

# Expert Views of Future Technologies: E- and M-Commerce

Where e- & m-commerce will certainly impact, where it will certainly not, and where the jury is still out

**Malcolm Ross, Principal, Merlin Consulting Ltd.**

PO Box 153, 46 West Street Street, CMR 01, Valletta, Malta

Tel: +49+177-625 2656 Internet: malcolmross1@compuserve.com

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**Re-thinking the Digital Future: Impact, Trends and Challenges**

**Wolfberg Think Tank, 1<sup>st</sup> – 2<sup>nd</sup> July 2004**

## Summary

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**Let's not get lost trying to define exactly what we are talking about with e- & m-commerce!**

- **Commerce, the buying, selling and exchange of goods, services, information, money, opinions and attitudes is one cornerstone of our civilisation**
- **In e-commerce the buying, selling, exchange mechanism is electronic/digital .....**
  - ▶▶▶ Amazon: find, order and pay electronically to receive a physical book
- **.....or the goods, services, information, money, opinion or attitudes are in electronic/digital form .....**
  - ▶▶▶ Buy in a shop a pre-paid card to download ring-tones
- **..... or both**
  - ▶▶▶ Find, order, pay for and down-load music from i-Tunes
- **m-commerce facilitates e-commerce through (usually personal) devices that can also be used while mobile or „away from base“**
  - ▶▶▶ Couch-potatoes voting on TV game-shows by mobile phone
  - ▶▶▶ Down-loading e-mails while at a Starbucks WLAN hot-spot
  - ▶▶▶ Showing off to a friend where you are with a video- or photo- phone

## Summary

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### Why should we worry about definitions? We shouldn't need to, but it enables bureaucrats to invent new regulators and create useless jobs!

- electronic commerce, also e-business, a term for all kinds of business that are established electronically especially over the Internet. This includes both electronic sale (internet shops) and B2B transactions, i.e. business between two companies. For e-commerce standards and/or standardization bodies see ebXML, EDI, or RosettaNet.  
[www.softwareag.com/xml/about/glossary.htm](http://www.softwareag.com/xml/about/glossary.htm)
- (EC) The conducting of business communication and transactions over networks and through computers. As most restrictively defined, electronic commerce is the buying and selling of goods and services, and the transfer of funds, through digital communications. However EC also includes all inter-company and intra-company functions (such as marketing, finance, manufacturing, selling, and negotiation) that enable commerce and use electronic mail, EDI, file transfer, fax, video conferencing, workflow, or interaction with a remote computer. Electronic commerce also includes buying and selling over the World-Wide Web and the Internet, electronic funds transfer, smart cards, digital cash (e.g. Mondex), and all other ways of doing business over digital networks. (This definition is from Dictionary.com)  
[www.nref.com/dictionary.html](http://www.nref.com/dictionary.html)
- Existing laws about the sale and supply of goods and services, consumer protection, credit card fraud and so forth apply in E-Commerce. In addition, there are special laws about electronic signatures and the interception of communications. The global nature of the Internet poses difficult legal problems.  
[www.lawyerlocator.co.uk/glossary.php3](http://www.lawyerlocator.co.uk/glossary.php3)
- E-commerce (or electronic commerce) is any business transaction whose price or essential terms were negotiated over an online system such as an Internet, Extranet, Electronic Data Interchange network, or electronic mail system. It does not include transactions negotiated via facsimile machine or switched telephone network, or payments made online for transactions whose terms were negotiated offline.  
[help.econ.census.gov/econhelp/glossary/](http://help.econ.census.gov/econhelp/glossary/)
- The act of conducting business on-line, e-commerce may include buying and selling products with digital cash and via electronic data interchange.  
[www.course.com/careers/glossary/internet.cfm](http://www.course.com/careers/glossary/internet.cfm)
- Business which takes place between companies using services such as the Internet, Electronic Data Interchange, or Electronic File Transfer. Two companies—the supplier and the customer—can transmit inquiries, orders, invoices, or payments directly through their computer systems.  
[usa.visa.com/business/merchants/online\\_trans\\_glossary.html](http://usa.visa.com/business/merchants/online_trans_glossary.html)
- Electronic commerce: the conducting of business communication and transactions over networks and through computers. Specifically, ecommerce is the buying and selling of goods and services, and the transfer of funds, through digital communications.  
[ikjeld.com/info/glossary/glossaryE.html](http://ikjeld.com/info/glossary/glossaryE.html)
- Business that takes place between companies using services such as the Internet, Electronic data Interchange or Electronic File transfer. Two companies, one the supplier and the other the customer can transmit inquiries, orders, invoices, payments etc. directly through their computer systems.  
[www.cvc2.org/survival\\_guide/web/web20a.htm](http://www.cvc2.org/survival_guide/web/web20a.htm)
- The end-to-end digital exchange of all information needed to conduct business. Examples include EDI transactions, electronic mail, archives, audit trails, and all forms of records, including graphical images. Electronic Data Interchange (EDI), Electronic Funds Transfer, (EFT) and Continuous Acquisition and Life-cycle Support (CALS).  
[www.upstreamcio.com/glossary.asp](http://www.upstreamcio.com/glossary.asp)
- Business Mobile commerce: referring to all forms of e-commerce that take place when a consumer makes an online purchase using a mobile device such as a WAP phone or wireless PDA, WED, WID or mobile computer.  
[www.nottingham.ac.uk/cyber/fullglos.html](http://www.nottingham.ac.uk/cyber/fullglos.html)
- A term referring to Mobile Commerce, a hybrid of e-commerce. Mobile commerce is effectively the ability to conduct monetary transactions via a mobile device, such as a WAP enabled cell phone. M-commerce is seen as the Holy Grail of the wireless device market.  
[www.indbazaar.com/netguide/index1.asp](http://www.indbazaar.com/netguide/index1.asp)
- Mobile e-commerce E-Commerce that responds to a user's physical location, with the possibility of other criteria being factored in as well. For example, a car wash web site might call cell phone users who pass with a mile and offer a discount if they come in in the next hour. Or a clothing store web site might call passing shoppers to invite them in for a dollar-off coupon on umbrellas when rain is in the forecast. L-Commerce is one of two terms for this technology - see I-Commerce.  
[www.sicad.de/pages/produkte/technologie/sicad\\_lbs/glossary\\_lbs.html](http://www.sicad.de/pages/produkte/technologie/sicad_lbs/glossary_lbs.html)

