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Teleconomy Newsletter

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A Time Of Turbulence- The Digital Interregnum

By Michael Hulme

The human capability to categorise and order surely lies at the heart of our capacity and desire to make sense and establish notions of explanation for our world. Perhaps the Victorians with their desire to collect, classify and so tame and explain their environment were the most profound example of this very human need. However, I suspect from early consciousness we have been dividing the flow of the world into 'handy bite size chunks', thus allowing us to assemble, disassemble and reassemble our experiences into more manageable accounts.

Nowhere is this better illustrated than in our capacity to segment and by applying labels and names, to order sequences of events over time, thus we conjuring into some apparently substantial existence Ages or Epochs such as the Renaissance or the Age of Enlightenment. More recently we have seen the Age of Steam, today we live in the Digital Age, having recently, I suppose, passed through the Analogue Age. Such thinking can of course be helpful. However over simplification may also be damaging particularly when applied without the ordering benefit of hindsight. Today do we live in the Digital Age? What might we mean by this term?

To state one is living in the Digital Age carries with it ideas of passage or transference, in this case from analogue technologies to digital. There is obviously great truth in this statement, the PC has arrived, our mobile phones are digital and, despite critical comment digital television will surely soon be in the majority over analogue television. Whether this is sufficient for us to truly state that we have 'arrived' in this age is however almost certainly suspect. Indeed this idea is probably profoundly damaging. Looking at the level of technology, we may indeed in some sense have arrived, but technology itself is of little value without users and their ensuing behaviours. Many of the recent disappointments relating to technology adoption in both the Internet and Mobile arenas can be interpreted as overemphasising the capacity of digital technology to be useful and expressive of real peoples lives.

At this point we might pause to ask ourselves when did this Digital Age begin? Is it to be marked by the rapid spread of the PC from the early 80s onwards or some other significant moment such as the birth of the Internet? If we take the PC as the significant moment on the basis that it ensures we have been 'in' the age for the longest period of time, a significant and often overlooked demographic fact becomes immediately apparent. Only 26% of the UK population has been born post the introduction of the PC (and this is the most optimistic reading). In other words for only this 26% is 'digital behaviour' or familiarity, a natural behavioural mode in as much as only this group has grown up surrounded by and using the artefacts of the Digital Age.

For the rest of us, some nearly three quarters of the population, digital behaviours represent adaptations or modifications to pre-digital modes. For example, to move from passively sitting in front of ones

television to ordering clothes and banking on the same screen is a pretty big leap.

Human behaviours neither adapt uniformly or necessarily along predictable lines or patterns, indeed it is our very unpredictability or 'infinite variety' that makes us human. Our adaptive rates will vary for many reasons including old chestnuts such as age and gender. However of more significance is likely to be life style, work and exposure to technologies and media. Indeed even the act of having children can change the pace of change and form of behaviours toward technology.

Looking back over the events of the last two or three years leads us to think of a further ordering of time. Perhaps it is now more helpful to sustain the optimism of the Digital Age, but to see ourselves as in the processes of behavioural change, adaptating to our own technological creations (they, of course, will be further adapted by our actual usage), living in turbulent, uncertain times where some apparently 'winning' technologies/uses may fail and others may almost spontaneously emerge. A time we currently inhabit may become easier to predict as adaptive behaviours become more naturalised, however it is not an Age, rather an Interregnum.

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Technology and adoption: Mobile services

By Sue Peters

Do you really want to watch movies on a tiny mobile phone screen? Companies like NTT DoCoMo that pioneered 3G services certainly hope so – it's currently their main marketing tool in the face of a largely indifferent Japanese public. The recent research project for the Media Research Alliance (MRA) – *(footnote about the MRA?)* on technology and cynicism pays particular attention to the adoption of new technologies, especially the evolution path for the mobile phone. This evolution path is different to other technologies because the future services and applications were mapped out far in advance: people were expected to migrate to WAP, then GPRS, and finally 3G. These acronyms have been floating around for so long they have become part of media pundits' common speak.

