

Cover title page

'The strange success of prepaid mobile phone services'

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Dissertation

‘The strange success of prepaid mobile phone services’

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Abstract

Prepaid mobile phone services have been phenomenally successful in many markets. On the face of it, however, prepaid mobile phone services have major drawbacks compared with their traditional (billed, or postpaid) equivalents. For example, calls are paid for in advance instead of more than a month later, calls often cost more, and handset choice is often limited. Kotler (1980) reflects marketing orthodoxy in saying ‘the consumer will choose the brand that maximises the value-to-cost ratio’. This research attempts to shed some light on this apparent paradox.

Academic and industry literature is examined for relevant themes. A number of hypotheses are developed, which are then tested in a ‘Delphi’ expert polling exercise. User interviews are undertaken, and the results of these two pieces of empirical research analysed with the output of the literature review.

Evidence is found of a number of relatively poorly – understood benefits associated with prepaid mobile that can outweigh the drawbacks. These include some factors that are relevant to every prepaid mobile phone market, and other factors that are found to be present in some markets but not in others. Finally, two new hypotheses based on these research findings are developed and discussed.

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Introduction

The mobile telecommunications industry is one of the fastest - growing of the 1990s. Just under 25% of the population of Western Europe has a mobile phone (Scrase, 1999), and this market has grown by 66% during the year to December 1998 (Hayes, 1999). Penetration has reached levels as high as 56% in Finland (Mobile Markets Alert, 7th January 1999). Mobile Markets Alert (1st September 1998) reports that the number of cellular subscribers in the World will more than double, from the current 268 million to 715 million, or 12.7% of the World's population over the next decade. An Analysis report in March 1998 forecasts that Finland will reach 64% mobile phone penetration of its population by 2003. The same publication reports that in Portugal, some customers are starting to replace their fixed lines with mobile subscriptions.

As growth of traditional (billed, or post-paid) mobile phone services begins to slow (Sharrock, 1998), a new form of mobile phone service, prepaid service, enjoys explosive growth.

Many of the features and services available to traditional mobile phone customers are not available to prepaid customers. In addition, the process of paying for prepaid mobile phone services has a number of drawbacks. The traditional (postpaid, or billed) mobile phone service customer is given a line of credit by the phone company and is billed at the end of the month for calls made (although the customer is normally billed for rental a month in advance). In contrast, the prepaid mobile customer pays in advance for calls by purchasing units of value (of the order of £20). The value of each call is subtracted from the customer's account as calls are made, and when there is no credit left on the account the customer must purchase further call credits in order to continue. In most cases, the customer's account must be in credit in order to be able to receive calls. The maximum duration between recharges varies. In South Africa, for

instance, the duration varies from 14 days to two months according to the value of the recharge (Smith, 1998).

At the end of the duration or when the credit is exhausted, the phone stops working, and the customer must recharge their mobile phone account again. Typically, accounts can be recharged by purchasing vouchers in newsagents', post offices, petrol stations or convenience stores (see for example Mutiara Telecom, 1997). Every voucher holds a secret number which, when keyed into the mobile phone, adds the appropriate call credit to the customer's balance. Most services also allow customers to recharge their accounts via a credit card over the phone (see for example Eircell, 1998). Other recharge methods include bank ATM machines (Bartlett, 1999).



Figure 1: A 'Go card' prepaid voucher from Eircell, Ireland showing the scratch-off panel and secret number (not full size)

This dissertation proposes to explore how prepaid mobile phone services can be so successful, given conventional marketing thinking that customers buy benefits, not products and given that prepaid mobile appears to offer significantly fewer benefits than postpaid services.

Rationale

Since TMN (Portugal) launched the first prepaid mobile phone service in October 1995 (Prichard and Powell, 1998), the success of prepaid mobile services in many markets is well documented and is expected to continue. Prepaid mobile phone

services have been launched in countries as diverse as the USA (Topp Telecom, 1998), Singapore (SingTel, 1998), South Africa (Smith, 1998), the Czech Republic (Ethos, 1997), France (Gemplus, 1997), Australia (Vodafone, 1998), Uruguay (Global Mobile Daily, 28th September 1998) and India (Quality Cellular, 1998).

Prepaid mobile services have attracted millions of customers Worldwide.

Prepaid customers account for over 70% of Italian mobile operator TIM's customer base (Mobile Markets Alert, 12th March 1999). Mobile Operators in countries such as Ireland (Casey, 1997), the UK (Mobile Markets Alert, 2nd October 1998), Mexico (Hammer, 1988), Brazil (Natal S. Silva, 1998), South Africa (Hammer, 1988) and the USA (Jensen, 1998) have attracted large numbers of new customers to prepaid mobile services. Prepaid customers account for over 70% of Italian mobile operator TIM's customer base (Mobile Markets Alert, 12th March 1999). Williamson (1999) quotes an Ericsson report that in the first six months of 1998 alone, prepaid mobile phone services were launched by 111 operators around the World. Prepaid mobile phone service is now offered in over 75 countries (Mobile Markets Alert, 29th July 1998).

Williamson (1999) quotes an Ericsson report that in the first six months of 1998 alone, prepaid mobile phone services were launched by 111 operators around the World.

Some markets have taken to prepaid mobile services quicker than others: 'The outstanding success story for prepaid cellular services has been Italy, where both Telecom Italia Mobile's TIM card and Omnitel's Ricaribile service have attracted a very high proportion of all new cellular customers in that country' (Strategy Analytics, 1997). Casey reported in The Sunday Business Post on 28th December 1997 that in its first two months, Eircell's prepaid mobile service had been taken up by 2% of Ireland's population.

Forecasts are equally bullish: Global Mobile (July 9th 1998) reports a total of 14M prepaid subscribers World-wide in 1997, and reports a forecast that 264M, or 37% of all forecast mobile customers will be prepaid by 2007. Similarly, RCR International (1997) report a projection that 20% of all mobile subscribers in Western Europe will be prepaid by 2001. Swedberg's later (1998a) forecast opines that between 25% and 35% of all GSM digital mobile subscribers will be

prepaid by the year 2000. Public Network Europe (1999) reports 'an abundance of potential prepaid subscribers up for grabs'. Forecasts are continually being revised upwards - for example, TIM forecasted in 1997 that there would be over 6 million prepaid mobile Italians by the year 2000 (The Economist, 1997) – and Law (1999) reports that there were already nearly 9 million prepaid mobile Italians by the middle of 1998. While the concept of bandwagon pressure (Abrahamson, 1993) could go some way to explaining the large number of operators with prepaid services, it does not explain the popularity of the service with customers.

Despite this fundamental change in the mobile phone industry, a thorough search has revealed no published academic research on buyer behaviour for billed or prepaid mobile phone services. This topic is therefore ripe for research.

Prepaid mobile delivers inferior benefits to the postpaid equivalent in the following ways:

- The prepaid mobile customer has the cash-flow disadvantage of paying in advance for calls whereas the postpaid customer enjoys a month or more of credit before paying for his or her calls,
- The prepaid customer has the regular inconvenience of having to recharge the account by purchasing vouchers or via a credit card whenever it runs out, whereas the postpaid customer simply pays a regular monthly bill,
- Prepaid customers often have to pay higher call charges than do their postpaid equivalents, although in some markets prepaid customers avoid paying monthly rental fees (Faughnan, 1997, Prodata Partners, 1998).
- The choice of mobile telephone handsets for prepaid customers is often limited (see for example Mutiara Telecom, 1997),
- The prepaid customer is usually denied access to certain value-added services and features offered to postpaid customers such as international calling (Eircell, 1997), international roaming (Optus Express, 1999), voice mail (Quality Cellular, 1998), and dropped call compensation schemes (ESAT Digifone, 1998a),
- Customer care numbers for prepaid customers may be charged, whereas with prepaid services they are usually freephone numbers (see for example Eircell, 1997).

It is a marketing truism that ‘people don’t buy products, they buy benefits’ (Cox and Spickett – Jones, 1999). Davidson (1972) encapsulates marketing in action:

You merely identify a profitable customer need, design a better product or service, and then make sure everyone knows about it.

Douglas *et al* (1983) note that ‘no matter how cleverly a product is marketed, there is no substitute for a genuine performance advantage’. Wilson *et al* (1992) suggest that customers choose a product which ‘will outperform all the others’. Kotler (1980) says ‘the consumer will choose the brand that maximises the value-to-cost ratio’. Similar assertions can be found in Cooper (1993) and Lendrevie *et al* (1979). Theory would therefore lead us to conclude that prepaid mobile phone services would only be bought by those unable or unwilling to avail of traditional mobile phone services. Customers would therefore be limited to those who fail the credit checks necessary for post-paid mobile phone services, those who depend on the anonymity which prepaid mobile often confers, or those for whom the overall cost benefit justifies the reduction in benefits. Yet anecdotal evidence suggests that large numbers of consumers outside these categories are choosing prepaid mobile phone services.

The researcher’s history in the telecommunications industry and current position in a successful operator of prepaid and billed mobile services and his involvement with the development and management of prepaid mobile phone services give him access to company and industry data and to experienced professionals.

Research results may make a contribution to the understanding of buyer behaviour around prepaid mobile phone services, and provide practical information for marketers in the telecommunications industry. It might also add to the understanding of high-involvement purchases of other subscription services such as book clubs, or financial services such as life assurance, mortgages and credit cards and to the adoption and diffusion of consumer products with high symbolic value.

Previous research

Given the newness of the phenomenon, it is to be expected that there will be little or no academic research on the prepaid mobile phenomenon. Theory found in standard marketing textbooks appears to support the view that prepaid mobile phone services should be a marketing failure. This research will therefore explore a number of academic concepts that may shed some light on the strange success of prepaid mobile phone services. These include:

- Consumer behaviour and services (see for example Gabbott and Hogg, 1994). However, an exhaustive search of the literature has uncovered no academic research that specifically addresses prepaid mobile phone services or high-involvement purchases of subscription services such as traditional billed mobile phone service.
- Risk. Within consumer behaviour, the concept of risk has been well explored (Mitchell and Greatorex, 1993). The concept of financial risk might appear to be appropriate.
- Consumer attitudes to credit. There is a body of academic work on payment methods and credit (see for example Ho and Ng, 1994)
- Psychological research on mental budgeting. Heath and Soll (1996) explore this concept and suggest that customers may set mental budgets for different expenses. Prepaid mobile phone service may facilitate this.
- Trust. Prepaid services may facilitate the development of trust in a supplier or product as described by Cowles (1997).
- Confidence. Bennett and Harrell (1975) identify the buyer's confidence in his or her own ability to judge attributes of brands as important in buyer behaviour.
- The Product Life Cycle has been much criticised (e.g. Grantham, 1997) but a search has found no evidence to suggest that consumers can be persuaded to buy products with manifestly few benefits.
- Economic research studies on intertemporal choice, e.g. Loewenstein (1987), who suggests that consumers may prefer to pay in advance for some things in order to remove the 'anticipal pain' or dread of future bills.
- Social class. Sivadas (1997) finds buying differences between social classes.
- Adoption models for new products may be relevant. See for example Rogers (1962, reported in Cox and Spickett-Jones, 1999).

While all of these academic concepts may contribute something to an understanding of the reasons for the rapid growth of prepaid mobile phone service, none of them provides an overall conceptual framework for it.

There is a wealth of industry literature on the subject of prepaid mobile, but little evidence of research to support the claims made. For example Coppola (1998) quotes no research to back up his assertion that:

Prepaid wireless allows carriers to expand their subscriber base by offering services to new types of customers, such as budget-conscious individuals, business travelers and subscribers who previously did not meet minimum credit requirements.

Research aims and objectives

The purpose of this exploratory study is to identify hypotheses that may contribute to an understanding of the reasons for the success of prepaid mobile phone services. Specifically, it will attempt to:

- Develop a conceptual framework for the phenomenon of prepaid mobile phone service.
- Gain some understanding of the wider applicability of this learning – for instance, regarding adoption and diffusion of new consumer technologies or of consumer products with high symbolic value, or on the impact of payment arrangements on services.
- Identify areas for further research.

It will not examine the reasons for the growth of mobile phone services in general – rather, it will view prepaid's share of the overall mobile market.

General methodology

At the time of the proposal it was thought, based on an initial review of the literature, that the concept of 'anticipated financial exposure' might provide a conceptual framework for the success of prepaid mobile phone services. However a more thorough review of the literature suggests a more complex picture including a greater number of potential hypotheses. Therefore, an inductive, largely theoretical approach is proposed. It is hoped that intertextuality with

the fields of economics, psychology and history may add to the validity of the work.

Data collection and analysis

Given the largely theoretical approach, initial data will be from secondary sources. The literature review will draw from across the marketing discipline as well as from economics, psychology and historical texts, and from the extensive telecommunications industry literature on the prepaid phenomenon. Views of academic and industry experts will be sought in a 'Delphi' polling exercise. This will be followed by research with users of prepaid mobile phone services via depth interviews. Data analysis may be via a modified form of Grounded Theory.