## Summary

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### What should excite us today is how e/m-commerce will substitute & enhance existing commerce and create new commerce

- **Over-hype of e/m-commerce was one key factor in the Internet meltdown**
  - The belief from 1995 – 2000 that it would be a major contributor to Internet traffic „doubling every 100 days“ when it doubled every year led to a  $2^{5 \times 3.65}$  over-build of digital transmission capacity!
- **The financial-industry's lost confidence in the telecom's industry, wiping \$1,000 Billion stock market value; has still not recovered**
- **Should investors, executives, innovators start again to put more attention into e/m-commerce as one key element in the next phase of development of our business &/or community?**

## Summary

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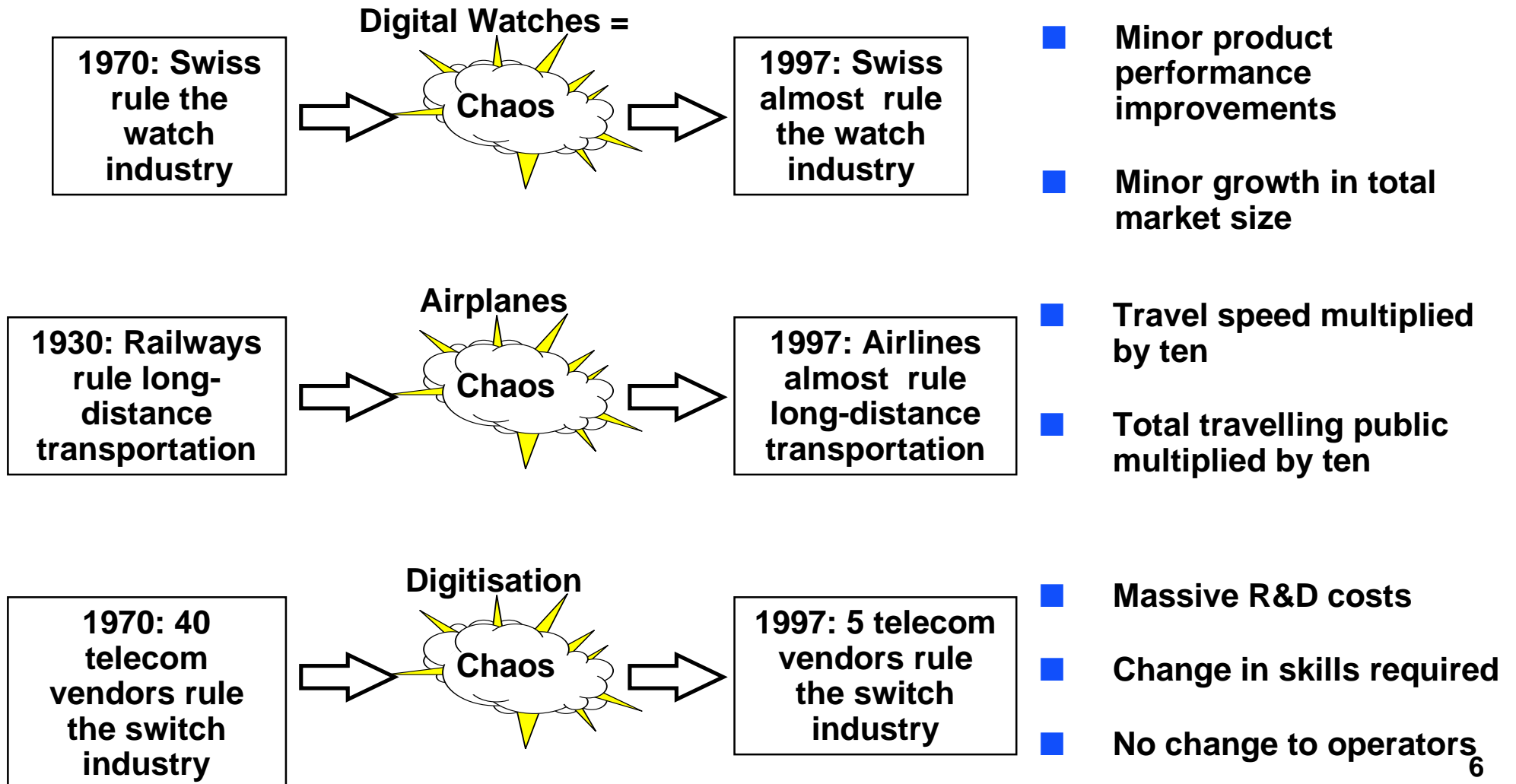
**We suggest 7 empirical guidelines for distinguishing where e/m-commerce might become key, where to forget it, and where to apply „navigating in the fog“**

- **Whether incumbents or new-comers win correlates with the degree of change in performance and in market size**
- **e/m-commerce will have negligible impact on telecom operators**
- **Telecom itself is a major e/m-commerce industry overlooking untapped opportunities that could multiply its size**
- **Untapped e/m-commerce markets will be opened by targeted marketing rather than by yet more technology**
- **New comers will disrupt and stimulate change in media, banking & retail forcing consolidation, but the strongest incumbents will win**
- **New comers will win in customisation for communities and taking local niches to global markets**
- **It is unclear whether peer-to-peer will create major new markets and change rules, societal structure, politics and taxation in ad hoc jobs, ad hoc transportation, ad hoc consulting and peer-to-peer retailing**

