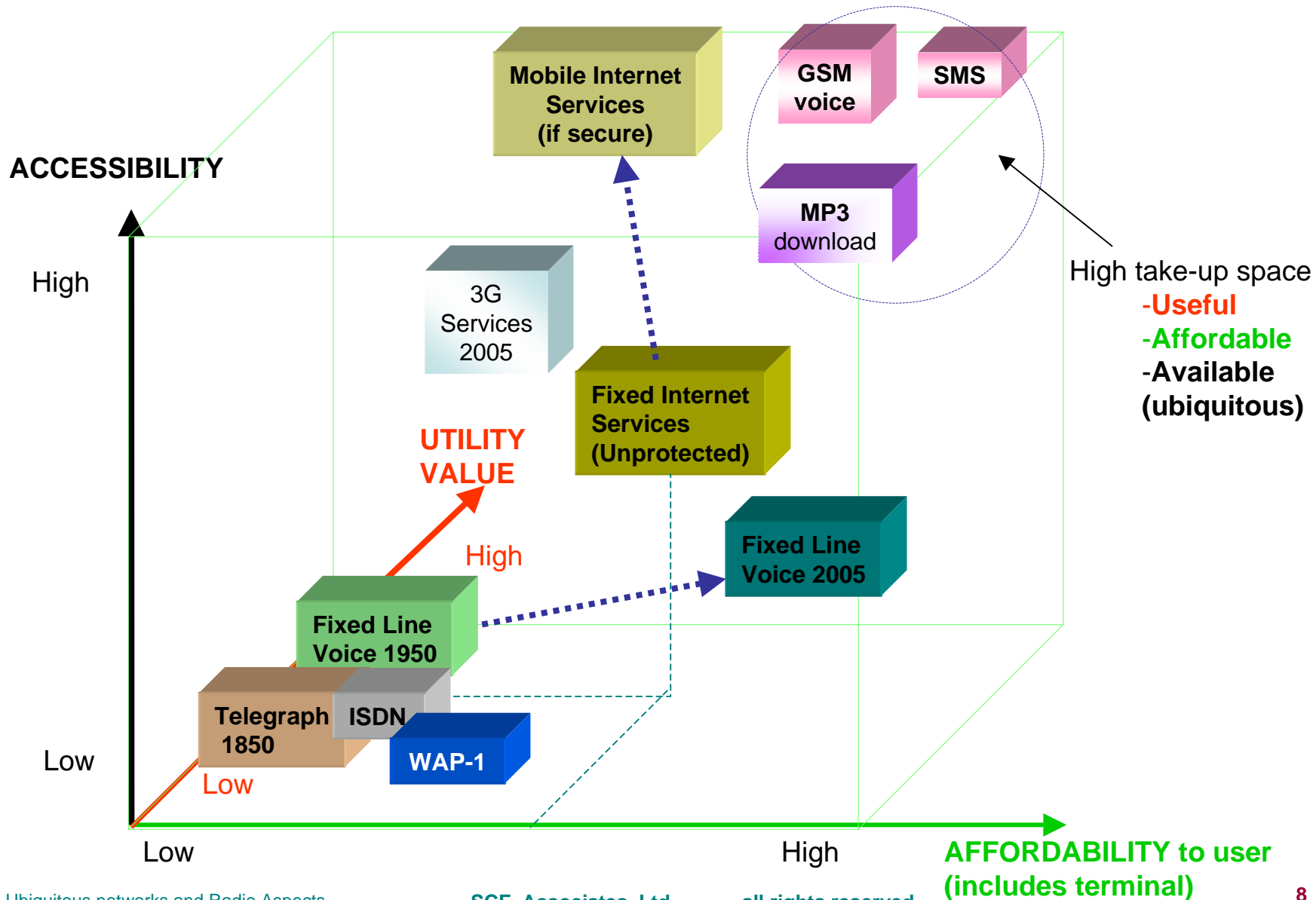


Understanding the potential take-up of services

Measure against:-
-utility value to users
-affordability
-accessibility



Mapping the potential of services to succeed



The strategy going forward in spectrum

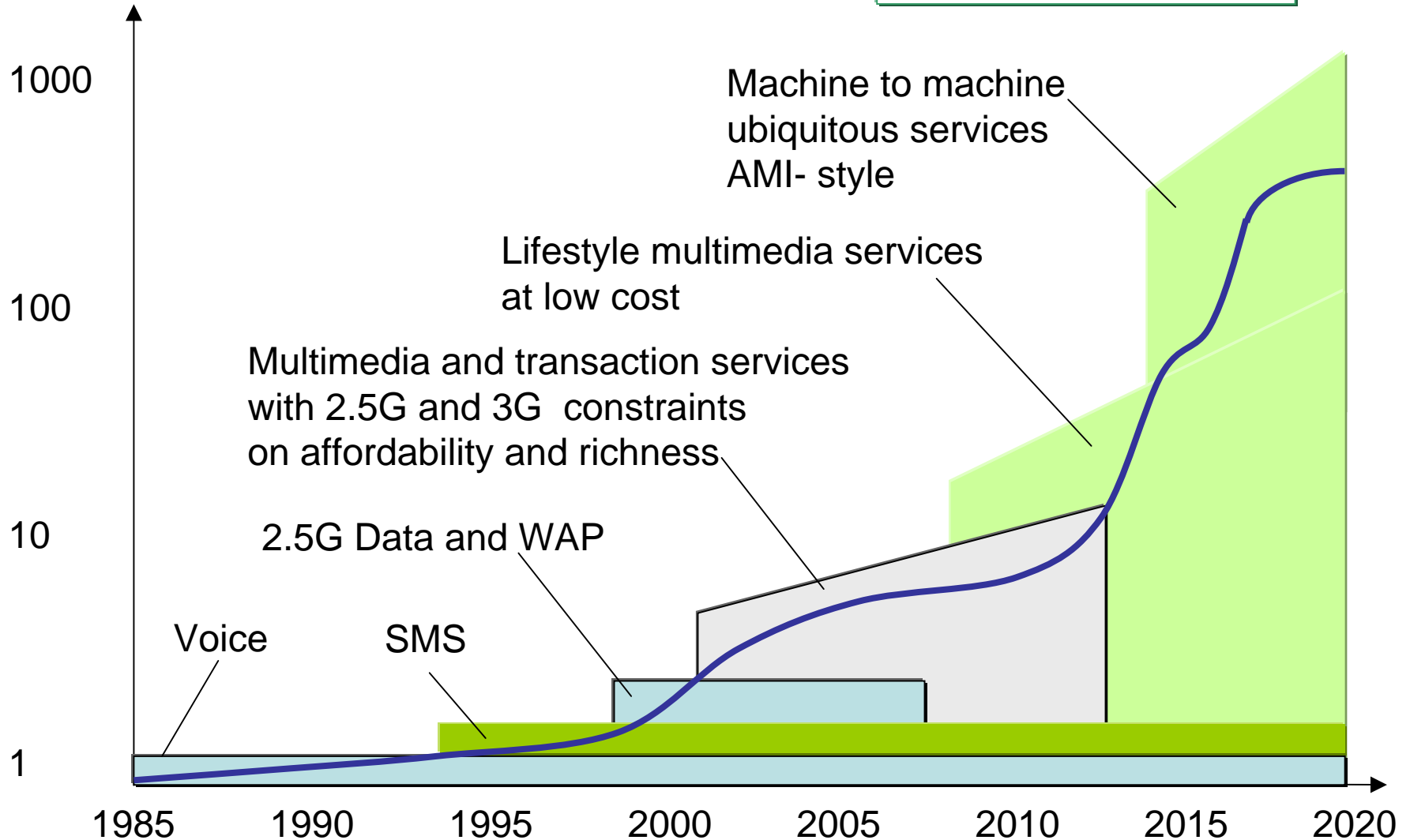
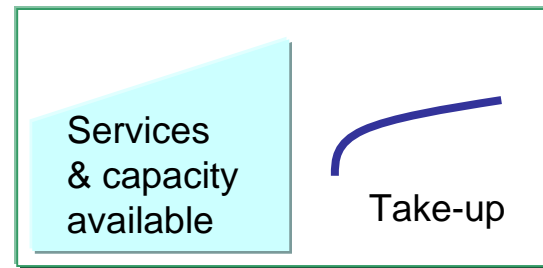
– what form of spectrum allocation suits each type of underlying technology?

	<i>Differentiation mechanism</i>	<i>Usable Freq range (Actual range)</i>	<i>Form of spectrum assignment</i>
2G	FDD & TDD & Limited Spread spectrum CDMA	0.3 – 3.5 GHz (0.45- 2.3 GHz)	Assigned Bands + Guard bands
2.5G	FDD & TDD & Limited Spread spectrum CDMA	0.4 – 3.5 GHz (0.45- 2.3 GHz)	Assigned Bands + Guard bands
3G	Limited Spread spectrum W-CDMA/ CDMA-2000	0.4 – 3.5 GHz (2.5- 3.3GHz)	Assigned Bands + Limited Guard bands
4G	Spread spectrum	Under 5 GHz, possibly 6-10 GHz	Unlicensed spectrum, possibly in bands
Other NON-cellular AWTs* (WiFi etc)	Limited Spread spectrum/other	Under 5 GHz, possibly 6-10 GHz	Unlicensed spectrum, possibly in bands