The results of these two empirical studies will be tested against each other, in order to gauge the validity of the findings and to draw conclusions regarding the cause(s) of the strange success of prepaid mobile phone services.

Chapter One - Literature review

This literature review explores a wide variety of themes. Any theme which marketing theory suggests might be of interest or which the industry press put forward is investigated here.

A thorough search of the academic literature has thrown up no relevant material on mobile phone services. Moreover, Gabbott and Hogg (1994) and Crozier and McLean (1997) both make the observation that much services marketing literature concentrates on how firms may organise to market services – the ‘supply’ side, rather than the ‘demand’ side – the perspective of the customer. And while much has been written in the telecomms industry press on the prepaid mobile phenomenon, it tends to focus on the mobile network operator’s perspective – the motivations of the operator and the benefits to them - rather than exploring the user’s perspective. For instance, Clapperton (1998) reports Abdullahi O. Attah of Intercellular, Nigeria, on the decision to launch a prepaid service: ‘We did it because of the potential problems we would have with debt’. There is also some academic research on mobile communications services in general, focussing on more technical issues (for example Johnson and Bhatia, 1997).

However, there do exist a number of academic constructs with the potential to shed light on the phenomenon. These are drawn from consumer behaviour literature, from work on economics and budgeting, on socio-demographic variables and on new product adoption literature, and from studies relevant to the sort of individual product and service attributes which can be relevant to prepaid mobile services. A review of the literature is preceded by a discussion on the nature of the mobile phone service purchase transaction.

Context: the purchase of a mobile phone service

The purchase of mobile phone service is clearly both a product purchase (of the handset), and services purchase (of the network subscription). Moreover, it does not represent a standalone transaction: the new customers do not consume the service they purchase there and then. Instead they acquire the right to purchase future services (telephone calls) on demand. They also acquire the right to receive incoming calls (an ongoing service) by virtue of the allocation of a telephone number. The customer may pay a fee for connection to the network in addition to the purchase price of the handset. There may also be a periodic rental – type fee payable for the service. Kotler (1991), cited in Gabbott and Hogg (1994) suggests four categories of offer: purely tangible goods, tangible goods with accompanying services, a major service with accompanying goods, and pure services. Mobile phone service falls into Kotler's third category, as the handset is an essential part of the overall offer, and has no function without the accompanying service.

Conceptually, then, the purchase of mobile phone services service can be likened to signing up for a credit card, or without the product element, to joining a health club or a book club.

The fundamental difference between prepaid and billed mobile phone services is that whereas with billed services one receives a periodic bill for calls made during the previous period, with prepaid services one must keep one's mobile service account in credit in order to be able to make calls. With traditional (billed) mobile phone calls, purchase (incurring the obligation to pay) and consumption are simultaneous, although the service vendor extends a line of credit to the customer and payment follows later. With prepaid mobile phone calls, calls are paid for in advance to keep the account in credit (Bartlett, 1999). Therefore, both purchase and payment occur before the call is 'consumed' (the money is spent whether one subsequently uses the credits or not). There are many other differences between individual operators' prepaid and billed offerings.

Prepaid mobile phone services should not be confused with a variant of billed mobile telephone service in which the customer pays for a year's rental and a certain number of call minutes per month in advance. Usually, the customer will only receive a bill in any given month if he or she exceeds the call volume paid for in advance. This is known as 'advance pay' (Eircell, 1999 and Orange, 1998).

History

In their review of retailer, banker and customer relationships, Alexander and Colgate (1998) note that historically, retailers have offered lines of credit to trusted customers. They do not however record the extent to which the customer would choose to avail of credit offered. Indeed, they seem to assume that customers will always prefer to avail of credit where available (contrary to the findings of Berthoud and Kempson in 1992), who find that in the UK 'less than a fifth of adults were positively in favour of credit'. Historical literature on the telecommunications industry often omits all mention of payment arrangements for telecommunications services such as telegrammes (e.g. Barty-King, 1979). Historical literature on the early development of the telephone (Young, 1991 and Baldwin, 1925) suggests that telephone fees were always paid in advance until the introduction of the message rate (a charge for calls) at the turn of the century, after which calls began to be billed at the end of the month. While credit was offered, a deposit was often required (United Telephone Company, 1883 and National Telephone Company, 1889).

Consumer behaviour and services

While there is a significant body of work on consumer behaviour and services (see Gabbott and Hogg's 1994 review of the literature), much of the literature equates service with personal service, delivered by individuals, such as dentistry and car repair (see for example Zeithaml, 1981), hairdressing (Zeithaml, 1981) and estate agents (Crozier and McLean, 1997). Fisk's 1981 consumption / evaluation model for services is a case in point. In their review of Estate Agency services, Crozier and McLean (1997), cite Geva and Goldman (1989) in support of their assertion that services are produced and consumed simultaneously. This is true of a haircut or window cleaning or of a telephone call, but not for instance of

the allocation of a telephone number to a customer. This difference between mobile phone services and these single-transaction services leaves some of the specific issues relating to mobile phone services unaddressed by much of the existing literature on services.

A number of commentators (including Ambler, 1997 and Bhat and Reddy, 1998) have noted the existence of two schools of thought on human needs and motivations. The rational school suggests that consumers are rational and try to maximise total utility (see for example Hutchinson and Marchant, 1995). Other researchers (see for example Pham, 1998) contend that the rational model does not capture the emotions associated with some products or services. They refer to this type of consumption as hedonic consumption. Even consumers of products such as mortgages (Talaga and Buch, 1998) have been shown not to make their product choices on rational economic criteria.

Decision making processes

Assael (1992) proposes to describe customer decision-making in two dimensions: the extent to which the decision is made according to habit or as a conscious decision, and the customer's involvement in the decision, or the importance of the decision to the customer. Assael describes purchases that are not habitual and are high-involvement as requiring 'complex decision-making process'. Assael takes for example purchases of products such as cars, fashion items, and new stereo systems. Martin (1998) finds that interactive products, products inviting or requiring consumers to invest psychological, emotional or physical energy when using them, tend to be high – involvement. It is reasonable to put the purchase of mobile phone services into this category, in which the consumer evaluates brands in a 'detailed and comprehensive manner' (Assael, 1992).

Myers and Alpert (1968) find two 'levels' of product evaluation by consumers: overall attitude towards the item, in terms of its suitability or desirability, and attitudes towards each of the item's component features or characteristics.

Ratchford (1975) a number of consumer behaviour models and finds that 'all have as their central feature the postulate that consumer demand is a demand

for certain underlying characteristics rather than products or brands themselves’.

Park and Smith (1989) find that where the consumer is faced with a choice between products that are noncomparable at a general needs level (e.g. between a weekend break and a mobile phone), then a product-based, not needs-based process would operate. This means that the consumer would not decide which need to satisfy, but which of the products was better. Phillips *et al* (1997) find a number of different decision-making processes operating, and find that their use varies by gender and culture. In a study on consumer decision-making for fixed-line telecommunications services in the USA, Hyman (1990) establishes a ‘hierarchy of consumer participation’, and identifies a number of different types of decision-maker.

Symbolic purchasing behaviour

Within the context of complex decision-making, Assael (1992, p. 56) identifies a specific purchasing behaviour for a product that is bought ‘not only for what it can do, but for what it means’. This he terms ‘Symbolic purchasing behaviour’. Symbolic purchasing is an example of hedonic consumption. He takes for example motorcycles (rarely chosen on performance, but rather for the feelings of independence, power and kinship they confer) and jeans. Perhaps mobile phone service might involve an element of symbolic purchasing. Bhat and Reddy (1998) explore this topic further. They find that not only can a brand concept be symbolic or functional, but find two dimensions of symbolism – prestige, and personality expression. Cova (1997) explores the postmodern sense of community and develops the concept of the ‘linking value’ of a product or service – the way in which a product or service impacts on the social dynamic.

The linked subject of fashion is considered in some detail later.

Information search and evaluation

Murray (1991), Gabbott and Hogg (1994), and Crozier and McLean (1997) share the view that an important differentiator between goods and services is the need

for and availability of consumer information. Gabbott and Hogg (1994) point out:

where service is a dominant element of a product, consumers face a number of problems, primarily in acquiring and using their own knowledge and also that the external environment cannot provide appropriate objective information.

Groth (1995) suggests that this is due to the greater level of uncertainty inherent in services:

The customer assesses value fulfilment in terms of needs match and risk of delivery. Thus for services compared with a product, typically a greater proportion of the perceived value hinges on the uncertainty the customer discerns in the delivery and fulfilment of his or her expectations.

Murray (1991) notes that 'Consumers have a higher perception of risk when purchasing services, which causes them to have distinctive information needs'. His study finds 'evidence of consumers' inclination to deter making an outright purchase of services' – suggesting that in the absence of sufficient information, decision-making processes are extended.

Assael (1992) lists several factors that may increase the customer's need to acquire more information: high consumer involvement with the product or service, high perceived risk, low product knowledge, less time pressure, high price, and more product differences. Loudon and Della Bitta (1993) list similar variables. Most consumer purchases of mobile phone services would therefore require relatively large amounts of consumer information that may, relative to most product purchases, be less available to the consumer.

Loudon and Della Bitta (1993) describe two types of consumer information sources - external and internal. They characterise the former as obtaining information from other sources and the latter as 'a mental process of recalling and reviewing information stored in memory that may relate to the purchase situation'.

Murray (1991) finds that internal sources of information, in contrast to external ones, are particularly relevant to service consumers.

External information acquisition may be passive (not related to a current purchase decision) or active (the reverse). Schmidt and Spreng (1996), incidentally, suggest a continuum: 'consumers also acquire product-related information even when they are not planning to buy the product in the near term but rather sometime in the future'. Therefore, consumers are less likely to search externally for information that would be required to purchase services than they would for goods.

Most commentators, for example Loudon and Della Bitta (1993) note the importance of cues, or characteristics of the overall proposition, in product or service evaluation. Lee and Lou (1995) demonstrated that 'several consumer individual characteristics give rise to differences in cue reliance'. So different types of customer will evaluate the same product in different ways.

West *et al* (1996) find that consumers' understanding of their own preferences can be improved by the existence of a 'preference vocabulary', or the appropriate words to evaluate the product's features. It follows then that a consumer may be less likely to purchase a product or service the usage of which he or she is unfamiliar with.

Risk – definition and attitudes to

Assael (1992) states that one factor in the need for consumer information is the level of perceived risk. Mitchell (1992) offers the following useful definition of risk:

The probability of consequences occurring, multiplied by the negative consequences of the choice.

In her review of how consumer evaluation processes differ between goods and services, Zeithaml (1981) notes that perceived risks tend to be higher for services than for goods.

While some degree of perceived risk accompanies all purchase transactions, more risk would appear to be involved in the purchase of services than in the purchase of goods because services are intangible, nonstandardised, and are usually sold without guarantees or warranties.

Notwithstanding Zeithaml's concentration on personal rather than subscription services, her comments may have some validity for mobile phone services, as phone services are somewhat intangible. Guseman (1981) finds services to be perceived as inherently more risky than are goods, as do Murray (1991) and Mitchell and Greatorex (1993). Assael (1992) finds the following factors likely to increase the consumer's perceived level of risk:

- Little information is available about the product category (see also Ghosh and Ray, 1997)
- The product is new
- The consumer has little self-confidence in evaluating brands
- The price is high
- The purchase is important to the customer (it is a high-involvement purchase).

Shoemaker and Shoaf (1975) find that consumers of grocery products buy smaller quantities of new products than of non-new products, thus supporting the hypothesis that consumers perceive new products as inherently more risky than non-new products. All this would suggest that a purchase of mobile phone service might be regarded by the consumer as relatively risky.

Types of risk

Assael (1992) divides the concept of risk into a number of subdivisions:

- physical risk (the risk of bodily harm)
- social risk (the risk that the product may not meet the standards of an important reference group)
- financial risk (a function of the cost of the product or service relative to the consumer's disposable income)
- psychological risk (the chance that the product will not conform to his or her self-image)
- performance risk (that the product will not perform as expected or will fail).

As this study is focussing on the differences between prepaid and traditional mobile phone services, then only those risks which differ between pre- and post-paid mobile services are relevant. This point is however more complex than might first appear. For example, mobile phones will not work in areas where there is no network coverage (a potential performance risk), but prepaid and billed phone services use the one network and therefore present the same likelihood of product failure. However, although the chance of a product failure due to a lack of network coverage is the same for pre- and post- paid services, the risk is in fact greater for billed service, because risk is defined (Mitchell, 1992) as the probability of consequences occurring, multiplied by the negative consequences of the choice. In this case, because the relevant decision is whether to purchase the overall service rather than the decision to make a specific call, the consequences are those of purchasing the service. The consequences of having a useless phone service would be more severe for a person contracted to pay rental for the coming year than for a person with no future commitment, for instance.