But has this really been the case? Let's go back to how the mobile was first used. Although the penetration in the UK is near to 80%, the device itself has been knocking around for a long time: remember those 80's yuppies carting around a phone the size of a housebrick? But the key group that dramatically improved mobile phone penetration were younger users, and it was the emergence of 'pay as you go' tariffs that gave them access to the mobile.

In turn, teens changed the nature of mobile use. How? In a nutshell, text messaging. Teenagers literally got hold of text messaging and created an entire sub culture around it, subtly transforming the mobile into a device that communicated through data as well as voice. And gradually, other age groups began to get the hang of text messaging.

The grand plan for mobile development missed this possibility (as evidenced by the fact that the instructions for text messaging were not even included in early instruction manuals). Instead, WAP asked us to take a bigger behavioral leap than we wanted (coupled with long download times, poor usability and lack of content!).

But text messaging has gradually educated us to use the phone differently, and only now are we ready for picture messaging and MMS that SMS introduced us to. Users need a learning curve and WAP was at the wrong end for the masses to use it. And so it continues. There is a huge warning here for the technology providers burdened by the debt from 3G licenses. Just because the technology exists does not mean consumers will demand it: consider the fax machine, invented in 1843 but unloved until the 1970s. The lesson so far is that users must adapt and get used to using the mobile in different ways at their own pace, not at a speed dictated by phone companies. 3G will bring with it video streaming, but only after the evolutionary path and learning curve of SMS and MMS will we even be able to contemplate using the mobile in such a way.

For more information about our research project "**Technology and Cynicism: The Digital Interregnum**" email mailto:enquiry@teleconomy.com or telephone 01524 382000

Indonesia

By Qmars Safikhani

The fourth highest populated country in the world and the biggest Muslim country has been having a rough time of late, with continuing involvement in post-September 11th activities, violent clashes accompanying the re-election of Jakarta's widely disliked governor and power blackouts for long periods. Its economy is unable to lift about 40 million Indonesians out of unemployment, when nearly 60 percent of the population is at risk of falling below the poverty line.

socio-economic indicators	2001	2002	2003
Population (million)	228.44	232.07	235.68
15-39 age band as percentage of population	43.71	43.48	43.24
GDP (US $bn)	161.58	168.85	176.45
GDP per capita (US $)	707	728	749
R&D investment (US $bn)	0.46	0.48	0.50
R&D investment as percentage of GDP	0.28	0.28	0.28
FigureSeeq™			

Indonesia also presents geographic challenges with 13,667 islands, mountainous regions, 100 active volcanoes, and a tropical climate. This always meant that creating a telecoms network was particularly difficult, but the situation was not helped by almost total lack of investment by the government. However, the financial crises and political turmoil of the past have forced the government to restructure the economy in exchange for IMF aid, and WTO membership obliges the government to develop the liberalisation of the telecommunication market.

Mobile

At the moment there are seven mobile companies operating in the country: Telekom, Indosat, Satelindo, Telkomsel, Excelcomindo, Komselindo, Metrosel and Mobisel. Telkmosel is the biggest operator with nearly 2 million subscribers.

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Mobile phone	2001	2002	2003
2G mobile phone subscribers (million units)	4.00	5.00	5.99
2G mobile phone subscribers (per 10,000 inhabitants)	175	215	254
2.5G mobile phone subscribers (million units)	0.00	0.00	0.01
2.5G mobile phone subscribers (per 10,000 inhabitants)	0	0	0
3G mobile phone subscribers (million units)	0.00	0.00	0.00
3G mobile phone subscribers (per 10,000 inhabitants)	0	0	0
Total mobile phone subscribers (million units)	4.00	5.00	6.00
Mobile phone subscribers (per 10,000 inhabitants)	175	216	255
FigureSeeq™			

Internet

According to our latest figures released for 3Q 2002 there are nearly 3.9 million people in Indonesia with access to Internet. The cost of Internet access is relatively high (US $25.34 per 30 hours of dial-up access). The main dial-up systems are based on:

A) Inclusive access which is applied by TelkomNet
B) Telephone charges and separate ISP charges

The high price tag is reflected in the number of users: only 15% of Internet users surf from home. Internet cafés and the workplace represent more than 80% of the Internet access location.