# 1. Whether incumbants or new-comers win correlates with the degree of change in performance and in market size

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When dramatic change hits an industry, who emerges from the chaos as leader often depends on the size of the commercial consequences



## 1. Whether incumbents or new-comers win correlates with the degree of change in performance and in market size

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**Incumbents will win in most areas of e/m-commerce, but only after substantial disruption; in some sectors new-comers will win**

<b>Paradigm Shift</b>	<b>Change In Market</b>	<b>Change In Performance</b>	<b>Who Wins</b>
<b>Electronic banking</b>	<b>Same</b>	<b>Lower costs</b>	<b>Consolidation</b>
<b>Airline ticketing</b>	<b>Same</b>	<b>Lower costs</b>	<b>Consolidation</b>
<b>Music-artist sales</b>	<b>Major</b>	<b>Major</b>	<b>Artists beat labels</b>
<b>Video-downloads</b>	<b>Minor</b>	<b>Major</b>	<b>Consolidation</b>
<b>Commodity retail</b>	<b>Minor</b>	<b>Minor</b>	<b>Incumbants win</b>
<b>Niche retail</b>	<b>Major</b>	<b>Major</b>	<b>New Comers</b>
<b>Peer-peer</b>	<b>?</b>	<b>?</b>	<b>?</b>

## 2. e/m-commerce will have negligible impact on telecom operators

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Contrary to many analysts, there is little scope for e/m-commerce to “save” telecoms: e.g. mobile revenue is already so big (>\$450 B in 2003) there are few other areas big enough to have any impact

- World CD sales are \$30 Billion of which 15% (\$5 Billion) is available for cost of distribution (1% added to mobile revenue if all music distributed via mobile rather than physical CD).
- Hotel bookings \$80 Billion (5% booked on line), so 5% booking fee would max \$4B.
- Credit card commissions estimated at \$100 B world-wide (but mobile operators bad-debt provisions 3 – 5% are of same order as credit card commissions!).
- Compare with other potential growth in mobile revenues:
  - 5 M more Chinese subscribers per month, adding each month \$2B to annual revenue.
  - 1% transfer of fixed voice to mobile at mobile tariffs adds \$20B/year.

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- **Total USA telecom „carriage“ revenues in 2003 were \$118B local + \$78B toll + \$89b mobile = \$285B compared with \$1685B total credit card transactions**
  
- **Fraud with on-line transactions at 2.5% expends almost all of the commission charge, compared to 0.07% on physical transactions**
  
- **Physical sales of sales of „digital“ products is dwarfed by telecoms**
  - **Music - \$11.84 B**
  - **Films @ box office - \$9.28 B**
  - **DVDs - \$23.8 B**
  - **Pay per view TV - \$2.2 B**
  - **Premium TV channels - \$10.4 B**

### 3. Telecom itself is a major e/m-commerce industry overlooking untapped opportunities that could multiply its size

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#### Telecoms enables e/m-commerce just as roads, railways, shipping and airlines enable the freight and travel industry

- A \$1,000 B industry world-wide; growth in US, Europe is 3% lines plus 4% usage; Asia is the biggest market (45% of world phones) growing 7%
- In 1st & 2nd world 5% of all jobs are telecoms/IT; 100% are customers: all homes and offices have a phone; 70% have a mobile phone
- Telecom provides contact and transport person-person, person-machine and machine-machine that enables e/m-commerce, but has no idea of the commerce itself
- Telecom has enabled e/m-commerce for over 100 years: the buying, selling and exchange of goods, services, information, money, opinions and attitudes
- Only a minute part of telecom revenue has come from providing the commerce itself: goods, services, information, money, opinions and attitudes

### 3. Telecom itself is a major e/m-commerce industry overlooking untapped opportunities that could multiply its size

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**Mobile voice is far from saturation, capturing less than 20% of voice traffic, 2% of total conversations**

- **Mobile penetration is saturating in terms of % pop with a mobile**
- **Saturation is unproven in terms of**
  - number of mobile phones per person
  - number of minutes of voice conversation per person
  - roles that mobile communications can play in people's lives
  - the share of total consumer expenditure
- **Most waking minutes are spent silent. 98% of talking minutes are face-to-face. 80% of phone minutes are spent on the fixed phone.**
- **We don't need to debate how much of this is realistically available to mobile as just 1% of this potential captured as mobile voice traffic would double mobile voice usage**

### 3. Telecom itself is a major e/m-commerce industry overlooking untapped opportunities that could multiply its size

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Even in mobile-crazy Finland, mobiles take just a sixth of all voice traffic, capturing over 50% of revenues only because mobile tariffs are 7 times local fixed call charges

Type of Call	Average Minutes	% of Total Traffic	% of Total Revenue
Fixed Local	4.2	71%	33%
Fixed Long Dist.	4.9	10%	3%
Fixed International	3.6	2%	9%
Mobile	2.1	17%	55%

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#### Promoting the mobile phone as the preferred premium enricher of conversations will:

- **increase customer's perceived value of mobile voice services**
- **increase voice traffic from 3 untapped sources**
  - substitute fixed voice (potential is to raise it from 20% to 100%)
  - capture more conversations (potential is to raise from 2%; ad hoc face-to-face conversations last much longer than the average 2 min mobile and 5 min fixed voice call)
  - create new conversations (potential up to 28,800 average waking minutes per month)
- **support/increase tariffs of mobile voice subscription and usage – even without promotion of value, users already expect a substantial premium for mobile calls (and SMS)**
- **boost revenue (more calls, longer, at higher prices), therefore NPV**

## At least seven types of methods for generating additional voice ARPU

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**We have identified 64 methods of 7 types for generating additional voice ARPU; many may also work for fixed voice**