Financial risk variances between prepaid and billed mobile could contain two elements. One is the risk of being overcharged or charged more than expected for calls made (or being charged for calls not made). The other is the risk of using more of the service than expected (i.e. spending more time than expected making calls) and receiving an unpleasantly large bill, though being charged at the correct and expected rate for the calls. It is noteworthy that the latter case falls outside some definitions of financial risk (e.g. Mitchell and Greatorex, 1993, Ho and Ng, 1994) because the customer is being charged at the rate expected, or, so to speak, fairly. Perhaps these writers would classify this as psychological risk. Of course, other differences of psychological risk may well exist between prepaid and billed mobile, as may those of performance risk.

Stone and Grønhaug (1993) found that the six dimensions of risk (the five above, plus time) account for only 90% of overall risk and conclude that these six may not represent the exhaustive set of dimensions for the construct. However, in this case an examination of different categories of risk may not advance the cause of assessing differences in the overall level of risk between pre- and post-paid mobile purchases.

Risk reduction strategies

Mitchell and McGoldrick (1996) note two generic approaches to risk reduction – to increase the certainty that the purchase will not fail, and to reduce the consequences of it failing. They add that by far the most common approach is to increase certainty. They go on to raise an issue germane to the problem of why these buyers of prepaid services did not avail of traditional billed services: ‘a particular problem is faced when researching the question not to purchase, as so many methodologies are anchored to specific purchases’. Dong and Saha (1998) argue that faced with insufficient information, consumers of high technology products may delay purchase until more information is available.

Greenleaf and Lehmann (1995) propose a typology of reasons for delaying purchase decisions, and find that delay reasons are linked to the reasons consumers stop delaying. Their study does not however examine situations where the decision is delayed indefinitely. Murray (1991) finds that:

...the data provide evidence of consumers' inclination to deter making an outright purchase of services. This finding is consistent with the prediction of risk theory that in the face of greater uncertainty and loss, consumers engage in an extended decision process.

Viscusi (1985) notes that ‘overall, the evidence suggests that individuals may have a reasonably accurate perception of risks that have a fundamental impact on their welfare. Risk perceptions for other more remote hazards are less precise’.

Viscusi goes on to note that individuals commonly under-estimate large risks and over-estimate small ones. Weber and Milliman (1997) find support for their hypothesis that risk preference (the preference for high or low risk) may be a stable personality trait.

Consumer confusion

Somewhat similar to risk is the concept of consumer confusion. Mitchell and Papavassiliou (1997) find, in a study of wristwatch purchasing, that due to the large number of products on display in the shop with minor differences,

consumers employ a number of confusion-reducing strategies including postponing the action.

Trust and consumer confidence

In his paper on the relationship marketing paradigm, Grönroos (1997) notes the increasing attention being given to developing trust between consumer and supplier as companies move away from the four Ps of marketing to a focus on the long-term relationship with the customer. The Popcorn report (1992) goes further:

In the nineties, consumers don't believe the promises anymore. If the ad says 'ninety people out of a hundred prefer *fill-in-the-blank*, we cynically assume that those 90 are the advertiser's 90 best friends and relatives.

Culligan (1995) cited in Croft and Dean (1996) opines that consumers are becoming increasingly distrusting of every corporate body and communication. Leventhal (1996) concurs: 'Today, consumers' confidence and their ability to seek value are so high that trust, as it was once known, is not worth much.'

A study by O'Donohue and Tynan (1998) backs this up with a study that supports and illustrates practitioners' claims that consumers are 'advertising literate'. Berry and Yadav (1996) suggest that this is a particular problem for services:

Services in general, and credence services in particular, invite pricing and performance abuses. Customers know they are vulnerable to such abuses...

The psychological construct of consumer confidence is a useful one - defined by Bennett and Harrell (1975) as confidence in a specific brand or in the consumer's ability to evaluate that brand. If risk is the probability of (negative) consequences occurring, multiplied by the negative consequences of the choice (Mitchell, 1992), then confidence is the inverse (Bennett and Harrell, 1975) of the consumer's uncertainty about any negative consequences from the purchase.

Cowles (1997) suggests the following definition of trust:

Situations involving trust...are situations in which the risk one takes depends on the performance of another actor.

Jones and George (1998) describe it neatly as ‘an expression of confidence between the parties in an exchange of some kind’. This definition however fails to recognise that trust is related to relative power: if you can do me no harm, I need not trust you. Moreover, the more I invest in our relationship, the more trust I must display. So the degree of trust required is proportional to the risk involved - and when we take risks, we engage in trusting behaviour (Johnson and Grayson, 1988).

Cowles (1997) puts forward the concept of a ‘trust threshold’ – a level of uncertainty about the marketing entity or a size of risk – above which trusting behaviour would normally be required. She suggests that these may vary from customer to customer, as well as across product categories and situations.

Consumer budgeting

My other piece of advice, Copperfield, said Mr. Micawber, ‘you know. Annual income twenty pounds, annual expenditure nineteen nineteen and six, result happiness. Annual income twenty pounds, annual expenditure twenty pounds ought and six, result misery.

Charles Dickens, David Copperfield (1850)

In this popular quotation Dickens underlines the widely accepted view that living beyond one’s means is undesirable and that one should control one’s expenditure accordingly. Heath & Soll (1990) show that consumers often set budgets for categories of expenses. They describe how consumers set budgets by labelling money as relevant for a certain class of goods and how they track expenses by labelling goods as relevant for a certain pool of money. They note that when income is fixed, over-consumption in one category will lead to under-consumption in another. Moreover, expenses vary in *salience* – some are more likely to be ‘booked’ (entered into the mental accounts) than others. For example (they say) opportunity costs may be more likely to be booked than out-of-pocket costs, small purchases than large purchases, and credit card purchases than

cash. But for expenses to be booked they must be quantified. Dickson and Sawyer (1990) report: 'The fact is that less than half of shoppers could recall the price of the item they had just placed in their shopping basket'. Urbany and Dickson (1991) find that consumers' perceptions of price for frequently purchased items are surprisingly accurate – therefore, though consumers often do not know the actual prices of goods or services, their estimates are often surprisingly accurate. This might include phone calls. Of course, for the consumer to estimate the price of a call, he or she must multiply the per-minute tariff by the duration of the call. Anecdotal evidence suggests that time may be difficult to estimate in this context. Given the evidence for consumer budgeting (and for consumers' inability to remember the price of goods they have just seen the price of), perhaps some consumers find it difficult mentally to keep a tally of spending on mobile phone calls. Consumers who feel the need to do this will find that this need is not met by traditional billed mobile service, but that it is by prepaid.

Industry literature reflects the perception that the cost control element is important. Kelly (1997) reports that 'Cellular companies design prepaid options for people who have strict budgets...'. Pennsylvania Omnipoint's web site (1998) recommends 'If you...simply wish to keep better control of your communications expenses, the Prepay Plan is the right one for you'. Likewise, Bell Atlantic (1998) suggest that their prepaid service is 'designed for people seeking control over their cellular expenses'. Strategy Analytics (1997) state '...potential users who are concerned by the ongoing monthly subscriptions with a subscription-based service, are more likely to choose a prepaid service, since they can control their monthly expenditure'. Prodata Partners (1998) report that average call durations are shorter - at around one minute – on prepay than on postpay, 'reflecting their need to remain within their prepay call budget'.

Edwards (1998) suggests that where there is economic uncertainty, a consumer might label a category of spending as 'discretionary' and may be reluctant to enter into long-term commitments for purchases in this category because of the uncertainty. This extends Heath & Soll's (1990) finding that over-consumption in one category will lead to under-consumption in another by suggesting that

budgets are adjusted to take account of variations in income. Perhaps for some consumers, mobile phone service falls into the category of discretionary spending, and the requirement to commit to future spending on 'discretionary' mobile phone services is thus a deterrent to purchase. Hammer (1998) suggests that one reason prepaid mobile phone services have been relatively unsuccessful in the USA is that prepaid services in the USA do not respond as well as those in some other countries to 'the needs to the customer whose usage is more sporadic (or) is more dependent on unpredictable cash flow...'. Prodata Partners (1998) report that Telefonica Moviles, for example, have been targeting owners of holiday homes to use the service to meet seasonal needs.

Intertemporal choice

In economics, utility is the benefit or satisfaction that a person gets from the consumption of a good or service (Parkin and King, 1995). The theory of discounted utility states that a good or service is considered to have a different value in the future than today. The standard discounted utility model assumes that people prefer to consume desired outcomes as soon as possible in order to derive utility (Simintiras *et al*, 1997) and to postpone undesired ones. So, for a telephone call made today, a person would prefer to pay the bill in six months' time rather than to pay before making the call.

These decisions in which the staging of costs and benefits are spread over a period are known as 'Intertemporal choices' (Loewenstein and Thaler, 1989). Loewenstein (1987) questions the standard discounted utility theory: he discusses the concept of 'anticipal pain' and finds by experiment that people choose to get certain unpleasant experiences over with rather than to delay them. In this study, he finds that his subjects (students) are found to prefer to delay a kiss from a film star and to receive an electric shock sooner rather than later. However, the same subjects follow standard (positive) discounting theory when considering gains or losses of known sums of money.

Loewenstein (1987) also reports an experiment with rats which found that rats, faced with a choice between an immediate electric shock and a moderately delayed one tended to choose the immediate shock. If this principle is true for

students and rats, perhaps the anticipation of a telephone bill of unknown size brings pain beyond the mere financial outlay in settling it for a significant section of the market.

Attitudes to credit and to different payment methods

If the salient difference between prepaid and billed phone services is the order in which purchase, consumption and payment occur, then one might expect this to be reflected in the literature on credit cards. However, Ho and Ng (1994) find that consumers do not perceive significantly different levels of risk between different payment methods (cash, cheque, EFTPOS, credit card).

One might expect the discounted utility theory to be reflected in attitudes to credit cards: APACS (1998a) report that despite credit cards having a considerable lead, debit cards overtook them in payment volumes in only seven years, and Canniffe (1996) reports over 50% customer take-up within 6 weeks during a trial of the new 'Laser' debit card in Ireland. Berthoud and Kempson (1992) find that in the UK 'less than a fifth of adults were positively in favour of credit'. If attitudes to debt vary between countries, then Mintel's 1997 description that 'Adults in Ireland are financially very prudent and conservative' might be relevant.

Gourville and Soman (1998) examine the effect of paying in advance for a service on the consumer's interest in that service – for example, whether a person who had purchased a ticket for a sports event a year ago would be more or less likely to drive through a snowstorm to reach the event than would be a person who bought an identical ticket the day before the event. They find that (inter alia) the longer the delay between paying for a service and using it, the more that consumer tends to treat that service as if it had been acquired for free. They also suggest 'it would be interesting and informative to investigate consumer transactions in which benefits temporally precede costs'.

Worthington (1995) reports that prepayment cards (which may be used to purchase a variety of low-value products and services such as newspapers, local public transport journeys and payphone calls) in Copenhagen have had early

difficulties in gaining consumer acceptance – though this may be due to other factors.

Minimum duration contracts and switching costs

A man ought warily to begin charges which once begun will continue: but in matters that return not he may be more magnificent.

(Francis Bacon, 'Essay XXVIII. – of Expense', 1625)

Sahay & Robertson (1997) note that a rise in switching costs can lower the possibility of new product adoption. We may infer from this that where billed mobile services involve a minimum-term contract, but prepaid services do not, consumers may be attracted to prepaid services, and demand for billed services may be constrained in the absence of a prepaid alternative. However, not all markets exhibit this difference between prepaid and billed mobile service contracts. In such markets where the purchase of a handset is subsidised by the operator (e.g. the UK and Ireland), minimum term contracts tend to apply. The Irish Times reported on 23rd October 1998 that with purchases of traditional mobile phone service in Ireland 'In a number of cases, hidden costs are involved as consumers may be asked to hand over a deposit or commit themselves to a yearly contract'. None of these charges apply to prepaid services. Alan Knott-Craig of Vodacom, South Africa, reported in a Global One press release (1997) states:

Consumers are attracted to the 'no strings attached' concept of prepaid cards...this has unlocked a whole second tier of users in the cellular market.

This implies that in South Africa, the 'no strings attached' element has been crucial in attracting this second tier of users. Swedberg's (1998b) comment on Vodacom's main competitor MTN would tend to support this view:

With the introduction of 'Pay-as-you-go', MTN has tapped into new market segments where subscribers previously have been unable or unwilling to commit to a conventional mobile service contract.

Scott-Joynt (1998) reported in Total Telecom News that 'Prepaid has taken off as an alternative to expensive airtime contracts with long terms' – again, the implication is made that the minimum commitment to monthly spend is an important contributor to prepaid's success.