Development of the Internet in Indonesia has also been hampered by the lack of PCs, poor telecom coverage, a general lack of ISPs and few websites in the local language

Internet access	2Q 2002	3Q 2002	4Q 2002
Internet access (million units)	3.36	3.90	4.87
Internet access (per 10,000 inhabitants)	145	168	210
FigureSeeq™			

Broadband

The country is experiencing the adoption of all different access technologies such as ADSL, Cable modem, Satellite and fixed wireless. The demand for broadband access would be 0.5 million by the end of 2003 and this figure will be tripled by the end of 2004. Telkom is running the service in Jakarta. Meanwhile Indosat is installing wireless DSL network in Surabaya and other fifteen cities.

Kabelvision has lunched its Kabelnet Internet access through cable modem and expecting to see an 200% increase of Cable modem

broadband subscribers by the end of next year from current 18 thousand subscribers.

Telkom has already concluded an agreement with Alcatel to providing broadband access via HFC in Jakarta and Surabaya.

The company also provide a two-way satellite broadband access with downloads speed up to 1.5Mbps and up-load via dial-up connection. This service cost around US$ 650 per month. Many cyber cafés in remote area are deploying this service.

Households with broadband	2001	2002	2003
xDSL access technology (million households)	0.03	0.10	0.46
Cable access technology (million households)	0.00	0.02	0.04
Fixed Wireless access technology (million households)	0.00	0.00	0.00
Satellite access technology (million households)	0.00	0.00	0.00
Households with broadband access (million households)	0.03	0.12	0.50
FigureSeeq™			

E-business

The lack of adequate infrastructure for ebusiness, poor awareness, transparency and banking facilities have all contributed to limited growth. To tackle those problems, the Ministry of Industry and Trade is running training programmes on such subjects as digital signatures and computer misuse.

e-commerce (US$bn)	2001	2002	2003
Business to consumer	0.35	0.72	1.71
Business to business	1.52	3.13	7.45
Total	**1.88**	**3.86**	**9.16**
FigureSeeq™			

For further information about Indonesia and other 82 countries please email mailto:enquiry@teleconomy.com, telephone 01524 382000 or visit our website at http://www.teleconomy.com/figureseeq

It's good to chalk?

By David Dawson

Picture a crisp. Yellow. Curved. Tasty (apart from cheese & onion flavour). And now, in the forefront of hacking attacks on large companies. As WiFi networks proliferate across London and the rest of the world, the innocent Pringles container has proved an ideal medium for capturing the signals and illegally accessing these wireless networks.

WiFi describes the technology that allows cable free interconnection with broadband Internet applications and services in the enterprise. Initially, it was conceived to replace coaxial cables and remove the need to drill holes and string wires. But companies are now finding them particularly useful in areas prone to intensive concentrations of users, such as office lobbies and meeting rooms.

There were plentiful security warnings when these networks started appearing, primarily in the US. But the speed with which these networks have taken off – primarily because of their relative cheapness, ease of setting up and lack of unsightly cables – largely left these issues behind. Now, however, hackers have discovered that a Pringles container makes an ideal directional antenna to aid the discovery, and illegal use, of these networks.

Wardriving is a usefully-coined new word to describe the process of driving around a city centre with a laptop, a wireless network card and a Pringles can to find accessible wireless networks. Once discovered, there is rarely any instance of actual harm carried out to internal computer systems: users tend to use the bandwidth for their own online purposes. Alternatively, they leave a couple of chalk marks on the nearest wall or pavement indicating whether the wireless access, is open, closed or encrypted, and notes about bandwidth availability and joining IDs.