*Alternative wireless technologies

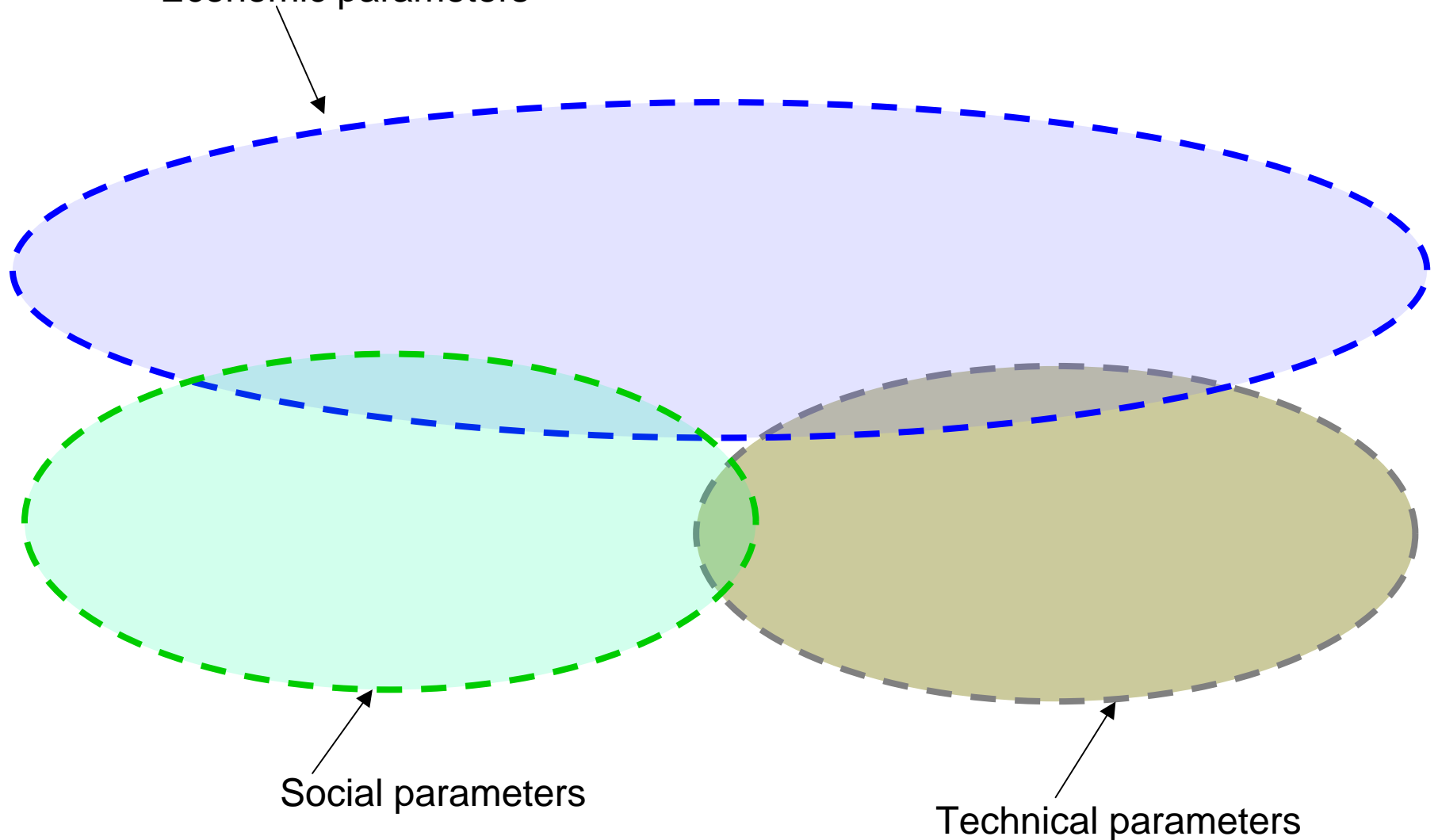
Growth of take-up of radio services

Number of Mobile Applications
in mass usage



Our perspective of demand is economic – it sets social and technical parameters and features