Technology adoption, and diffusion of new products / services

Mobile phone service is still relatively new, and prepaid service an even more recent innovation. Rogers (1983), reported in Cox and Spickett-Jones (1999) finds that new product success is related to:

- relative advantage (those products or services that meet strongly felt needs better than the substitutes)
- compatibility (being consistent with existing values and past experiences)
- complexity (successful new products are perceived as easy to understand and use)
- trialability (how easily benefits can be sampled)
- observability (the ease with which benefits can be demonstrated).

On relative advantage and compatibility, it is difficult to judge prepaid mobile. Prepaid service is, however, more trialable (i.e. demands a lower though still significant commitment), and is relatively unobservable (though the mobile phone is regularly observable to the point of being intrusive, its prepaid nature is far less so). It may be seen as more or less complex (recharging the account is a complex operation, but the overall proposition may be designed to be easier to purchase and to understand than traditional mobiles. John Daly, in The Examiner (1997) describes the simplicity of Eircell's Ready-to-Go prepaid service thus:

This is a prepaid mobile with no rental charges. You simply buy it across the counter with a £20 phone card installed, walk out of the shop and start dialling.

Because media coverage of a company's product or service can be influenced by how the company portrays the product to the media, however, one cannot be certain that this reflects the consumer's perception of the relative simplicity of the service.

Rogers (1983), in Cox and Spickett-Jones (1999) notes that acceptance of new products comes in stages – and categorises adopters of new products as innovators, early adopters, early majority, late majority and laggards. Each of these groups has different needs of and attitudes to new products. Rogers (1995), again in Cox and Spickett-Jones (1999) suggests that ‘the rate at which markets adopt new products typically rises dramatically at between 10 and 25 per cent of total market penetration’. Prepaid service has been introduced into many mobile phone markets when penetration has been at this kind of level. However, exceptions include Finland, where penetration was very high when prepaid service was introduced (Harris, 1999), and El Salvador (Telefonica, 1998) and Nigeria (Clapperton, 1998) where prepaid service was introduced very early.

Burns and Krampf find that uniqueness-seeking and sensation-seeking behaviour can explain innovative behaviour. Xenikou (1997) finds that:

The stereotypes associated with the adopters of a new technology influence consumers’ desire to identify with these groups.

Nowlis & Simonson (1996) note that a new feature adds value & increases share when the brand:

- Has relatively inferior existing features
- Is associated with lower perceived quality
- Has a higher price
- Is both high priced and high quality

If the new way of paying for calls is treated as a new feature, then perhaps in this model, the ‘feature’ of the monthly bill for services rendered is viewed by the consumer as relatively inferior. Moston (1996) finds that fewer than 10% of the population are really technophobic, but that many more are cynical or merely passive.

Sen (1998) points out the existence of the attraction effect (which refers to the ability of a newly introduced choice option to introduce the choice share of existing options that are in proximity to it). This might imply that the arrival of

prepaid mobile services might stimulate demand for traditional mobile phone services – a notion for which there is no evidence in this market.

Branding and communication



Figure 2. The Eircell 'Ready to Go' and TIM 'Timmy' prepaid mobile packs.

Brands are:

Designed to enable customers to identify products or services which promised specific benefits. As such, they are a form of shorthand in that they create a set of expectations in the minds of customers about purpose, performance, quality and price. (Wilson *et al.*, 1992)

Motes and Woodside (1984) find that certain advertising messages can influence purchase rates of a brand, while others have no impact. Leventhal (1996) suggests that “brands...must be entirely rethought when marketing to consumers who are knowledgeable and jaded by advertising”. He goes on to describe seven types of successful brand strategy for these changed conditions. One such is the ‘Benefit Separator’:

With their increasing sophistication, consumers can readily understand a complex approach. The benefit separator appeals to them because it over-delivers on one or two points that matter most to the consumer and then under-delivers - or has the consumer do more – on the less important attributes.

Leventhal cites IKEA and Southwest Airlines as examples. Perhaps the benefit of pre-payment is one large enough to be separated – by over-delivering on a convenient way of paying for services, the operator can under-deliver on value – added service or call charges.

WirelessEurope (February 5th, 1999) quotes an Analysys report that 'As operators move their focus from business to mass market, they are becoming increasingly reliant on marketing strategies learned from hamburger chains and sportswear companies'. Some operators have chosen to create a distinctive brand or sub-brand for their prepaid offerings, while other equally successful companies have stayed with the main brand and been equally successful. Mobile Markets Alert reports on 26th October 1998 that 'One to One has issued a writ against Cellnet claiming that Cellnet's 'U' product is being passed off as One-to-one's pay-as-you-go service "Up 2 You"'.

A different brand to traditional billed phone services: while some operators including Mobistar (Belgium) (Tempo, 1998) and Eircell (Ireland) (Eircell, 1997) have developed separate sub-brands for prepaid offerings, others including MTN (South Africa) offer prepayment as an option within service packages. Prodata Partners (1998) suggest that the first to market in each country tends to develop a distinctive brand in an attempt to make their brand the generic prepay reference point.

Bhat and Reddy's 1998 work on symbolic and functional brands, and the two different dimensions of symbolism, prestige and personality expression may also be relevant where different brands or sub-brands have been developed for prepaid mobile phone services.

Quality of service / feature functionality

On the face of it, prepaid mobile phone services do not represent an improvement in quality over traditional mobile phone services. What Grönroos (1995) terms the 'technical quality' is at best the same as for traditional billed mobile phone services – the network coverage tends to be identical to that offered on billed services, and prepaid services typically offer a smaller choice of standard

handsets and greater limitations on value-added services such as mobile data, international roaming and faxmail services. So the ‘technical quality’ itself of prepaid mobile – how it does the job of making and receiving calls – offers practically no clues as to its success. Interestingly, Wolfe (1996) suggests that:

Modifying a product with a feature or premium that is of little value to the consumer, even without raising the price, may actually decrease sales.

The telephone handset is a significant part of the ‘technical quality’ of the overall proposition. In some markets at least, prepaid services are frequently offered with a limited subset of the handsets that are available to billed customers (Omnitel, 1998 and Eircell, 1998). However, Grönroos (1995) goes on to define a second component of customer – perceived quality: ‘the customer’s perception of the various interactions with the firm (how the so-called *moments of truth* are perceived)’. This he terms the ‘functional quality’. The arrival of the phone bill is certainly a ‘moment of truth’. Prepaid does away with the need for this ‘moment of truth’.

Anonymity



Figure 3: Advertisements from ‘In Dublin’ magazine (1998). All the phone numbers shown are prepaid mobile numbers.

A thorough check found no research on the value of anonymity in purchasing services. However, Faria and Dickinson (1996) found that anonymity had little impact on the response rate in market research questionnaires. Moreover, the Irish Independent recently carried a report (18th April 1998) that journalists in fear of having their mobile phones tapped should buy prepaid phone services in order to avoid being overheard. One Dublin pirate radio station (Heartbeat FM) has been known to broadcast a prepaid mobile phone number for those who want requests or dedications. Anonymity is perhaps also the attraction for the prostitutes who advertise their wares with prepaid mobile contact numbers – on one page of escort agency advertisements taken at random from a popular listings magazine, five out of seven telephone numbers were from the block of numbers used for prepaid mobile services (In Dublin, 1998). However, it is possible that if these lines were used principally for incoming calls, prepaid may be the most cost-effective option and the choice of prepaid be made on that basis.

In the absence of credit checking requirements, many providers of prepaid mobile phone services do not require customers to identify themselves. However, in countries such as Germany, France and Australia, registration is mandatory for prepaid mobile services (Prodata Partners 1998), yet the growth of prepaid mobile phone services has been strong in Germany - where Mannesmann's prepaid service, 'D2-CallYa' accounted for 18% of connections during the first quarter of 1998 (Mobile Markets Alert, 22nd May 1998) or France, where prepaid service accounted for 70% of all mobile phone sales in 1998 (Mobile Markets Alert, 6th January 1999). Moreover, Prodata Partners (1998) report that 80% of Vodafone UK's prepaid customers register voluntarily – suggesting that a small incentive is sufficient to overcome any desire for anonymity in most customers.

Anonymity seems to be a key product feature for certain market niches including criminals, prostitutes and journalists, but except in certain markets with (for instance) a huge black economy it may not be a significant driver of consumer behaviour for the majority of consumers.

The impact of channels to market

In markets where the purchaser of prepaid mobile phone service does not have to identify herself positively (where proof of identity and registration of ownership are not mandatory), operators can adopt what Wilson *et al* (1992) call more intensive distribution – selling the product through a wider variety of outlets. In these markets the prepaid service is sold in traditional mobile phone service outlets as well as new outlets. For example, in the UK Vodafone are using Woolworth's (Pratt, 1997) and Tesco (Mobile Markets Alert, 2nd November 1998) for the first time to sell both the service and the recharge vouchers, and Eircell in Ireland sell prepaid mobile phone service through Xtra-Vision video rental stores. If the target market for prepaid mobile services is consumers rather than to business customers, then standard textbooks suggest that channels such as supermarkets have a better fit with the target market and that these channels will contribute to the success of prepaid mobile phone services. In fact, Mobile Markets Alert (12th March 1999) report that supermarkets are the second most popular places to buy prepaid mobile phones.

Hsee and Leclerc (1998) however, find that 'more people would opt to purchase a product when there is an alternative product (joint evaluation) than when there are no alternatives (separate evaluation).'

This implies that though consumers may prefer to shop for a mobile phone, they may be less likely to make a purchase in a supermarket, where the range of alternative mobile phone offering is much more limited, than in a specialist mobile phone shop where the choice is wider.

Fashion

On the face of it, fashion may provide an explanation for the success of prepaid mobile phone services. Miller, MacIntyre and Mantrala (1993) define fashion as:

The process of adopting symbols primarily to provide the individual an identity relative to others.

They note that fashion operates in many diverse areas of group life, and describe fashion adoption and diffusion models for new products. Howard (1997) offers 'the fashion process involves mythical style gurus who hang around Soho coffee bars flaunting a certain article or brand. People copy them and the style takes off'. She discusses the way in which fashion is becoming fragmented as the number of influences on individual style increase. Fullbrook (1998) cites the iconoclastic economist Caroline Foley, in her paper 'Fashion' (1893). She defines fashion's 'essential element, love of change and mobility of taste, is the great incentive and primum mobile of all progress, breaking the bonds of custom by creating fresh needs or modes of need'.

All of these commentators recognise that for a product or product attribute to be subject to the dynamics of fashion, it must be visible to others. This implies that while the need for mobile phones may indeed be driven by fashion, because the prepayment element is almost invisible to others, fashion cannot be directly responsible for the success of prepaid mobile phone services.

The gift market

There is some evidence from the industry press that mobile phone service is a popular gift. For example, Harris (1999) reports that TIM (Italy) signed up 213,000 customers on Christmas Eve 1998 alone. Beckman (1997) reports that Christmas is the busiest season in the US cellular industry. There is some evidence from the industry press that prepaid service is more suited to being given as a gift than then is traditional postpaid service – Law (1999) reports that retailers in the UK were 'gearing up for a 1998 Christmas bonanza'.

If a gift is prompted by the recipient rather than unsolicited, and the giver already has a mobile phone, the gift-giver may be acting as an expert 'surrogate buyer' (Aggarwal and Cha, 1997). Aggarwal and Cha contend that these surrogate buyers perform an important rôle in the diffusion of innovations from earlier to later adopters.

Pricing

Marketing textbooks such as Skinner (1972) agree that customers will tend to choose the lowest-price product, other things being more or less equal, although Berry and Yadav (1996) note that ‘unfortunately, little research exists on the pricing of services’. Rao and Sieben (1992) discovered that ‘Upper and lower price limits of the acceptable price range were found to increase and then to level off as knowledge increased’. This would suggest that the less sophisticated market segments that have been attracted to prepay would be more sensitive to the typically high call charges associated with prepay.

Pricing for telecommunications services tends to be complex, and mobile phone services are no exception. In considering pricing for prepaid mobile services one has to take into account a number of elements in addition to the per-minute call tariff. These include:

- Any rental component of recharge vouchers, e.g. \$24.95 voucher includes \$20 call credit (Fast Fone, 1998).
- Any extra value given free with the voucher (typically, higher-value vouchers may contain extra call credits, e.g. ESAT Digifone, 1998b).
- The maximum time allowed between recharges. Forsyth (1997) reports that BellSouth’s prepay option in New Zealand allows a maximum of ‘60 days access for outgoing calls and up to six months for incoming calls’.
- The lowest denomination of a recharge voucher. With the preceding point, this determines the customer’s minimum monthly spend.
- In the case when a service is suspended because the time limit for recharges has been reached, whether any remaining value is permanently deleted from the customer’s account.
- Whether there is any charge for re-activating the service, once the voucher has expired.
- Charges for customer care and supplementary services. Eircell charges for access to customer care for prepaid customers (Eircell, 1998) but not for billed customers.