- **Attract existing fixed voice calls to mobile through reducing four barriers holding back mobile use and increasing the value of mobile relative to fixed**
- **Increase revenue from existing mobile voice calls**
- **Ensure any attempted voice call to or from a mobile is successful**
- **Stimulate more mobile voice calls: call more people, call people more**
- **Promote data content as a driver of voice contact**
- **Promote voice content services**
- **Increase loyalty to prolong customer-lifetime and so gain revenues over a longer period**

## Rapidly test methods on representative markets

A mobile operator could rapidly prototype at least six methods to test them on representative markets, and so gain confidence that a systematic programme for voice ARPU would be worth developing

Methods	Revenue	Low Risk	Customer Lifetime	Low Cost	Quick Results	Scalable to all users	Score
4.3.3 Ensure CLI	**	****	***	*****	****	***	21
4.3.5.a Pay to receive	**	****	****	****	****	****	22
4.3.6.b Help voicemail setup	***	*****	****	****	****	***	23
4.3.6.c Direct dial voicemail	*	*****	***	*****	*****	***	22
4.4.1.a Clone high users	***	****	***	***	****	****	21
4.4.1.c Promote keep in touch	**	*****	**	****	****	****	21

**Don't leave development of e/m-commerce in telecom's hands!**

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**Mobile operators failed attempts to kill SMS are now cited as a success to justify the foray into 3rd generation content**

- **Initially SMS was free, using the underused GSM signalling channel and was never promoted. When demand grew by „word of mouth“ and clogged the channels, preventing set up of voice calls, operators imposed a tariff hundreds of times the price per bit of voice calls**
- **15 - 25 year olds spend more on SMS than on voice calls. SMS makes up 20% of mobile revenue**
- **However excessive SMS tariffs hide the low data traffic**
  - An SMS is 160 characters = 1.28 kb of data for price of 0.10 Euro
  - A voice call is 2 minutes = 120 secs \* 13 kb/s = 1.56 Mb at 0.20 Euro
  - SMS traffic is <0.1% of voice traffic
- **SMS certainly seems to be used for “contact”, rather than “content”**

**Telecoms should therefore be seen as an essential but supporting element in developing e/m-commerce**

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**Many of the proposed e/m-commerce services require skill sets that operators have yet to prove**

- **Understanding drivers and needs of consumers**
- **Gaining and serving corporate customers**
- **Customer care and management**
- **Marketing (WAP was the industry's first attempt, and failed)**
- **Content collection, packaging**
- **Payment (including micro-payment) with low fraud rates**
- **Partnerships rather than vendor/supplier transactions**
- **Venture-capital risk-taking, assessment, tracking and management**
- **Logistics (e.g. delivering physical goods)**

#### 4. Untapped e/m-commerce markets will be opened by targetted marketing rather than by yet more technology

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### **We already have more than enough technologies to enable enough e/m-commerce to keep us busy for at least a decade!**

- **Robotics allow remote surgeons to repair nerve damage -> location of labour (cheap or highly skilled) is no longer an issue; best person for the job can be used**
- **Virtual reality simulators indistinguishable from real-world experiences -> games; tourism; social interactions; training/education**
- **DSL is just „ISDN on Viagra“ yet enables downloading of more music, video and Internet than an individual can experience**
- **OH-free fibre-optic cable with 100 fibres, each with 64 laser “colours” each with 600 Mbps capacity offers 10 million simultaneous video-conferences yet pays back on just 2,000 voice channels, 0.01% fill**
- **Moore's law brings wireless-linked IP devices, embedded in products at least as ubiquitous as embedded micro-processors today, in cars, coke-machines, appliances as well as communicators and IT**
- **WLAN, WiFi, Wi-Max 3G bring access to most people most of the time**

**WLAN 4G is a “clear and present danger” and an opportunity – operators can’t find a viable business case; possible organic growth of free access**

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### **WLAN base-stations are an interesting speculation for many locations**

- **Starbucks is installing 11Mbps WLAN access in 3,100 of its 4,000 N. America locations. Service costs are \$15.95/month including 200 minutes (8c/min)(\$59.95/month for unlimited use), or \$2.50 per use plus 20c/minute. Pay-in if 8 users per day, or 5 more cups of premium coffee!**
- **Leakage of “private” WLAN into public areas can capture share of revenue-stream – several billing companies working on products.**
- **Coverage, coverage, coverage is key, so need many “hot-spots”, but unlike doomed “Telepoint” most users prefer to stay stationary while accessing, so hand-over & contiguous coverage not needed.**
- **For the cost of a UK 3G license (\$9 B) you could put in 10 million WLAN base stations!**
- **Fixed network operators have millions of junction boxes.**

**Operators claiming there is no money in broadband, might be by-passed by a surge of organic growth from e/m-commerce peer-peer enabled devices**

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**Most road-warriors and many consumers will have wireless linked devices within 2 years**

- **Corporations are lapping up \$200 – \$1,500 base-stations and \$100 - \$230 per PCMCIA card, as just one hour saved per year pays in.**
- **Taiwan ships most OEM lap-tops with WLAN built-in.**
- **Tens of thousands public WLAN “hot spots” in USA and Europe**
- **At the May 2002 Taiwan Comptex WLAN was shown built-in:**
  - Lap-tops, PDAs, PCs, printers.
  - Mobile phones.
  - Hand-held games; game consoles.
  - Hi-Fi, TVs, home networks, entertainment servers.
  - Walkman, CD and DVD players; Handy-cams; digital cameras.
  - Home/office security and surveillance systems.