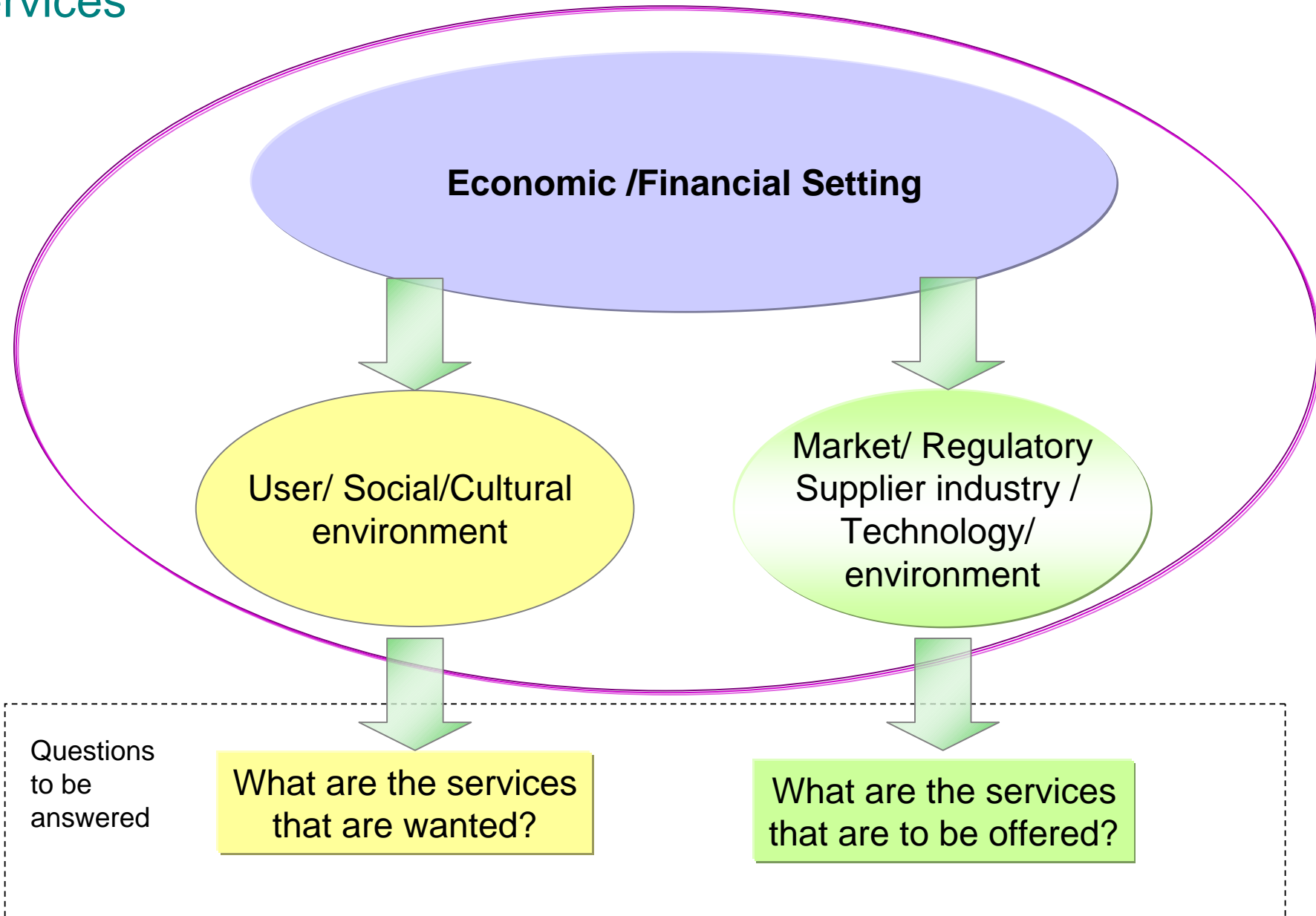
Economic parameters



Social parameters

Technical parameters

Focus on user needs gives a balanced estimate of future mobile services



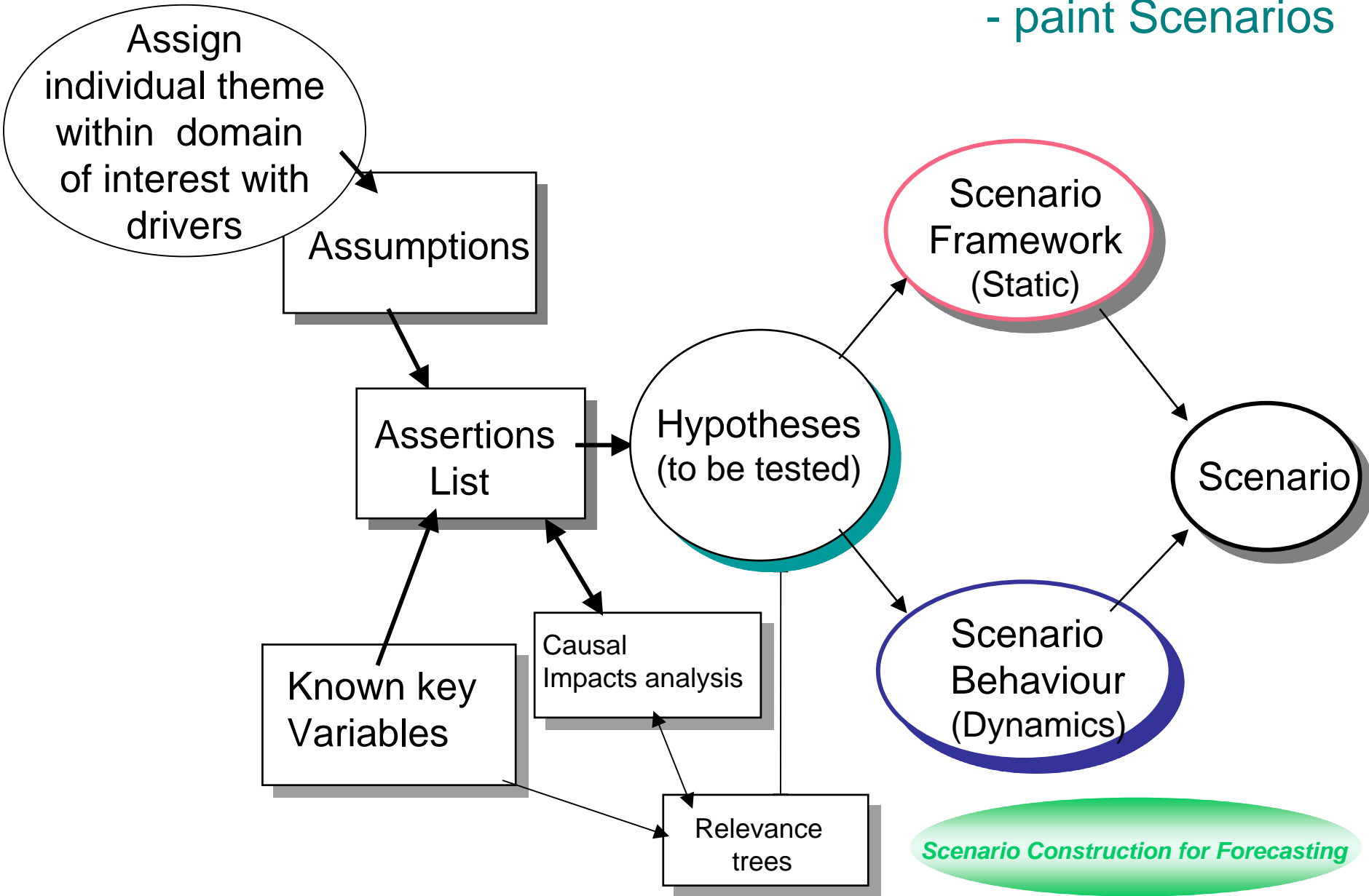
Questions
to be
answered

What are the services
that are wanted?