This latter practice – known as warchalking – was inspired by the little marks hobos used to leave for each other in the Great Depression to indicate the most likely source of local free food, and has grown into a worldwide cult whose members claim peaceful intentions.

But telecom companies and security experts are, naturally, unimpressed by this sort of behaviour, pointing out that at the very least it limits the bandwidth available for other users. BT, for one, has been advising businesses that provide wireless networks on methods of improving their security. The Secret Service, meanwhile, has taken to patrolling the streets of Washington with said Pringles container looking for security holes in government buildings. The WLAN association, meanwhile, even acknowledges that the security 'confusion' threatens to 'slow market growth across all market segments'

In many ways, this invasion of corporate space by someone armed with a crisp container mirrors how these cheap wireless networks could eclipse the development of vastly expensive 3G networks. As Nicholas Negopronte, co-founder and chairman of the MIT Media Laboratory, comments: "Think of a pond with one water lily, then two,

then four, then many overlapping, with their stems reaching into the Internet….
In

the future, Wi-Fi systems will act like a small router, relaying to its nearest neighbours. Messages can hop peer-to-peer, leaping from lily to lily like frogs — the stems are not required. You have a broadband telecommunications system, built by the people, for the people."

For more information about wireless networks and their role for the commercial sector, please email us here: mailto:MRA@teleconomy.com

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Increasing Complications in Calculating and Comparing Revenue for Mobile Operators

By Trisha Mitra

As many countries, particularly in Western Europe, are nearing saturation in mobile penetration, mobile operators have shifted their emphasis and attention from increasing their customer base, to maximizing their average revenue per user (ARPU) figures.

For instance, in the Netherlands, C.H. Vanbuttingha, an Investor Relations spokesman for KPN stated in an interview that Netherland's mobile "penetration has reached 76% and is stabilising…the growth possibilities are limited and even some of the operators will report negative subscriber growth". Similar growth in penetration levels encroaching saturation is occurring throughout the remaining Western European countries, where on average it is said to be already 70% of the population. The saturation point is estimated to be around a penetration percentage of 80%, since a proportion of the population that are too young or too old are less likely to own a mobile phone.

A closer examination of mobile penetration for Orange, one of the main pan-European wireless carriers, similarly reveals that their penetration market has currently reached "62% in France, 75% in the UK, and 70% in most of our Western Europe key controlled operations" according to an Orange Investor Relations Manager.

The typical methodology for calculating ARPU is by dividing the total summation of revenues from access fees, incoming and outbound traffic, visitor roaming and value added services over a twelve-month period, by the weighted average number of subscribers during that same twelve-month period.

With the shift in mobile operator's focus to the optimisation of ARPU by extracting more money from existing subscribers, new complexities have arisen in comparing revenue amongst the different mobile operators. An evaluation of the key mobile operators' ARPU figures display the discrepancy involved with calculating and comparing performance through revenue generated per user. One common difference across wireless operators is that interconnect charges by one operator may be factored into the computation of ARPU, while other mobile operators may exclude this variable in their revenue measurement.