#### **4. Untapped e/m-commerce markets will be opened by targeted marketing rather than by yet more technology**

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**Some categories of commerce may be enhanced by but cannot be substituted by e/m-commerce or require technological breakthroughs; e.g.**

- Physical substitution or delivery of commodities**
- Non-commodity food/drink require taste, smell**
- Clothes & textiles require touch**
- Virtual-reality must make great strides to give satisfactory experiences for visits to resorts, clubs, business & personal meetings, museums and cultural events**

#### 4. Untapped e/m-commerce markets will be opened by targeted marketing rather than by yet more technology

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**Build relationships with early adopter segments with high multiplier effects, promote loyalty, increased use of existing services and introduce them to new services (e.g. the iDeasTank methodology)**

- **understands the customer's needs and the value to them of satisfying that need (e.g. a football fans need to feel important to his peers by showing off his team's goal)**
- **develop an application that meets that need, together with any partners necessary to deliver parts of the service, e.g. so that the customer can share a digital video clip with a peer without piracy**
- **Develop a proposition emphasizing the application, the benefit and the value to the customer**
- **Launch this with representative early adopters to fine tune the proposition and to evolve it to be easy to use for less committed majority in this segment**
- **Develop branding and promotion, distribution and customer care for the proposition**

## Are we listening to what turns customers on?

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### Benefits and value are most compelling where they address the primary drivers of customers

#### ■ New applications targeting primary drivers of consumer targets:

- ▶ hope (for money, sex, immortality) - betting; dating; dial-a-priest
- ▶ belong (role model, family, friends, community) – push-to-talk; mobile ICQ
- ▶ feel important – digital post-cards; show-off where you are, the goal your team scored
- ▶ get more out of life - diary-management/coordination; spontaneous celebration parties; which disco is hot
- ▶ security Healthy; Safety; Sure Everything is OK; Sure you are doing the “Right Thing” - reservation confirmation; anniversary gifts; check your opinions with poll findings

#### ■ B2B and B2B2C

- ▶ Reduce the costs of me doing my business
- ▶ Boost the revenue I can get from my existing resources
- ▶ Put me a step ahead of my competitors
- ▶ Reduce uncertainty and so risk-premium on my cost of capital

#### **4. Untapped e/m-commerce markets will be opened by targetted marketing rather than by yet more technology**

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##### **Example: possible telecom-enabled services for consumers**

- **Dating service for 16 – 25 year-olds: who matches my target partner profile and is available now within 500m from here?**
- **Betting service for couch-potatos: the referee blows the whistle for a penalty – will it be a goal? You have 20 seconds to bet**
- **Which disco is hot tonight? View with your handy what the Webcam in each club is showing now.**
- **Download in 10 minutes those 3 videos on your list to buy, while enjoying a cappuccino at Starbucks and avoid shopping stress**
- **iConfess links the believer immediately 24/7 with a priest**
- **Retired executives from the golf-course can mentor a protoge running a business**

**5. New comers will disrupt and stimulate change in media, banking, retail forcing consolidation, but the strongest incumbents will win**

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**Industries such as banking and retailing will become major new users of telecoms, for applications such as Electronic Commerce, but the banking and retailing incumbents will emerge as the winners**

- **the financial and marketing advantages of electronic commerce through Internet, mobile and touch-tone phones are so enormous that ways will eventually be found to get this business to take off**
- **much of the innovations are being done by new comers, such as Amazon Books, and much of the telecom investment is being done by telecoms vendors and operators**
- **however the traditional banks and retailers will reap most of the benefits, as they can quickly adopt the technology and have all the required key factors to win in the market**
- **at today's market-caps, big benefiteres from telecoms such as Microsoft, IBM, HP, accountants, banks, media, would find it cheaper to buy incumbents rather than their services!**

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**Media companies have all the factors to control content, so will remain in control even in an e/m-commerce enabled future**

- **access to existing content producers, and an efficient scouting mechanism to identify and capture new sources of content**
- **established distribution channels and are used to building and exploiting new channels as they arrive**
- **IPR (intellectual property rights) mechanisms and contract mechanisms for artists and content produces**
- **track record in adding to their rich portfolio of technical platforms as each new media has emerged**
- **vast libraries of archived content**
- **comfort with targeting multiple market niches**

**5. New comers will disrupt and stimulate change in media, banking, retail forcing consolidation, but the strongest incumbents will win**

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**Media companies know where the new media(s) can be applied effectively**

- **Media companies know the strengths and weaknesses of existing media**
- **Advertising is the customer of TV, Radio and print media, and existing players know how to cluster “eye-balls” of particular target groups to a particular sponsor’s ad**
- **Existing media players are best positioned to discover how the new media can be more effective at manipulating eyeballs**
- **Existing media players have long-standing relationships with advertisers**
- **They are also well placed to capture any new revenue streams that might be generated by user’s buying content**

## 6. New comers will win in customisation for communities and taking local niches to global markets

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**e/m-commerce can offer a much wider range of product/service („segment of one“) down to a peer-peer interaction level**

- **Download now any item from the complete programme library of BBC radio and TV for last 50 years -> CD/DVD outlets can't compete**
- **Artisans ecking out a living in a local environment can display and sell their wares to a world market of discerning individuals**
- **You can locate and get advice from the specific expert, even if he/she is employed in another full-time job**
- **A company or individual needing a chore done for an hour can identify a student or housewife nearby who is available**
- **Match and meet someone close-by who would make a good tennis partner for a game now, or an interesting dinner discussion**

## 7. Will peer-to-peer create new markets, change rules & society, politics and taxation, jobs, transportation, consulting & retailing?