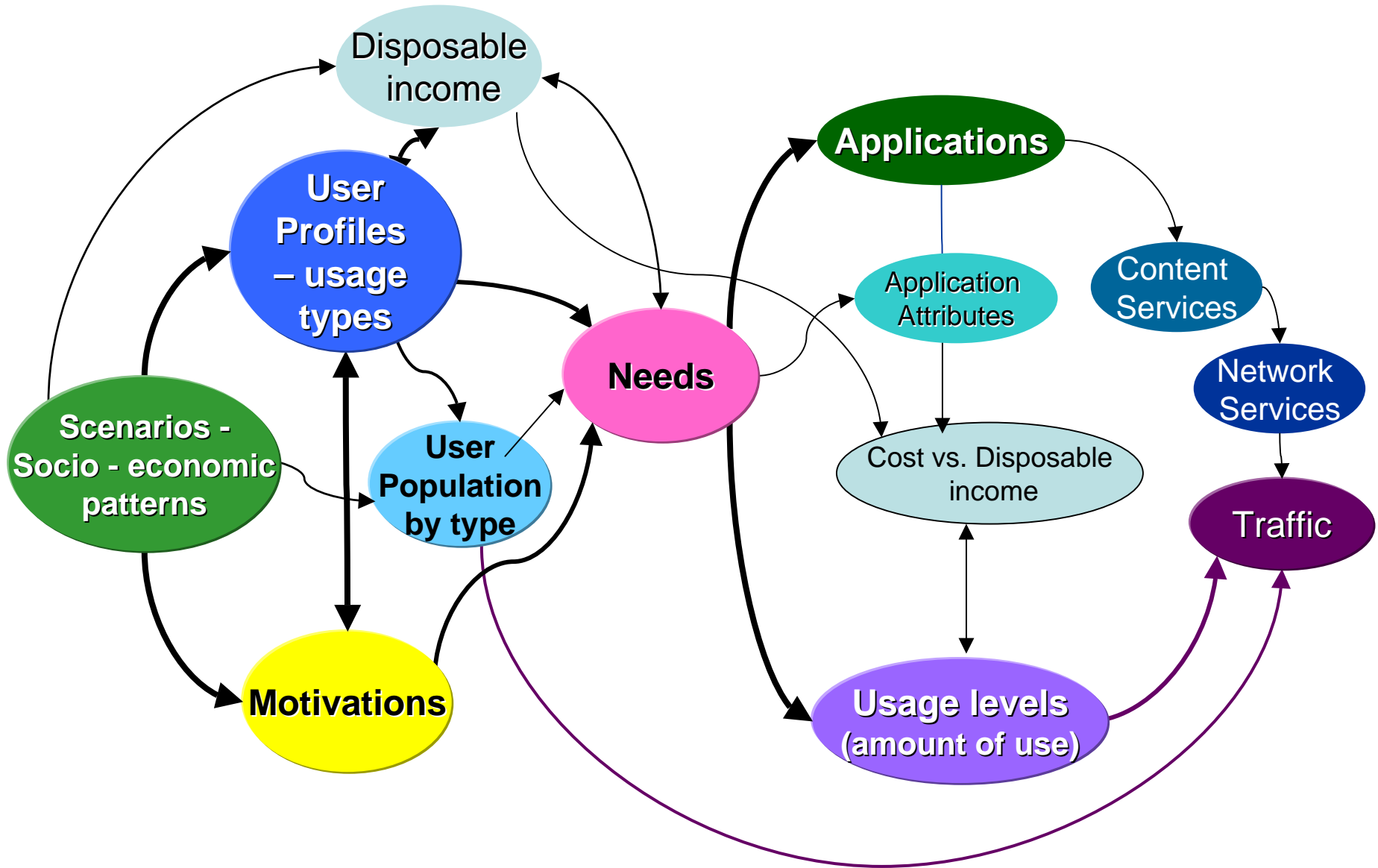
What are the services
that are to be offered?

How can we draw socio-economic pictures of future demand ?