It is therefore difficult for the consumer to make accurate comparisons between billed mobile services, with their monthly rental and different call charges, and

prepaid services, particularly as prices continue to change – mostly in a downward direction (see Mobile Markets Alert, 5th March 1999 for example). In some markets, however, price levels and structures are very similar. The prices of prepaid services across the World vary widely, both between themselves and vis-à-vis billed services. In general, however, prepaid per minute tariffs are significantly higher than the equivalent charges applied on standard (billed) consumer tariff plans (Prodata Partners, 1998).

Prepaid mobile tends to be price-advantageous only for the lower users (Let's Talk Phones, 1999). Norton (1998) reports one operator's experience:

Cheaper "pay-as-you-go" packages that don't require a service contract have also hurt average customer revenue, Vodafone's Hydon said, because prepaid customers spend less per month than contract subscribers. Prepaid customers accounted for 35% of new connections in the period.

RCR International (1997) reported a study that forecasts as follows:

Revenue per customer will fall even further as the prepaid market develops... these contractless services eliminate problems of credit checks and bad debt, but we think people using them will be low spenders...

All this seems to suggest that customers will choose the lowest overall cost option, and that prepay provides the lowest overall cost for very low users of mobile phone services in many markets, by dint of the absence of monthly fees. However, Prodata Partners' authoritative 1998 report finds that 'many customers are willing to pay twice as much to use the prepay service rather than commit to a postpay contract' (p. 297).

Credit checking: a barrier to purchase?

Zhu and Meeks (1994) find that people with low incomes 'may not apply for credit for fear of being rejected'. Signing up for traditional billed mobile service normally requires passing some kind of credit check. With prepaid service, this is not necessary as large sums are never owed, although some operators allow customers a small level of 'overdraft' - for instance, if the customer runs out of credit in the middle of a call, it may be allowed to continue. Though a thorough

search has found little academic literature on the subject, industry literature suggests that, for the operator at least, prepaid services get over a credit-checking problem.

The 'Optus Express pre-paid mobile' (1999) explanatory leaflet, for example, lists the absence of credit checks as a benefit of prepaid service. InterCellular in Nigeria introduced prepaid mobile service because of the large percentage of businesses in Nigeria with no credit records (Clapperton, 1998). Helme (1997) claims that in Europe, 30-40% of people wanting a mobile phone fail credit checks. CommSure (1998) claim that between 40% and 60% of applicants for (billed) mobile phone service in the USA are turned down on credit grounds. In the Atlanta Business Chronicle, Kelly (1997) asserts:

Cellular companies design prepaid options for people who have strict budgets or who have a credit record that would disqualify them from standard cellular service...

Swedberg (1998a) reports that prepaid services are 'extremely popular in cash-based economies'. He reports that

In mature markets, prepaid services appeal particularly to those who prefer the budget control that pre-payment gives, to those who do not like the idea of giving personal details when they enter a long-term contract, and to those with no formal credit records, such as children and students.

This implies that certain socio-demographic segments of the market may be more likely to adopt prepaid mobile services.

The impact of socio-demographic variables on purchase (Social class, age, education, consumer sophistication)

Iguzquiza (1996) notes that a consumer's purchasing behaviour depends on, among other things, their perception of their economic situation, measured by the Index of Consumer Sentiment. This in turn was found (in Spain) to be linked to the balance (or lack of) between people's aspirations and the current situation in which they find themselves, and also to their social position.

Iguzquiza states:

...people who benefit from a high social position know better not only their own personal situation, but also the social circumstances of their environment, which leads them to look to the future with more optimism (...).

Therefore, the more affluent may be more inclined to take risks than the less well off:

On the other hand, people who belong to low social positions understand their environment and their own personal situation less well than the others (...). This leads such individuals to adopt negative attitudes towards the future to be prepared for the worst.

Similarly, Mitchell and Grotorex (1989) find that perceived risk and the use of risk-reducing strategies to be higher within socio-economic groups C2DE than in groups ABC1 for purchases of wine. They note that perceived risk is product-specific.

Dickerson and Gentry (1983) note that the majority of studies find that early adopters of new products tend to have more education, higher status occupations, and more income than other groups. Their research on purchases of personal computers confirms these findings.

Coleman (1983) notes that members of different social classes have different consumer motivations, and note that class often does not always correlate well with income. Sivadas *et al* (1997) find that 'while certain class distinctions (in the USA) have blurred, the upper, middle and lower classes exhibit different lifestyle, recreational and media choices'.

In a study of attitudes to different retail credit terms, Walker and Sauter (1974) find that preferences for retail credit terms vary with demographic and socio-economic characteristics. They find, *inter alia*, that lower-income consumers prefer a higher down-payment with lower monthly payments over a lower down-payment and higher monthly payments. Berthoud and Kempson (1992) find in their UK study that 'although the rich used most credit, it is the poor who had most debt'. They find that those in favour of credit tended to be younger, with above-average incomes. Those against credit tended to be elderly; among people

of working age, it was those with low incomes who were least in favour of credit. Berthoud and Kempson (1992) also find that ‘telephone bills were less likely than many other commitments to fall into arrears’.

Different social classes then, tend to differ in their attitudes to risk and to new products, and exhibit different levels of purchasing sophistication. Titus and Bradford (1996) go further, and say that sophisticated customers make better consumer decisions. They then make a case for the protection of less sophisticated customers, inferring (in contrast to Iguzquiza (1996)) that the less sophisticated consumer may be unaware of his or her vulnerability:

The purchase behaviour of unsophisticated consumers in the market, if left unprotected, will become a catalyst for unethical and unscrupulous business practices.

Kaynak *et al* (1995) find that in Turkey, ‘respondents with lower and middle income and with high school and less education who use credit cards are likely to value the credit feature (buy now without having the money) more than the service features such as safety and convenience. Jones and Mustiful (1996) find that lower-income shoppers (for breakfast cereal) show higher price elasticities of demand than higher-income shoppers – that is to say that their purchasing behaviour will change more in response to price changes than will that of higher-income shoppers.

Mobile phones are penetrating new markets. Peter D. Hart Research Associates (1997) report that in the USA ‘The wireless telephone market has expanded to all segments of society, with men and women, young and old, professionals and blue collar workers all represented’. Roth (1998) reports that ‘Cellular telephone service providers are increasingly looking to lower-end customers as the most lucrative have become saturated’.

Industry commentators on the prepaid mobile services tell us that prepaid mobile tends to be adopted by sections of society which had previously resisted mobile phone services – for example, women (Daly, 1997), the young (BellSouth Cellular Corp., 1997), students (Swedberg, 1998b), and the lower income groups (EMC World Cellular Database, 1997).

The literature suggests some psychological variables may be relevant: Foxall and Bhate (1993) examined purchases of new products by consumers using adaption-innovation theory (adaptors are characterised by order, precision, conformity, and efficiency whereas innovators are characterised by tangential thinking, challenging rules, and breaking with established methods). They found that each was likely to purchase new products, but used different decision processes. It suggests that adaptors use information sparingly and come slowly to purchase decisions. They may therefore reach fewer purchase decisions but would typically be more brand-loyal post-purchase. Donnelly (1970) defines two types of 'social character' - inner-directed (relies on own inner values) and other - directed (relies on contemporaries) and demonstrated a relationship between social character and acceptance of innovations. He finds that inner-directed people are more accepting of new products. Paden and McAlister (1996) devised different categories of customers as follows: value seekers - those seeking the best value purchases, status seekers - those who shop in stores they perceive to have social importance, and fashion seekers - those whose shopping needs are more driven by current fashion. They demonstrate experimentally that these different categories of customer not only shop in different stores but use credit cards differently - fashion seekers are more likely to pay off their account in full than are the other categories. Blake *et al* (1970) note that relationship between a consumer's personality and new product acceptance does depend in part on the product itself.

Age and race

The literature shows two demographic variables with a bearing on product use: APACS (1998b) note that younger bank customers are more likely to use ATM cash machines whereas older customers are more likely than younger ones to use cheques. Chan (1997) finds older consumers less likely to possess credit cards.

White (1975) finds that race and age have significant effects on the probability of credit card usage. Younger 'non whites' (White's term) are more likely to use credit cards. Older people's lower take-up of new products may be explained in

part by Mitchell's (1993) finding that as age increases, consumers tend to search for and process less information.

Wireless Europe reported on March 11th 1999 that in the UK, 'nearly two-thirds of prepaid customers are under 35'. Handford (1998) reports that 'Cellnet will this week launch the first cellular tariff package targeted at the youth market...the new prepaid package is designed to appeal to 16-to-24 year olds'. Scrase (1998) reports that 'Austrian mobile operator Mobilkom Austria has launched a prepaid cellular service aimed at children as young as six years old'. While these examples may appear to show these demographic groups to have a higher propensity to choose prepay over postpay, in fact they merely show that the operators in question have chosen to market these services to these target groups.

Chapter two – Hypotheses

The foregoing literature review has explored a number of themes and uncovered a variety of possible explanations for the success of prepaid mobile phone services. This chapter outlines a number of potential hypotheses that were chosen for further research in a 'Delphi' expert polling exercise.

Many industry commentators including Strategy Analytics (1997), Swedberg (1998b), Coppola (1998), Kelly (1997) and Apostolou (1998) agree that a number of factors are responsible for the success of prepaid mobile services (although they do not agree on what those factors are). Following Linstone (1975), the need was identified to produce a shortlist of hypotheses from the list of potential hypotheses discussed in the literature review in order to reduce bias that can result from over-complex 'Delphi' questioning. Those hypotheses with the strongest and least ambiguous support in the literature, and in particular those with support from both academia and from industry literature have been selected for further investigation in a 'Delphi' expert polling exercise. Hypotheses were ranked according to the level of academic and industry support in the literature review, and the top seven chosen. The following hypotheses are proposed as worthy of further investigation.

A: Trust

Issues of trust previously discussed suggest that the different payment and contractual arrangements for prepaid mobile may support the hypothesis that differences between required and expected trust for traditional mobile phone services may contribute to the success of prepaid mobile. This would be related to levels of risk perceived by the customer. The hypothesis would be:

Customers fear being overcharged or being given poor service by mobile phone companies, and therefore won't commit to a long-term relationship with a party they don't trust. Because prepay typically does not require a minimum contract

period, untrusting customers would not buy billed mobile services but do accept prepay.

B: Budgeting for mobile

If a consumer prefers to keep mental accounts and budgets for different types of expenditure, than prepaid mobile gives the consumer complete control over the amount spent. Therefore, a customer who keeps control of expenses by budgeting would tend to find prepaid mobile phone service acceptable and traditional (billed) service unacceptable. The hypothesis would be:

Consumers allocate specific budgets to large items of expenditure in order to control their spending. The size of a mobile phone bill cannot be easily estimated or controlled, so traditional billed mobile does not facilitate budgeting, whereas prepay does allow consumers to keep control of their spend on calls.

C: Anonymity

There is evidence that the anonymity offered by prepaid mobile phone services in some markets encourages some customers to choose prepaid mobile services over traditional postpaid services. A potential hypothesis is:

Many prepaid mobile offerings do not require the customer to give his/her name and address. This is important to consumers.

D: Discretionary spending - flexibility

There is evidence that the flexibility that prepaid services offer to customers may be important. This hypothesis is different to the one on mental budgeting (the need to budget may or may not be related to variations in income or expenditure) but may be linked to it. The hypothesis, then, would read:

For consumers, mobile phone service is non-essential (discretionary) spending. Consumers must be able to reduce or stop spending on discretionary expenses when necessary. With payment in advance and no bill, prepay allows customers this flexibility.

E: Dreading bills

Theories of negative discounting and intertemporal choice (Loewenstein and Thaler, 1989) provide strong grounds for the hypothesis that dread of mobile phone bills may be a hypothesis worth investigating, thus:

Consumers prefer to pay in advance for mobile phone calls because this allows them to avoid the unpleasant experience of dreading the bill.

F: Consumer information requirements and non-comparable purchases

Park and Smith's 1989 findings that where the consumer is faced with a choice between products that are noncomparable at a general needs level, then a product-based, not needs-based process would operate – i.e. that the consumer would not decide which need to satisfy, but which product was better might indicate a hypothesis expressed rather inelegantly as follows:

With its commitment to future costs, purchase of billed mobile phone service falls in the category of high-involvement, using complex decision-making processes – and the consumer must collect much information before purchase. For consumers, a purchase of mobile phone service competes with purchases of other noncomparable goods or services such as a CD player or a weekend break. If the information required to make the mobile phone purchase is less available than that for the other goods / services, the consumer will tend to spend on the other goods / services. A purchase of prepaid mobile is less complex, requiring less information, and so overcomes this barrier to purchase.