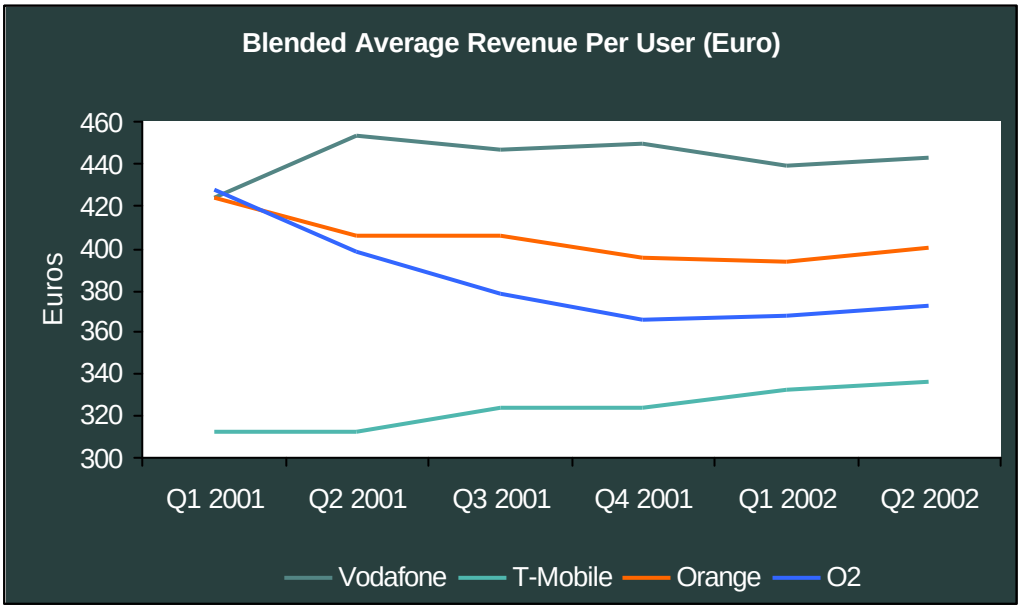
A recent and significant case illustrating the complexity of comparing mobile operators' ARPU is by one of the largest global mobile operators, Vodafone. In the first quarter of 2001, Vodafone announced that they would amend their method in measuring ARPU, by not including their inactive subscribers from the total customer base. Vodafone pointed out that inactive prepaid subscribers are unable to contribute to quantifying revenue since these subscribers have not used the network for over three months. Apparently these adjustments in the calculations of ARPU made significant changes from the first quarter of 2001 to the second quarter of that same year.

Industry analysts have also pointed out that that with the pressures of mobile operators to produce high ARPU figures indicating progress in the company's performance, many mobile operators may adjust their methodologies for revenue calculations to maximize their ARPU value. The table and graph below is taken from our latest research that exemplifies the dramatic change in ARPU for Vodafone in the UK from the first quarter to the second quarter of 2001 with the change in their calculations.

Table 2.1 United Kingdom Blended ARPU

Blended ARPU (Euro)						
Operators	Q1 2001	Q2 2001	Q3 2001	Q4 2001	Q1 2002	Q2 2002
Vodafone	423.361	453.601	447.221	450.404	439.263	442.446
T-Mobile	312	312	324	324	332	336
Orange	423.329	405.822	406	396	393.091	401.054
O2	427.71	399.09	378.42	365.7	367.29	372.06
TOTAL	**1586.4**	**1570.513**	**1555.641**	**1536.104**	**1531.644**	**1551.56**
figureSeeq[M]						

Figure 2.2 United Kingdom Blended ARPU



Furthermore, with the evolving migration from voice to data, services offered by wireless operators will continue to develop and become more advanced and varied amongst different carriers, leading to increasing complexities in measuring and comparing revenue.

MRA Update

By Debra Bookbinder

Members News this issue includes: -

- Diary Dates for event booking and programme input
- New Members
- Updates
  - Quarterly review
  - Members Day – additional date
  - Research Projects
- Notice of Xmas Shopping Survey Launch

Diary Dates: -

1.10.02	Expressions of Interest invited for Xmas Shopping Survey 2002/3
15.10.02	Members' Day, London (FULL)
25.10.02	Suggestions for Winter Quantitative survey to be submitted
31.10.02	Deadline for expressing interest in attending FINAL Members' Day
31.10.02	Autumn Quarterly Review Available
1.11.02	Winter 2002/3 Quantitative Project exploring brand across channels project outline released for Members' input
13.12.02	Deadline for input on Brand Project
10.12.02	Members' Day, London (planned, subject to demand)

New Members

We are delighted to welcome a further 2 brand leading names to membership of the MRA. From the automotive industry we have DaimlerChrysler and another global brand is represented by one of the worlds' largest electronic games development and distribution players – Electronic Arts.