- paint Scenarios

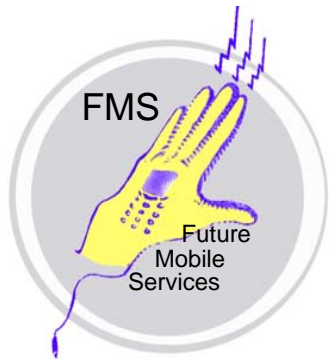


Scenarios generate motivations & user types with needs analysis



- and eventually applications, services, content and traffic

The study for IPTS :-



IPTS /DG JRC/EC

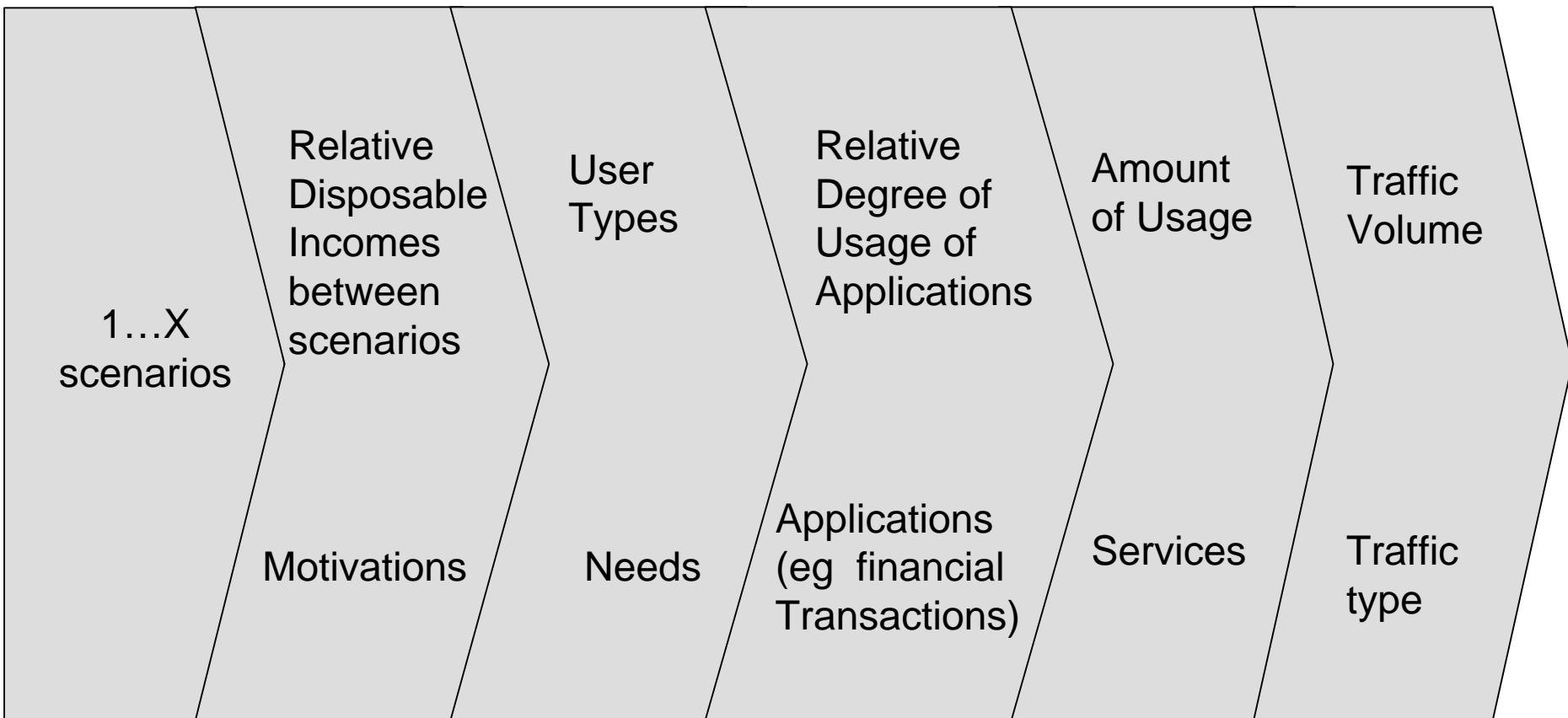
Future Mobile Services and Markets in Europe