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**Technology enables major change in product/service performance, but while 2-4% uptake leads to healthy change, over 10% can lead to unpredictable impact on competitive structure and society**

- **Divergence of contact primarily to mobile and rich content to fixed**
- **Retailing restructures into tactile experiences with unlimited „try-out“ choice in shopping centers, with products delivered from out-of-town warehouses to community storage lockers**
- **Restructuring of society from a few number of roles in few physical communities to multiple roles in many virtual communities; redefinition of the „nuclear family“, „community“, „nation“, „job“**
- **Decentralising law making and law-enforcing back down to the local and the virtual community, changing**
  - from concept of democracy „long-term elected representative“ based on the speed of a horse
  - to on-line discussion and voting of the interested parties (like today's massively multi-player role-playing interactive games)

**Add contingency, flexibility, agility, diversity to our strategies so they are robust to increasing turbulence and uncertainty**

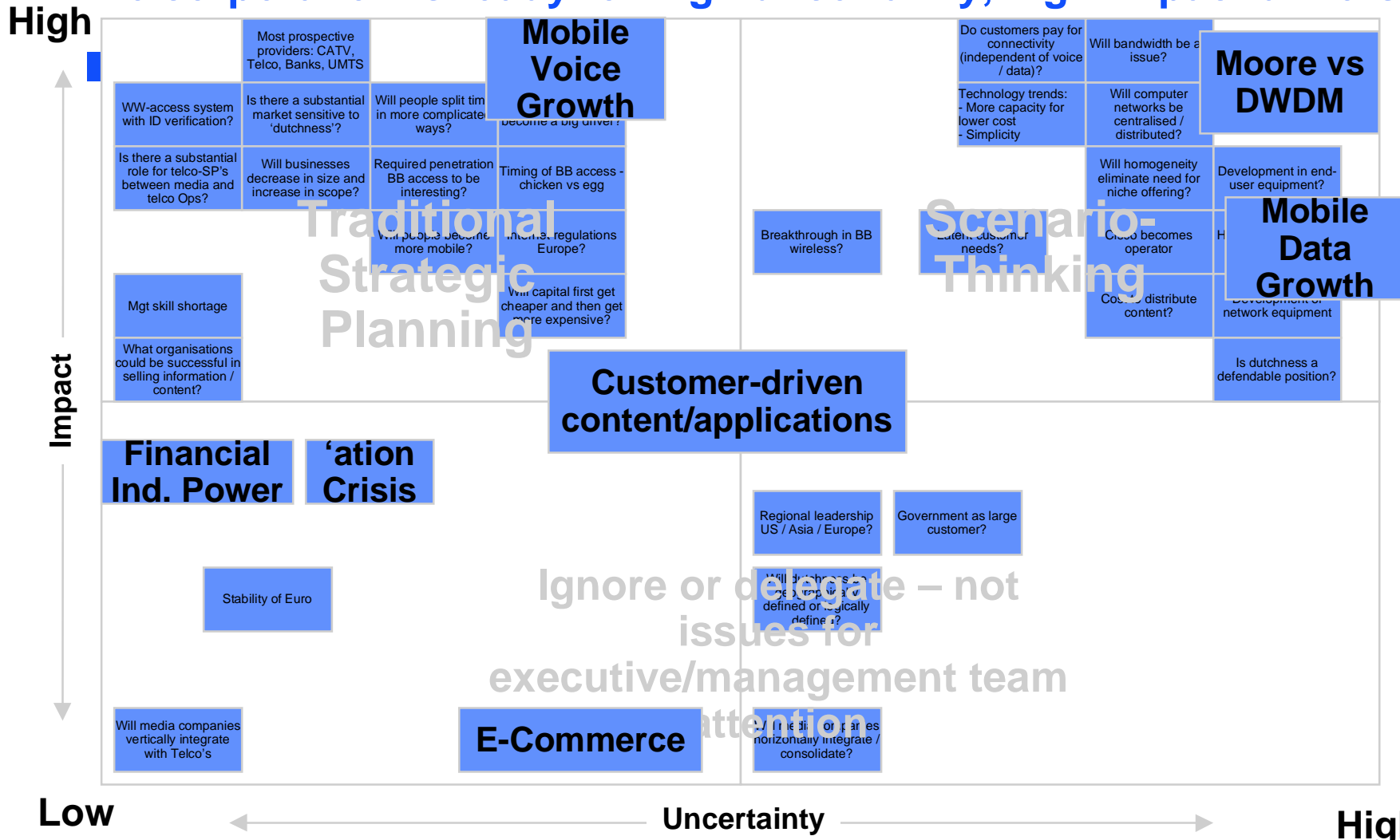
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## **Increasing uncertainty makes risk management key in deciding which new revenue and profit opportunities to pursue and where to avoid costly mistakes**

- **The telecoms super-tanker is racing into increasingly thick fog. Recognise the uncertainty is intrinsic – no amount of analysis or research will give a clearer answer – you cannot predict the future!**
- **Traditional single trend-line “official futures” are no longer credible and so attract higher discount rates**
- **Thinking through how the key uncertainties might evolve into 3 – 4 very different potential futures, triggers management create contingency to avoid costly mistakes, while increasing vigilance to signposts for unexpected opportunities**
- **The game is “minimise the costs of regret” of being wrong 75% of the time**
  - **Cost of missing opportunities, particularly if others took them up**
  - **Investments of time, money and resources wasted**
- **Navigating uncertainty and responding to the unexpected can be learned**
  - **A management team that dialogs about uncertainty and how to be unsurprised by surprises will be more successful than a team of individual navigators**
- **“scenario thinking” is a formal process for such dialogs**