Quarterly Review

The final 2 topics in the Autumn Quarterly Review have been determined and are:

- Post Transaction Experience
- Introduction to Brand - this topic is a taster to the Winter Quarterly Review that will be a special focus on the very latest developments in brand.

Your topic suggestions for the Winter Quarterly review on brand are now invited.

Research Projects

The **Summer Research Project into Technology, Cynicism and the Digital Interregnum** has been very well received at Members' Days delivered in Manchester and London (see below) .

The research challenges the arbitrary notion of a single movement from an Analogue to a Digital Age & suggests the introduction of an interim period (defined by the research as a 'Digital Interregnum'), providing a powerful explanation of recently observed phenomena (dot.com boom and bust etc.,) and offering insight into future direction and technology adoption.

Research Objectives

- Explore consumers attitudes towards technology & how this fits into their lives
- Separate the sample into varying adopter groups according to Everrett Rogers – Laggards, Late Majority, Early Majority and Early Adopters
- Explore differences in attitudes between different adopter groups
- Understand the differences in these attitudes and examine both barriers to and opportunities for take up
- Give an account for technology adoption failure

Research Methodology

- Four qualitative focus groups representing each adopter category
- A quantitative survey of 1000 responses was carried out over a random sample
- Respondents segmented into adopter groups and asked about their general technology use

Key Emergent Themes
Digital Age

- We do not live in a Digital Age…yet. For now we have the Digital Interregnum
- 74% of the current population were born before the PC so current digital use largely adaptive, the Digital Age won't happen until those with natural digital behaviours **and** those who are adapting reach critical mass

Adopter Segmentations

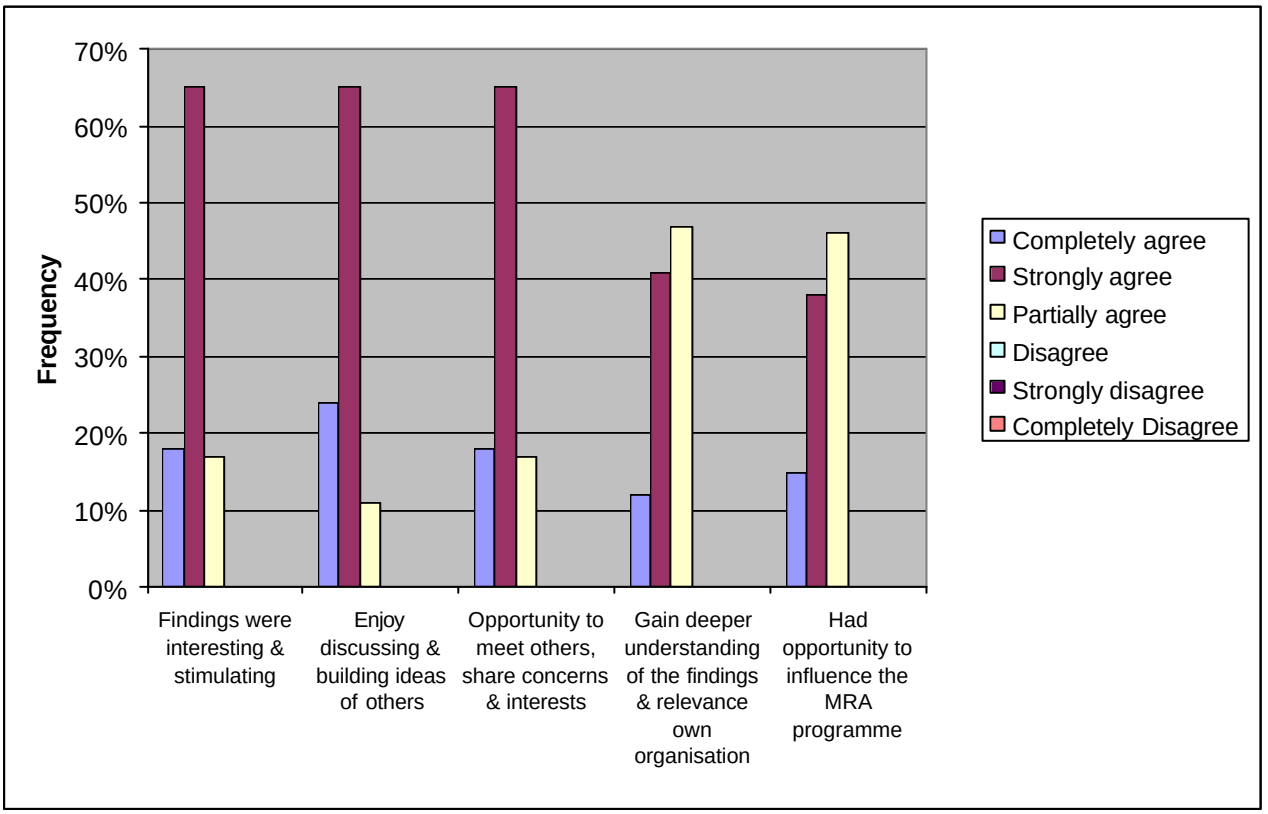
- Within the pre and post PC groups there are differing levels of adoption
- These groups may become more sophisticated over time, e.g. a laggard may in time own a mobile, an MP3 player and a Digital Radio, but the early adopters will have much more and will be using these devices in a very different way.