<http://fms.jrc.es>

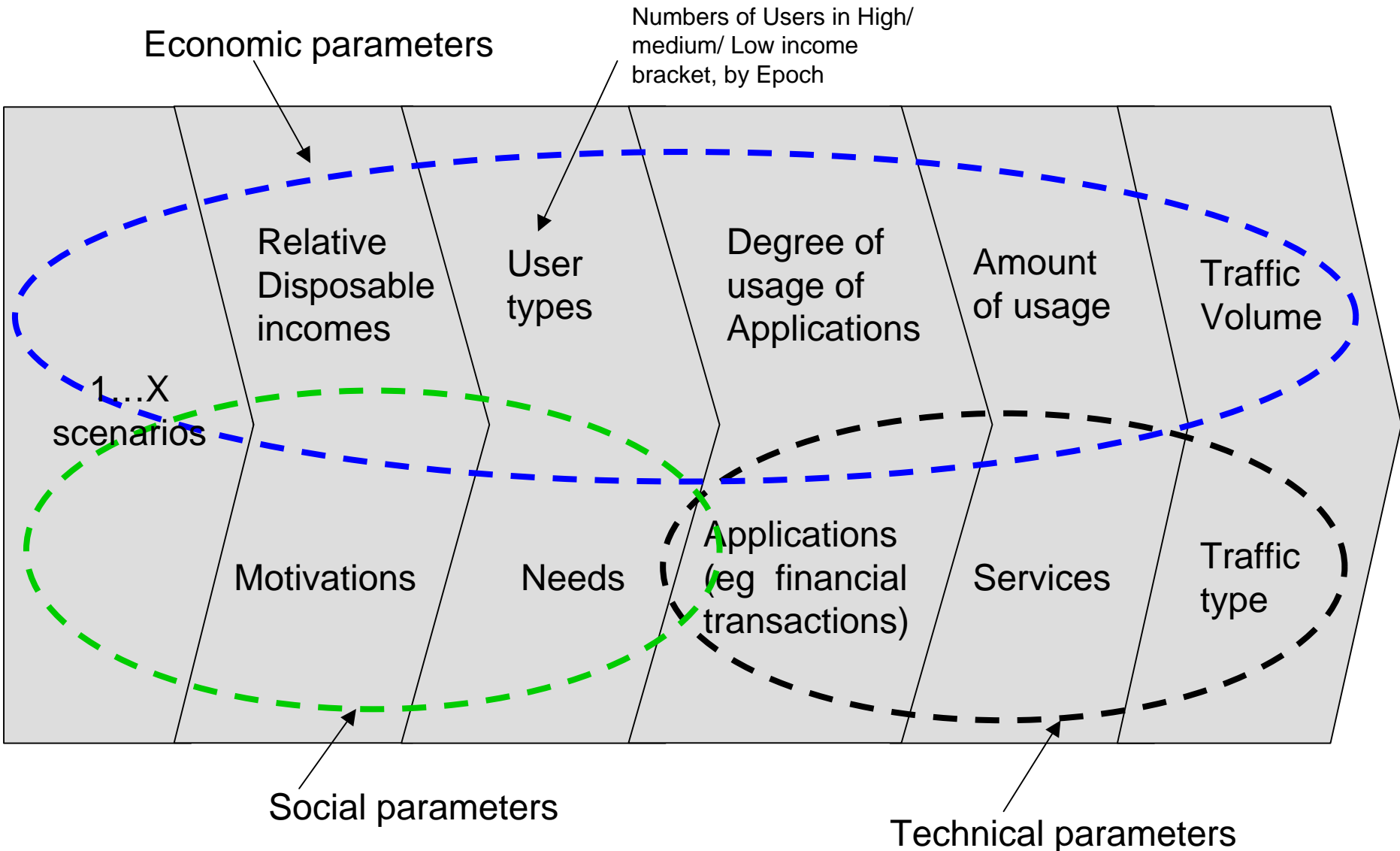
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Colin Blackman
Eric Bohlin***

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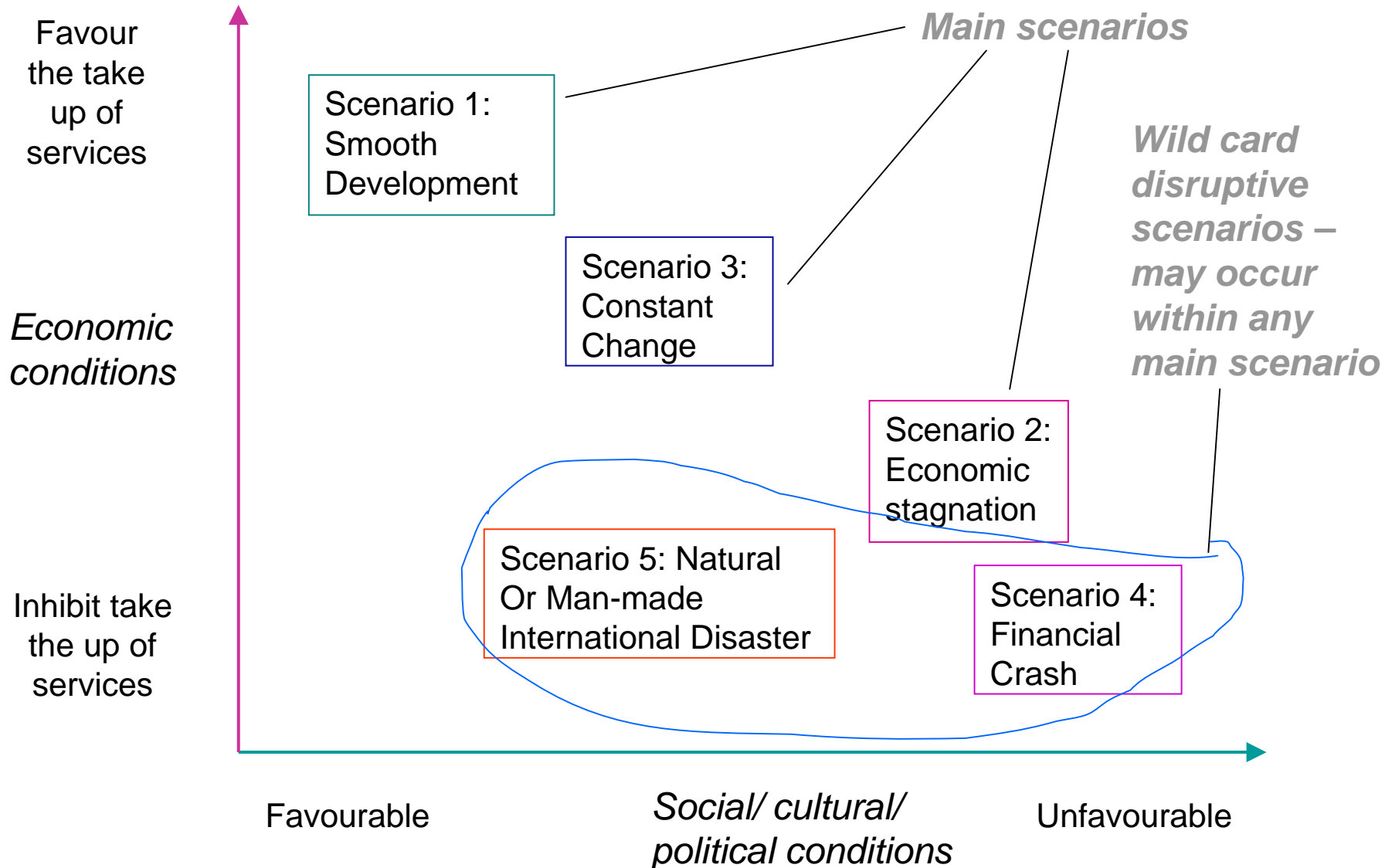
The whole FMS method can be summarised as 6 steps – based on the economic, social and technical parameters