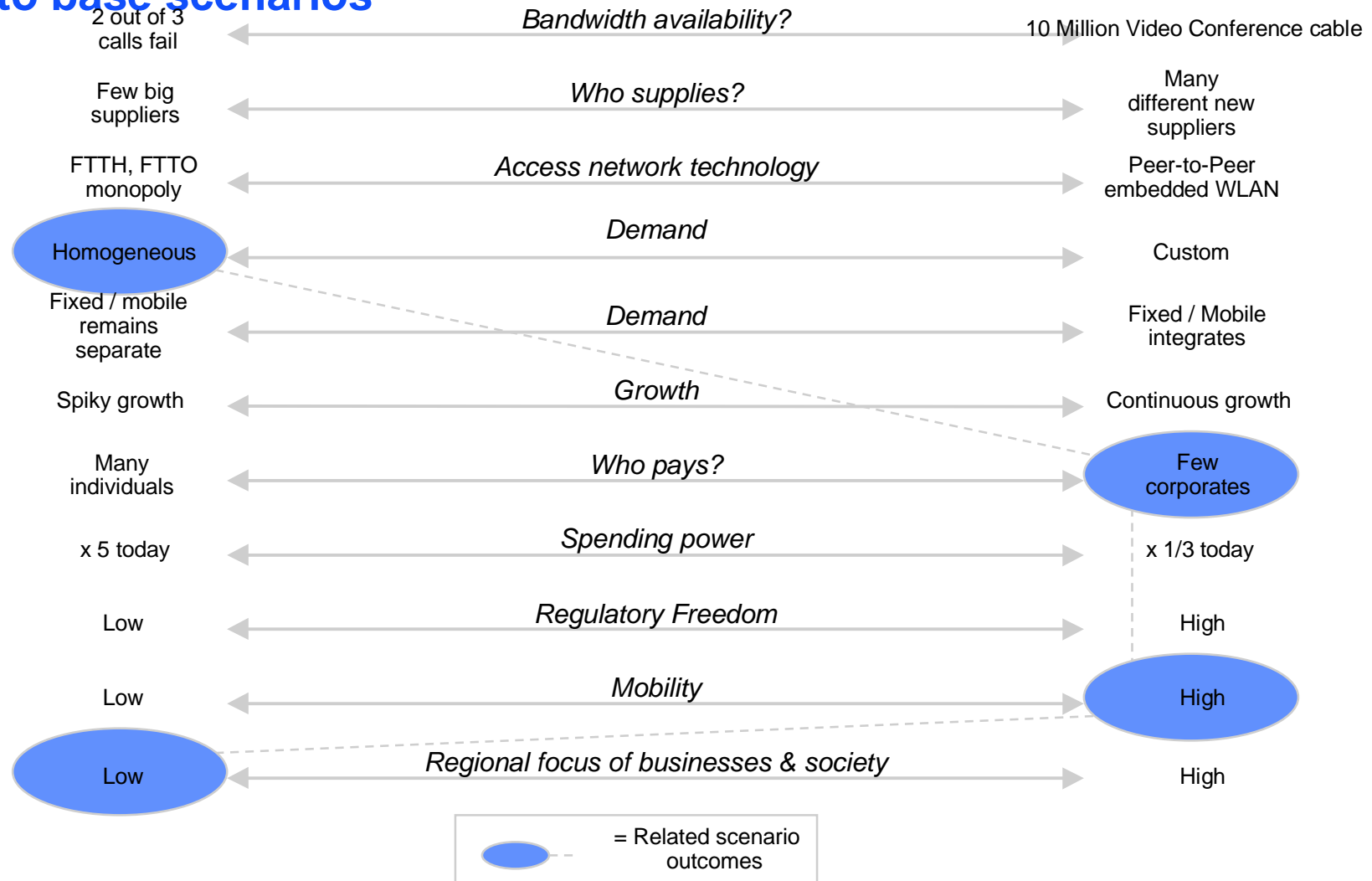
# Telecoms is now foggy and so scenario-thinking is essential

The executive/management team should prioritise attention ensuring the corporation is ready for high uncertainty, high-impact drivers



# Telecoms is now foggy and so scenario-thinking is essential

## Identify axes with a brand range of upper and lower bounds, on which to base scenarios



# Four scenarios cover the range of possible 2014 futures for demand and supply in telecom, each stretching thinking away from the „official future“

•Supply = few, global players

## UPOTS = Utility Plain Old Telephone Service

- Telecom < 0.5% of GDP
- Telecom seen as monopoly utility (like water & roads) = essential but not valued
- Incumbents behave as utilities, telecom bundled with water & power
- Large communities reject IT/telecom with fear of „big brother“/privacy & technology
- Supply exceeds demand, „high tech“/sexy industry still attracts newcomers, like airline industry, but none are profitable
- Telecom equipment vendors are mainly divisions of bulk chemical suppliers

## Info Society; Knowledge-based Working

- Telecom > 5% of GDP
- IT, Telecom, content „High priest“ practitioners highly esteemed
- „Unlimited bandwidth, everywhere“ real-estate has premium price
- Logical rather than geographic „communities“ and „nationalities“
- Eight global operators who have earned their monopoly: Microsoft; Sony; Citbank; Shell; China Telecom; Carrefour; Hutchison
- Diverse vendors, with a few specialising in each area: infrastructure, wearable devices, installation, operations, content
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## Do It Yourself

- Telecom embedded in devices (toasters) & services (Banking)
- Peer-to-peer meshed networks bring universal broadband
- Telecom is so ubiquitous it is „everyday“/“nothing special“
- „Universal standards“; devices, access points and links sold in supermarkets, IKEA and plumbing warehouses
- „Operators“ have disappeared; Verisign, Macrovision manage content rights and royalties; craftsmen install and maintain; everyone can author
- Vendors are (Whirlpool, BoschSiemens, Sony), C&A, Wallmart
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## Artisans' Paradise

- Telecom/IT architecture taught as creative arts not engineering
- Telecom embedded or bundled into customised applications giving specialised benefits with very high value specific to niches
- Thousands of suppliers of specialised devices, installers for specific applications
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•Supply = many, everyone can do it

•Demand = simple, generic, free

•Demand = custom, intense product/service

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## Determine where creative contingency is required