Access, Adoption, Failure, Trust

- Brand and trust play a very different role in each of the adopter categories' lives
- Technologies need to be introduced in incremental steps for them to be adopted by the 'lower' adopter groups
- Some groups may always be laggards and as we have an ageing population older laggards may experience digital disenfranchisement

Members' Days

September 16th saw Manchester United Football Club kindly host the first Members Day for the Summer 2002 research into Technology, Cynicism and the Digital Interregnum. London was the venue for the 18th and feedback was again, very positive with the principle objectives of a Members' Day largely met for most attendees. Collated feedback is presented below.



The Winter 2002/3 Quantitative Project will compliment the Quarterly Review with a strong focus on brand. The Project will seek to answer:-

Are brand values relative to, or independent of, media channel used and to what extent is brand portable across channels?

The Project Outline will be made available at the beginning of November with input on scope and methodology requested by the second week of December. The report will be made available to Members in February.

Further Members' Days

Tuesday, October 15th, London (FULL)
Tuesday, December 15th, London. This day is subject to their being sufficient demand. If you are interested in attending, please inform us as early as possible, and no later than **Thursday, October 31st**. This will be the final opportunity to hear the Summer 2002 research in a Members' setting.

Christmas Shopping Survey – First Refusal for MRA members

Please note that expressions of interest in participation in the Christmas Shopping Survey are now open. This is outside the MRA but last year we were informed that some members had not been made aware of it and would have liked to participate, so to ensure that you have first refusal, please send any expressions of interest, even if only in principle, directly to me, Debra Bookbinder, at your earliest opportunity. Debra.bookbinder@teleconomy.com

The 3rd Christmas on & Off Line Shopping Behaviour Study

December 2002-January 2003

The Teleconomy Annual Christmas Shopping Experience helps explain and understand customer behaviour in the use of on and offline shopping channels, including the gap between intentions and outcomes with three years trend analysis. This will help companies to predict how virtual shopping behaviour will have evolved by Christmas 2003.

Expressions of Interest are strongly recommended, this syndicate filled within 7 weeks of launch last year.
enquiry@teleconomy.com or call debra.bookbinder@teleconomy.com 01524 382000

If you have any feedback to offer, ideas or suggestions for the programme, or queries on any aspect of the MRA, please contact MRA@teleconomy.com or call 01524 382000.