G: Price

Prepaid tariffs vary both relative to their billed competitors and in absolute terms. On the whole, however, they offer lower rental fees and higher call charges. A hypothesis that customers choose prepaid service because it offers the lowest overall price is proposed:

Prepaid services are cheaper overall for some users. Customers choose prepay because it offers the lowest overall costs for their usage pattern.

Other themes

A number of other themes were identified in the literature, but do not enjoy strong levels of support, and were therefore not developed into hypotheses.

These include consumer confusion, attitudes to credit (beyond those examined in 'dreading bills'), branding (branding only reflects the benefits of the product, it does not provide a benefit in itself), quality of service (given the conflict between different literature sources, and differences between different markets). Also excluded were the impact of channels to market (again because of massive variations between different markets), gift giving (limited academic support), fashion (because the prepaid element is usually invisible), credit checks (much industry literature looks at the operator's perspective) and demographic variables (hugely complex, with some contradictions in the literature).

Because the list of hypotheses chosen is not exhaustive, respondents to the 'Delphi' expert polling exercise were invited to list any other (unprompted) hypotheses which they considered relevant to the success of prepaid mobile.

Chapter three - Reasons for the success of prepaid mobile phone services

- the results of a 'Delphi' expert polling exercise.

Introduction

The process of asking experts their opinion, reporting back the results and asking for comments on the initial results in order to arrive at a view which is the aggregate of the experts' views is known as the 'Delphi' technique. The 'Delphi' technique was chosen as an appropriate tool to attempt to synthesise expert opinion following Tull and Hawkins (1987), Breiner *et al* (1994) and Linstone and Turoff (1975). The exercise strove to understand experts' views on which hypotheses are of greatest value and why. A detailed methodology developed following Worthington's 1990 Delphi exercise of the plastic payment cards, and modified to suit the differences in circumstances between this study and that of Worthington, following the recommendations of Linstone (1975). In this case, two rounds of 'Delphi' polling were attempted.

Experts were chosen from a number of different fields, following the examples of Czintoka and Ronkainen (1997), whose Delphi study polled experts in the business, academic and policy communities, and Meier *et al* (1998) whose Delphi study assembled a panel of individuals based on their expertise as practitioners, scholars, and consultants. Thirty-two academics who had contributed to this literature review were chosen for their expertise in the relevant academic field. Five staff from telecomms operators who were involved in developing or managing prepaid mobile phone services were chosen for their direct experience, as were six consultants with experience of working with operators on prepaid services. Nineteen people from suppliers of prepaid mobile service equipment to operators were chosen for their experience of different operators of prepaid services in a variety of markets. Respondents were invited to forward the questionnaire to other experts.

E-mail was chosen as the most efficient medium for sending questionnaires (PC Week reported in 1998 that e-mail is now the preferred communications medium of business people) – respondents were invited to submit responses by fax or by e-mail, but all chose to reply by e-mail. Both questionnaires are shown in appendix one.

The first round

In the first round, sixty-two questionnaires were sent out. A number of respondents forwarded the questionnaire to others.

The questionnaire outlined the phenomenon of prepaid mobile services, then described the seven hypotheses. Respondents were requested to read the hypotheses and then show how much each one explains (in their view) the success of prepaid mobile telephony by allocating a total of 100% between them on the form (e.g. price 30% + dreading bills 25% + trust 45% = 100%).

Respondents were invited to add their own hypotheses to the list. Finally, respondents were asked to explain their rationale.

Twenty-four completed questionnaires were received within six weeks of sending them (two from academics, five from mobile operators, eleven from suppliers of prepaid equipment or services to operators, and six from consultants). All but three had added some words of explanation for their scores. In addition, three further academics replied but did not fill in the questionnaire: one academic wrote saying he didn't have time, one that he was not the right person to answer the question, and one that the approach was wrong. The following table summarizes the number of responses:

Table 1: 'Delphi' responses by profession of respondent – round one.

<i>Profession of respondents</i>	<i>No. sent</i>		<i>% response</i>	<i>Extra responses</i>	<i>Total useable responses</i>
Academics – authors of relevant publications	32	2*	6%	0	2
Operators of prepaid mobile	5	1	20%	4	5

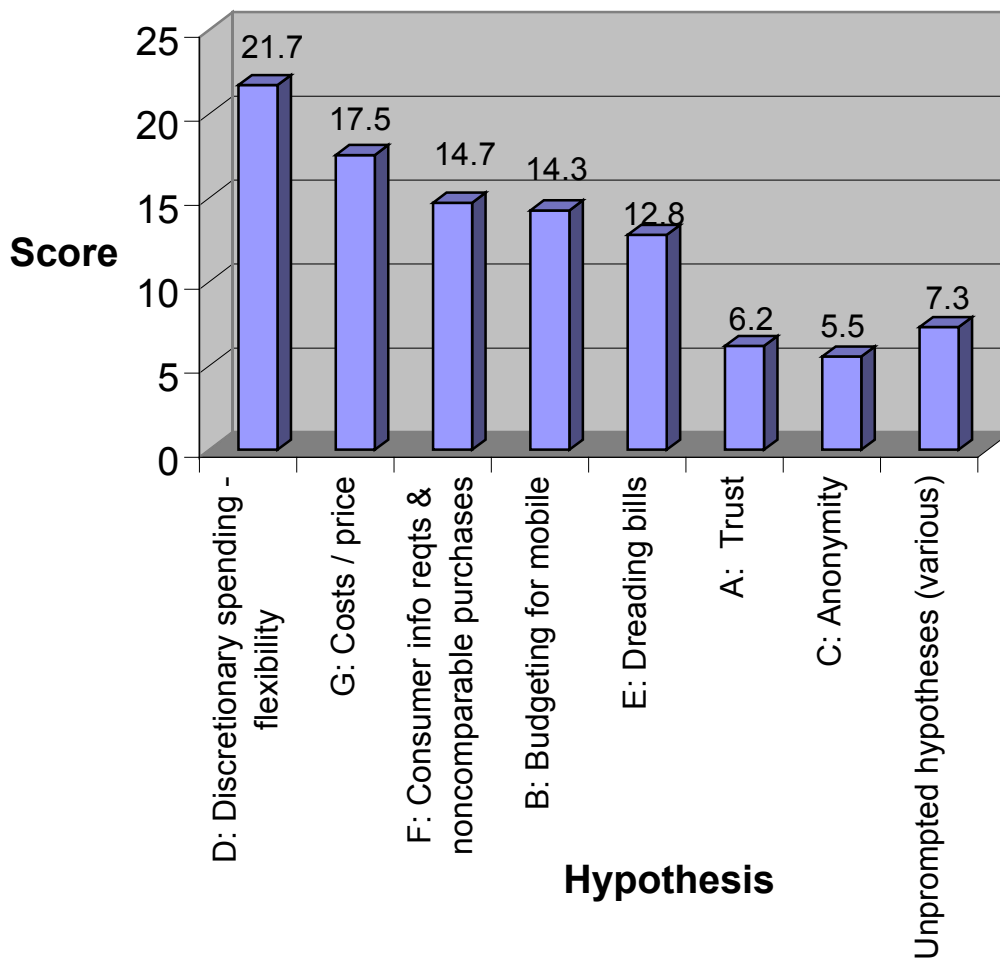
services					
Suppliers of prepaid mobile service equipment	19	6	32%	5	11
Consultants with experience of prepaid mobile services	6	5	83%	1	6
Total questionnaires	62	14	22%	10	24

*Plus three responses without completed questionnaire.

Respondents' first – round scores – overview

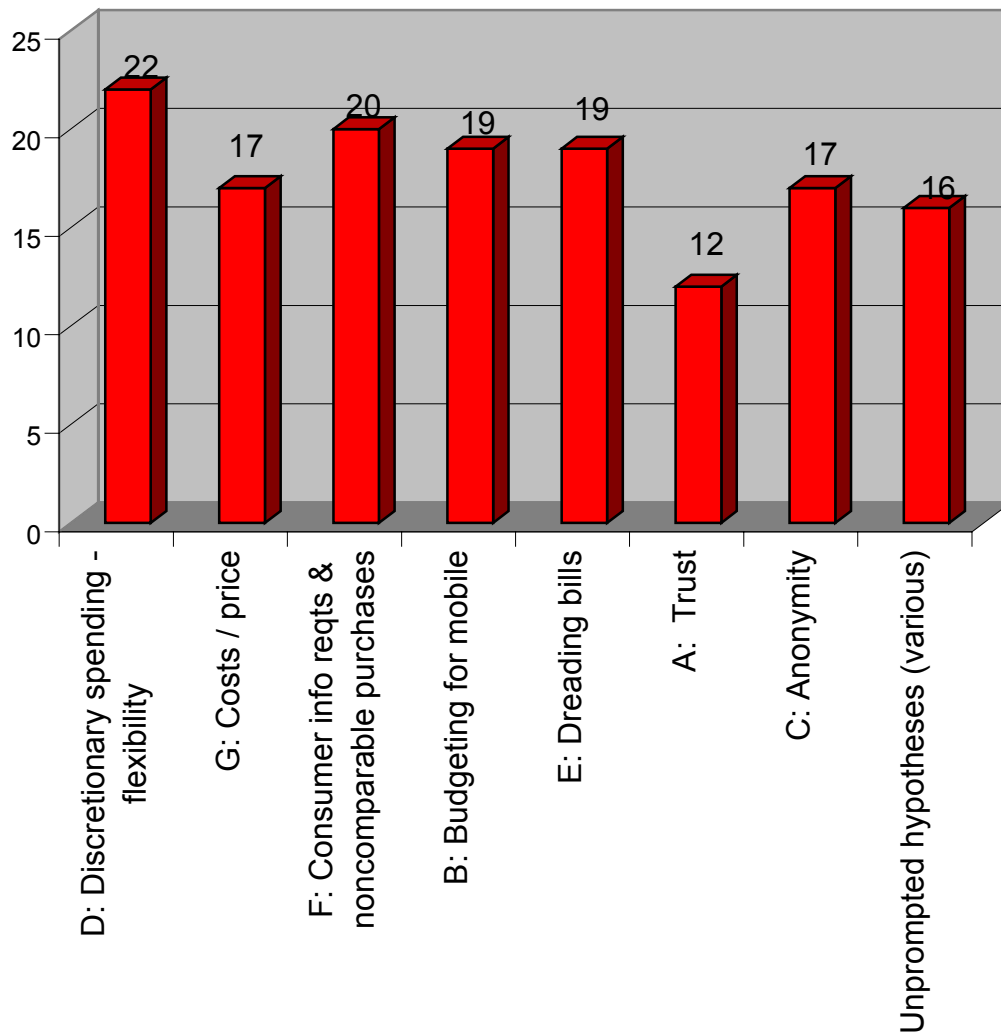
The chart that follows shows the distribution of scores between the original list of seven hypotheses. A number of respondents offered new hypotheses not listed on the questionnaire – these are shown summarised here.