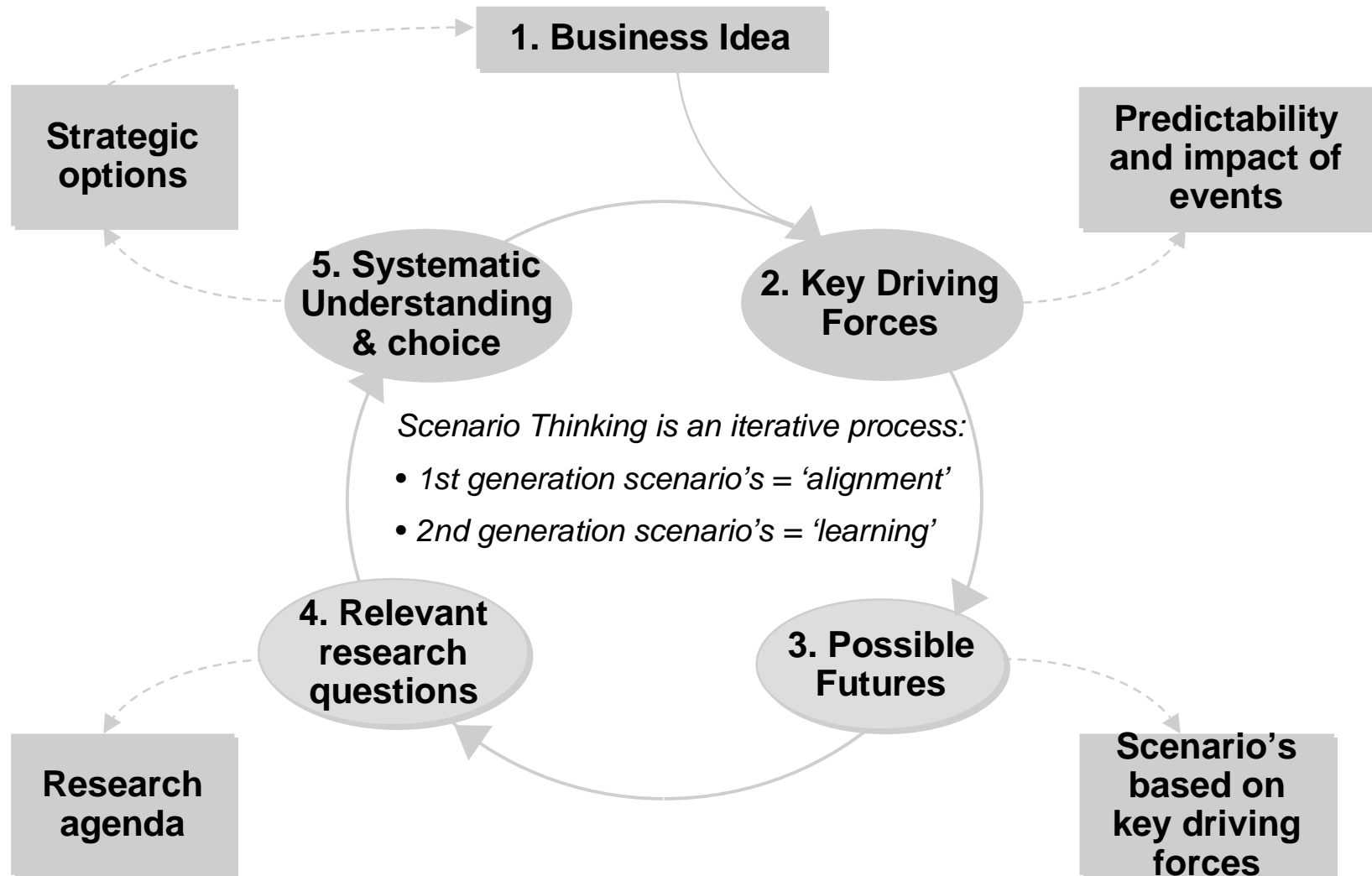
	<b>Scenarios</b>				
	Info Society	Artisan's paradise	Do it yourself	UPOTS	
<b>Strategic options</b> Focus on Local	--	+++	---	-	<b>Don't Do</b>
Invest in broadband	+++	+	+	--	<b>Do carefully</b>
Focus on Global Service	+++	0	+	+	<b>Do</b>
Focus on Global Customers	+++	-	+++	++	<b>Do</b>
Defend present position	---	--	--	+	<b>Don't Do</b>
Dress the bride + Find Alliance	+++	++	0	+	<b>Do</b>

<b>Strong fit</b> +++ ++ +	<b>Neutral</b> 0	<b>Strong conflict</b> - -- ---
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The Scenario Thinking process ensures a quality dialog between all management on all the key external driving factors



**The strategy must contain elements that work in any future**

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**A successful future-proof strategy has at least five types of approach**

- **Strategic elements that are robust in any future**
- **Contingency/insurance for strategic elements that don't work in one or more futures**
- **Monitoring leading locations and leading indicators for signs of which future is happening**
- **Creating business plans with fast pay back, even when based on conservative prognoses**
- **Create best-in-class performance, so will always be the stronger competitor even in adverse conditions**

## Summary

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**We suggest 7 empirical guidelines for distinguishing where e/m-commerce might become key, where to forget it, and where to apply „navigating in the fog“**

- **Whether incumbents or new-comers win correlates with the degree of change in performance and in market size**
- **e/m-commerce will have negligible impact on telecom operators**
- **Telecom itself is a major e/m-commerce industry overlooking untapped opportunities that could multiply its size**
- **Untapped e/m-commerce markets will be opened by targeted marketing rather than by yet more technology**
- **New comers will disrupt and stimulate change in media, banking & retail forcing consolidation, but the strongest incumbents will win**
- **New comers will win in customisation for communities and taking local niches to global markets**
- **It is unclear whether peer-to-peer will create major new markets and change rules, societal structure, politics and taxation in ad hoc jobs, ad hoc transportation, ad hoc consulting and peer-to-peer retailing**