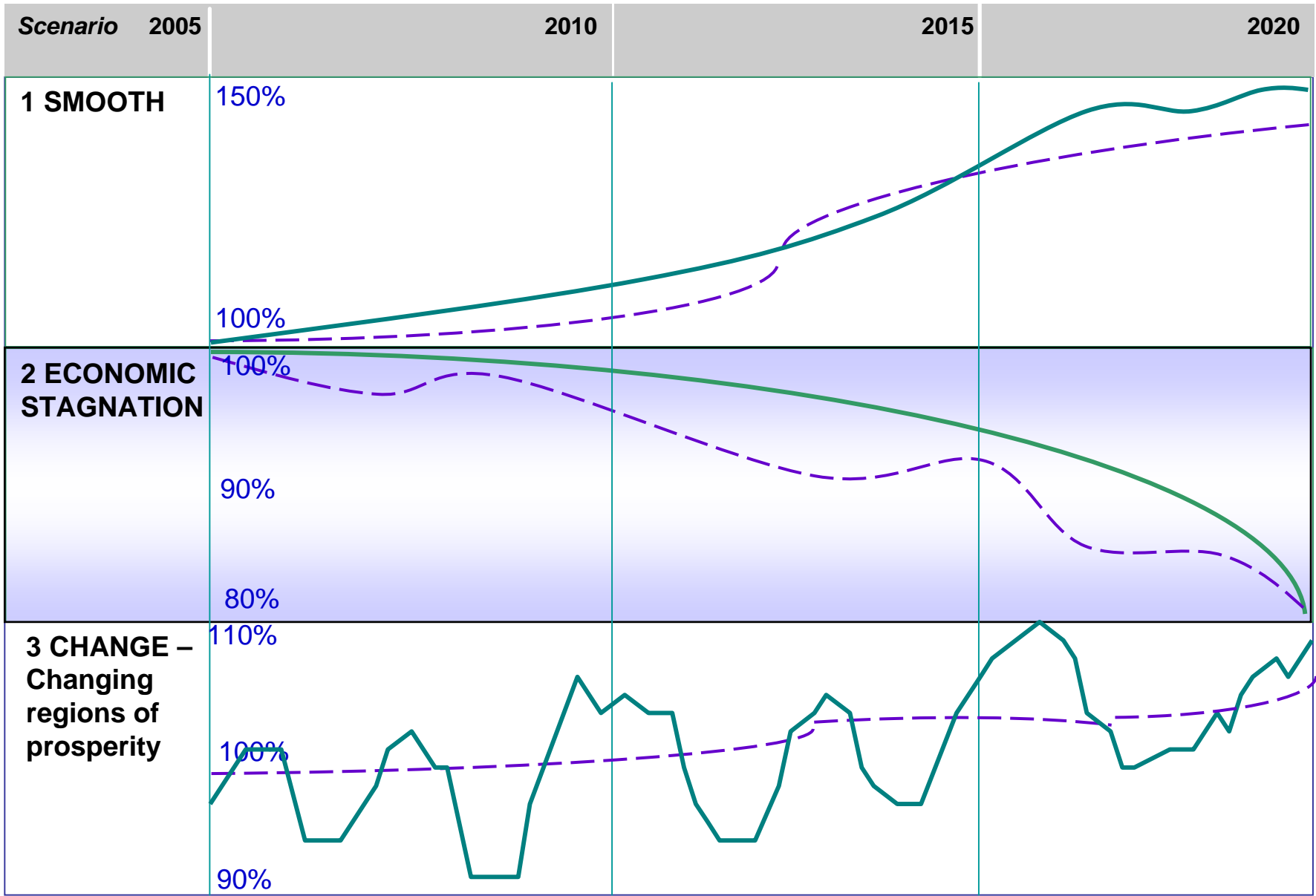
The FMS method can be mapped on to the economic, social and technical parameters



Mapping scenarios - against the economic and sociological conditions



Comparing development in the Main Socio-Economic Scenarios



EU Economic output ——— *Mean Disposable income 2005 -2020* - - - -

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