Chart 1: First round - scores of hypotheses



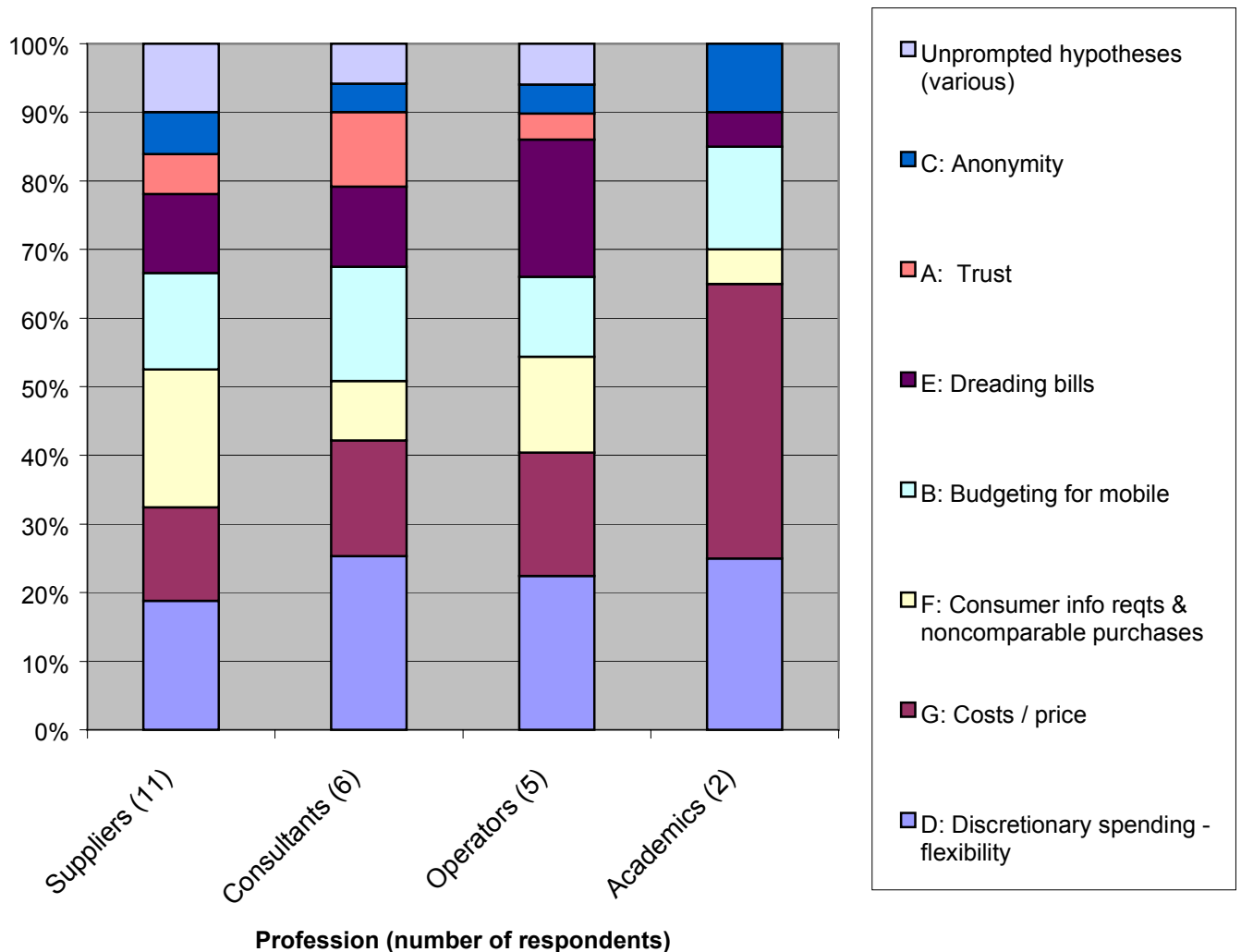
Examination of the number of times each hypothesis is scored or mentioned by a respondent gives a slightly different picture (below). This shows for instance that a large number of respondents agree that anonymity has a relatively small impact, the same number of respondents agree that price has a larger impact.

Chart 2: First round - number of mentions per hypothesis



There is a marked difference between the views of respondents of different professions, as the following chart shows.

Chart 3: Breakdown of scores by respondent type



Some of the explanations given did not support the scores given, but made other points. Three respondents made the point that different market segments will have different motivations for their preferences for prepaid mobile. One suggests there were about ten different market segments for prepaid.

The disparities between different respondents of different occupation are significant, if only insofar as they may indicate that, in the words of one writer on the Delphi process 'where you stand depends on where you sit'. This represents a significant weakness in these findings. However, an examination of the respondents' rationales, as follows, shows some agreement on the main themes.

Respondents' rationales: first round.

Here follows a summary of respondents' explanations of their scores, in descending order of the scores given.

Hypothesis D: Discretionary spending and flexibility (21.8%)

Hypothesis: For consumers, mobile phone service is non-essential (discretionary) spending. Consumers must be able to reduce or stop spending on discretionary expenses when necessary. With payment in advance and no bill, prepay allows customers this flexibility.

This hypothesis scored the highest and was mentioned by the greatest number (22) of respondents. A typical response:

'for these segments, their initial uptake of pre-pay was not based on a required purchase. Mobile communications is on their "wish list", not their "need list".

Five respondents saw this category as closely linked to consumer budgeting (B) – that consumers have a separate budget for their mobile phone, and that its size varies according to funds available. One saw discretionary spending, the requirement to budget and price as linked, thus:

'Mobile communications is for a lot of people on managed budgets a non-essential item. Thus the concept of controlled discretionary spending, Item D, is a strong influencer. Couple this with Price, Item G, and the customer has strong control over budget issues...'

One respondent saw hypotheses B (budgeting), D (discretionary spending), E (dreading bills) and G (price) as closely linked.

Three respondents made the related point that charges for prepaid tend to be related only to usage, and that

'people...do not want to be under the burden of a recurrent charge...'

of a fixed monthly rental or service charge. The absence of monthly rental or service charges for many prepaid offerings may perhaps be particularly attractive for those who see mobile phone service as a discretionary expense.

Hypothesis G: Price / cost (17.4%)

Prepaid services are cheaper overall for some users. Customers choose prepay because it offers the lowest overall costs for their usage pattern.

This hypothesis was strongly supported. A number inferred that prepaid costs less for many users with low or varying consumption of calls – because although calls can cost more, no portion of the expenditure is being 'wasted' on a monthly rental or service charge.

One respondent noted that price cannot be an important factor in her market because tariffs for pre- and post- paid mobile are the same in her market. Another opined that tariff structures are so complex that the average consumer cannot or does not compare prices. 'Finally', says one respondent 'consumers are, by and large, cognitive misers'.

Hypothesis F: Consumer information requirements and non-comparable purchases (14.7%)

With its commitment to future costs, purchase of billed mobile phone service falls in the category of high-involvement, using complex decision-making processes – and the consumer must collect much information before purchase. For consumers, a purchase of mobile phone service competes with purchases of other noncomparable goods or services such as a CD player or a weekend break. If the information required to make the mobile phone purchase is less available than that for the other goods / services, the consumer will tend to spend on the other goods / services. A purchase of prepaid mobile is less complex, requiring less information, and so overcomes this barrier to purchase.

Most respondents agreed that the simplicity of the offer (the 'lack of hassle') is important. Another gave this response:

'Customers want simplicity

-to buy

-to use

-to pay for

The whole process of contract mobile phones is cumbersome and somewhat scary (people hate credit checks). People buying a Sony Walkman understand that they need to also buy batteries regularly and buy the tapes to play in it. The users of pre pay will probably have a similar mindset.'

One respondent suggested that this hypothesis is an over-simplification of reality but went on to say:

'However, one may perhaps speculate, on the basis of consumer behaviour theory, that the degree of purchase effort required is negatively correlated to the probability of an impulse purchase being made.'

Interestingly, one respondent commented that this was the only one of the hypotheses that she had not come across or thought of before in relation to the success of prepaid mobile.

Hypothesis B: Budgeting for mobile (14.0%)

Consumers allocate specific budgets to large items of expenditure in order to control their spending. The size of a mobile phone bill cannot be easily estimated or controlled, so traditional billed mobile does not facilitate budgeting, whereas prepay does allow consumers to keep control of their spend on calls.

Respondents' comments supported this hypothesis. One said

'"No surprises" is a major attraction of the prepaid service offering.'

One respondent saw the requirement to budget as a subset of the trust issue (A)

'because when trust is low, people want the control element'.

Hypothesis E: Dreading bills (12.5%)

Consumers prefer to pay in advance for mobile phone calls because this allows them to avoid the unpleasant experience of dreading the bill.

Most respondents suggested that this is true for consumers. Two suggested that this is more likely to be the norm in cash-based economies, or with people having negative attitudes to debt, for example:

'Buying a voucher would appear to be a more positive experience than receiving a bill. Consumers who have a "cash culture" - not owing anyone type of attitude would be influenced by this type of reasoning.'

Hypothesis A: Trust (6.4%)

Customers fear being overcharged or being given poor service by mobile phone companies, and therefore won't commit to a long-term relationship with a party they don't trust. Because prepay typically does not require a minimum contract period, untrusting customers would not buy billed mobile services but do accept prepay.

Trust is mentioned in the context of a minimum contract term (which requires an increased level of trust), and relative to customers' billing and customer service problems. One typical response was:

'I think that Mobile telephony is now part of the daily life of everybody nearly everywhere in the world. People are now used to it and they trust in general the operators because they know that they can check their call details and complain to Customer Service anytime. So the trust factor is minimal in my opinion.'

Another suggested that with billed mobile services:

'...by not having direct debit the consumer can still challenge the operator if he feels he has been unjustly treated. If direct debit was compulsory this would score higher closer to 10%.'

All agree that outside of consumers' fear and mistrust of being tied into contracts, trust is not a major driver of the choice of prepaid mobile phone services. One expressed it neatly as:

'Trust is not considered a reason to buy prepaid, since an operator could "manipulate" even such a subscription.'

This minimum contract term has come up a number of times – and must be a hypothesis worth investigating in itself.

Hypothesis C: Anonymity (5.6%)

Many prepaid mobile offerings do not require the customer to give his/her name and address. This is important to consumers.

In general respondents felt that though this is important for a number of niche markets (quoted by one as 'major/minor criminals and serial adulterers') it is not important in the main. Other respondents suggested that with Calling Line Identity, anonymity is compromised anyway, and one operator reported a 'very high percentage' response to voluntary registration where incentivised – suggesting that anonymity is not a requirement for most customers in that country, at least.

One respondent suggested anonymity to be important to consumers in terms of their details not being used to send junk mail. Another suggested:

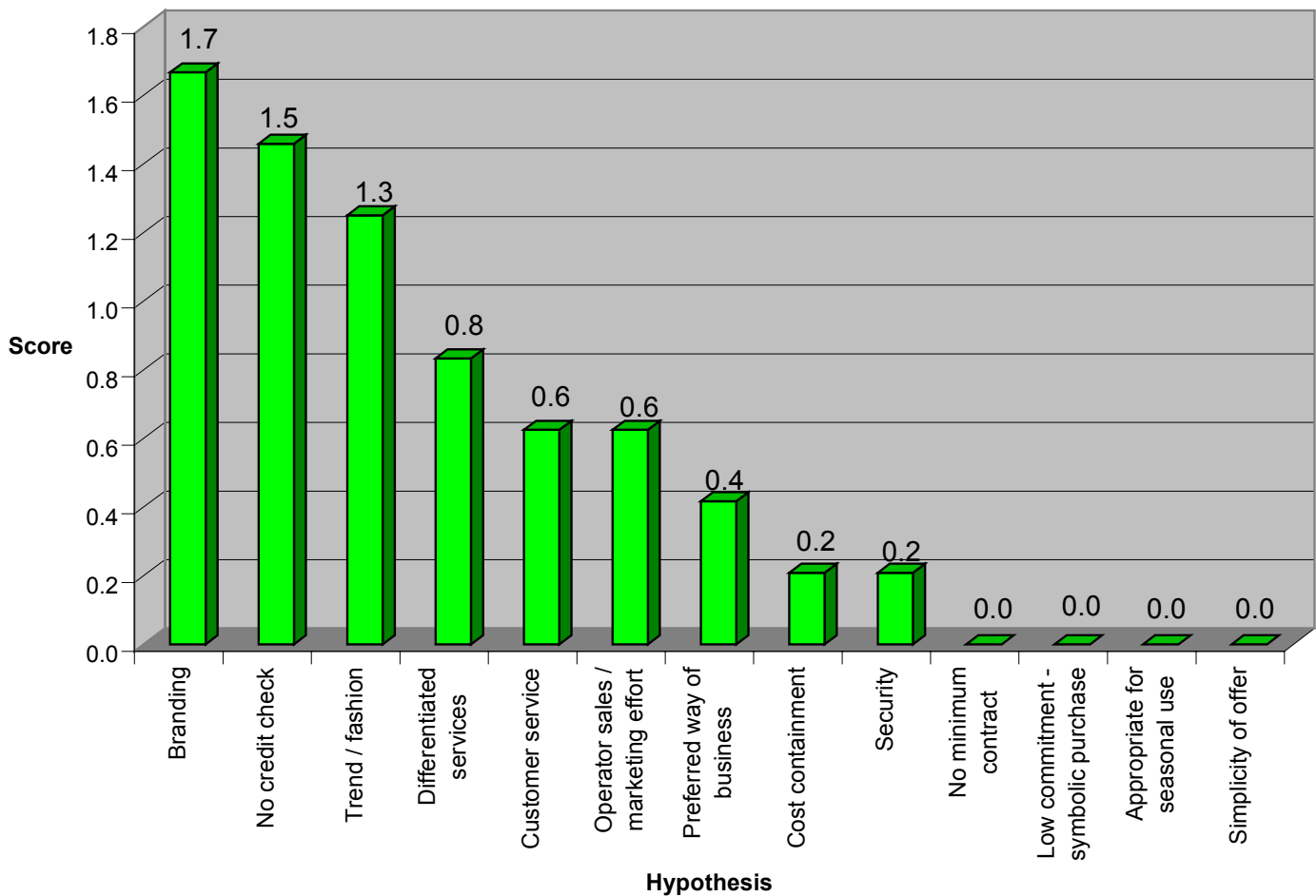
'I think this may be the case with the more advanced, less price-sensitive consumer, who has an appreciation of relationship marketing.'

Unprompted hypotheses

As can be seen from the first two charts, there were a number of new hypotheses offered by respondents.

Total scores given to unprompted hypotheses were low relative to prompted hypotheses, and are shown as follows:

Chart 4: Scores given to unprompted hypotheses



The last four hypotheses shown were mentioned by a respondent, but not given a score. All of the unprompted hypotheses were mentioned by one respondent only, with the exception of 'no credit check' (three times) and 'no minimum contract' (twice). Support for these two might of course have been wider had they been included in the prompted list of hypotheses.

One respondent responded with an entirely new classification of hypotheses to account for the success of prepaid, as follows:

- branding (name recognition, reputation, etc.) 40%
- differentiated services (futures?) 20%
- customer service 15%
- preferred way of business 10%
- cost of service (is a commodity - pricing will be less the emphasis over time) 10%
- cost containment 5%

While these explanations do somewhat overlap with the hypotheses presented, there are some new elements here.

Branding (1.7 %)

One respondent suggested that the branding and positioning of prepaid mobile services is the main reason for their success (in some markets). This may imply that a given operator's prepaid service is better branded than their billed services.

Absence of credit checks (1.5%)

Three respondents suggested that the absence of a credit check was relevant – one because 'people hate credit checks'. All three suggested that prepaid addresses a significant market segment – consumers who want mobile phones but who would fail the credit checks required to sign up for billed service. One respondent quoted that 30% of potential billed mobile customers are refused service on credit grounds. Two respondents suggested this factor is more important in economies with no significant credit infrastructure, for example South America and Asia. In such economies, billed services may be much less widely available.

No minimum term contract (0%)

This hypothesis was not scored by any respondent but was mentioned in terms of trust – the requirement to trust an operator is less, because the commitment made by the customer is lower. Another mentioned it in terms of budgeting: one can assign a more flexible budget for mobile phone costs if one is not required to contract for a minimum term. One respondent saw it as a cost issue:

'The fact that prepay does not require the consumer to commit to a long-term contract is, I would contend, a separate issue; it is, in effect, a cost issue, insofar as it afford the consumer the opportunity of owning a mobile phone without having to incur the exit costs of breaking the contract (as is the case with post-paid). This is a significant issue for first-time purchasers – in the event that the mobile proves too costly to operate, s/he wishes to extricate themselves from the service without incurring a penalty.'

Other hypotheses

The new hypotheses listed above were given relatively high scores by individuals or were mentioned by a number of respondents. The other hypotheses put forward by respondents were as follows:

Trend / fashion (1.3%): One respondent suggested:

'I think that it's a trend. A mobile phone is like any other mass-market product. Everybody has got to have one'.

Differentiated services (0.7%): Another respondent felt that the inclusion of differentiated value-added service (SMS, voicemail, information services) was an important driver of the take-up of prepaid mobile.

Customer service: One respondent quoted customer service as a reason for choosing prepaid service.

An introduction to service: two respondents mentioned that prepaid may be particularly suited to inexperienced users of mobile phones who may find it difficult to forecast usage and spend on mobile, as a lower-risk entry to the mobile market.

Mobile phones as gifts: one respondent commented:

'This also enables people to give mobile phones as presents since you are not committing the recipient to a new overhead.'

Another made the related point that prepaid facilitates lending the phone to a third party.

Operator sales / marketing effort: one respondent suggested that the success of prepaid mobile is due in part to disproportionate effort expended by operators in marketing their prepaid services.

One respondent said that prepaid was simply their '**preferred way of business**', but did not elaborate.

Another described a reason as '**cost containment**', which is perhaps related to discretionary spending, but which could also apply to business users of prepaid.

One respondent suggested that where a mobile phone is purchased for **image** reasons, then prepaid is more appropriate, but did not give a rationale.

One suggested that the **simplicity** of the offer is the reason people choose prepaid mobile phone services. The respondent did not elaborate.

Finally, mention was made of **security** as a reason to purchase prepaid mobile, perhaps implying that the security segment would tend to choose prepaid over billed mobile.

Conclusions from the first round

Responses from the first round show many respondents having clear preferences for a group of hypotheses commonly seen as linked: around budgeting / discretionary spending / overall costs. However, some respondents gave significant support to some new (crucially, unprompted) hypotheses: in particular around branding, credit checking and commitment to future contracts, or the lack of them. Respondents provided a wealth of detailed explanations for their rating choices.

The purpose of a second round of 'Delphi' polling is to explore disagreements between respondents by presenting back to each expert the rankings and explanations of others.

Round two

In the second round of 'Delphi' polling, a report on the results of the first round was sent to all twenty-four original respondents. Respondents were invited to read the report and, in the light of its contents, once again to read the hypotheses (including those suggested by respondents that had gained significant support) and then to show how much each one explains (in their view) the success of prepaid mobile telephony. Once again, they were asked to allocate a total of 100% between them on the form (e.g. price 30% + dreading bills 25% + trust 45% = 100%). Finally, respondents were asked to explain their rationale.

Five responses were received this time, as shown in the following table.

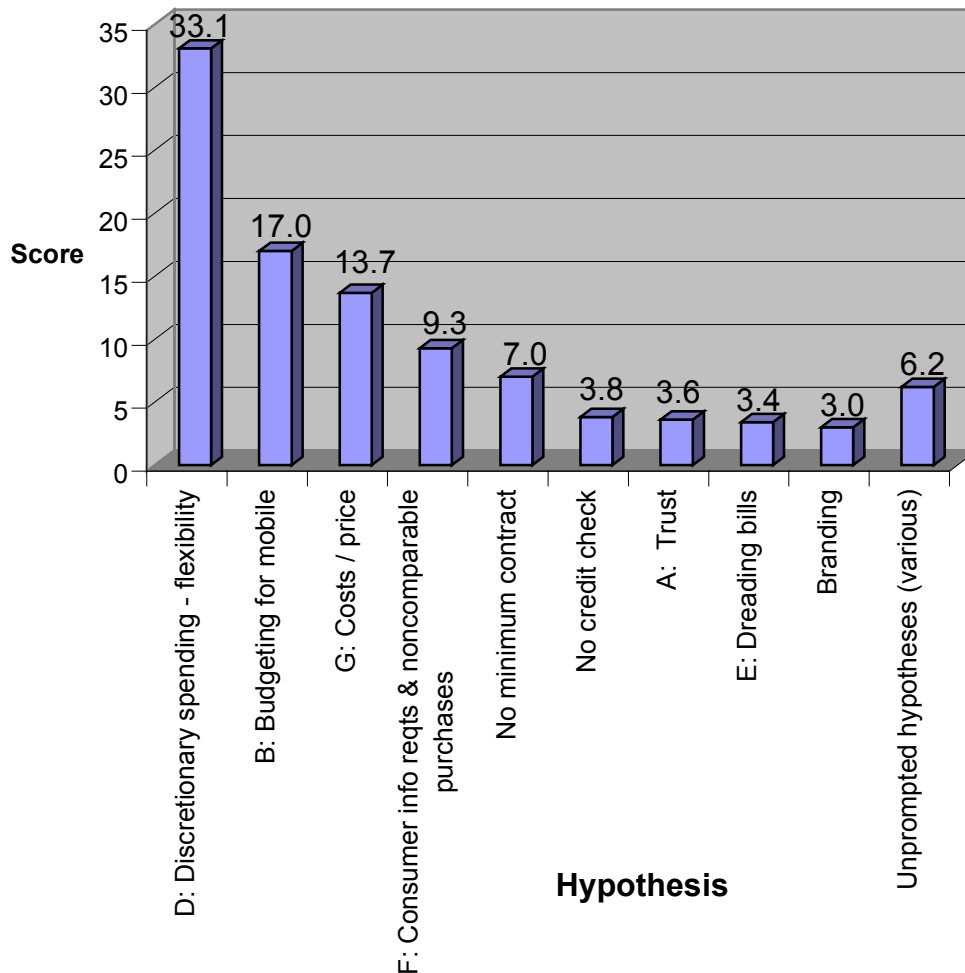
Table 2: 'Delphi' responses by profession of respondent – round two.

<i>Profession of respondents – second round</i>	<i>No. sent</i>	Total useable responses	% response
Academics – authors of relevant publications	2	0	0%
Operators of prepaid mobile	5	1	20%

services			
Suppliers of prepaid mobile service equipment	11	2	18%
Consultants with experience of prepaid mobile services	6	2	33%
Total questionnaires	24	5	21%

The distribution of scores to hypotheses in round two is shown in the following chart:

Chart 5: Second round - scores of hypotheses



As the following table shows, the score given to hypothesis D: discretionary spending – flexibility maintains its position as the most popular hypothesis, and

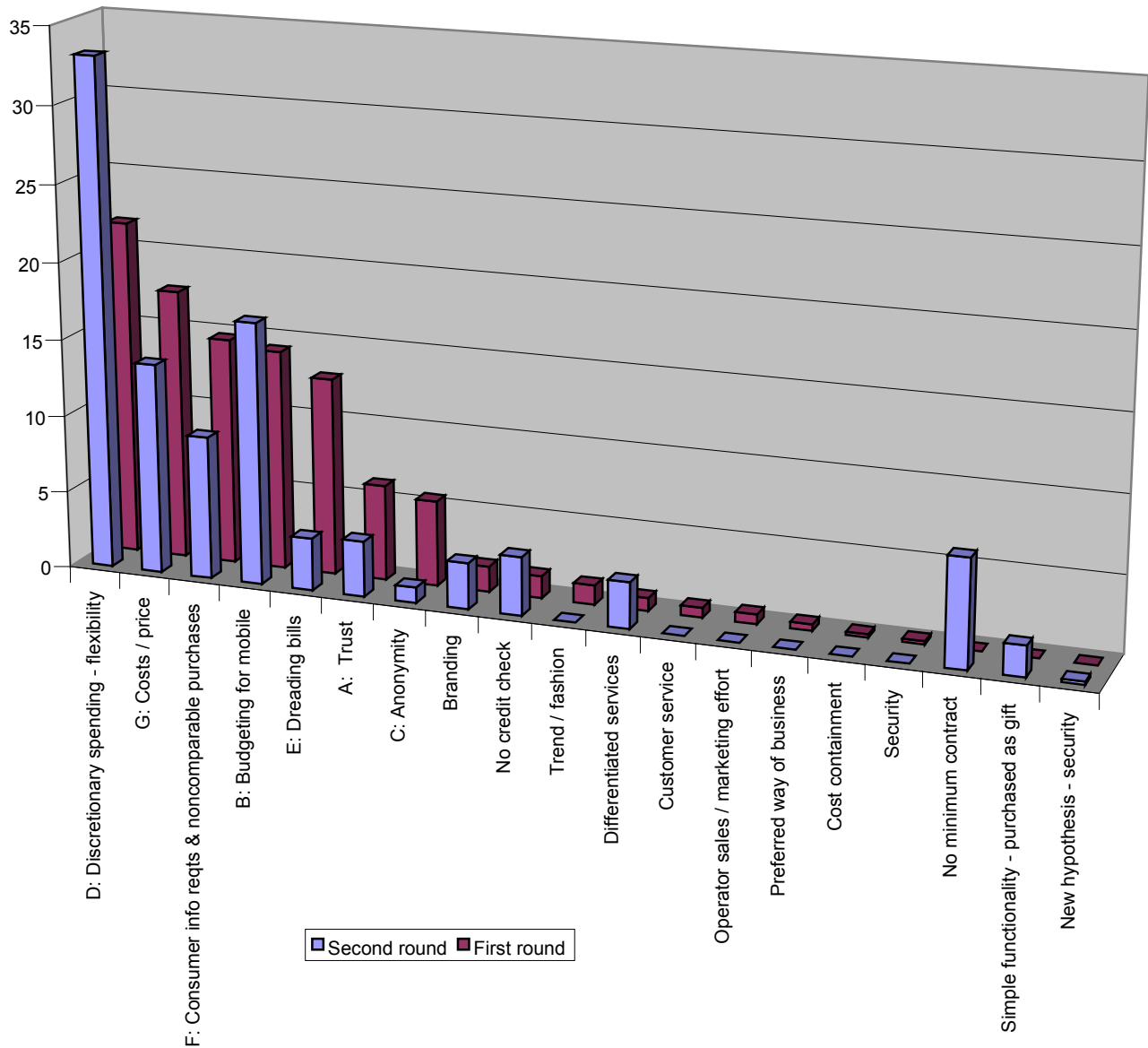
increases its lead. Hypothesis B: budgeting for mobile rises to second place at the expense of its two nearest rivals, and two unprompted hypotheses (no minimum contract and no credit check) take the next two places. This perhaps suggests that these two hypotheses should ideally have been on the original list.

Table 3: Scores of hypotheses in the first and second round.

<u>Hypothesis</u>	Second round		First round	
	<u>%</u>	<u>Rank</u>	<u>Rank</u>	<u>%</u>
D: Discretionary spending – flexibility	33.1	1	1	21.7
B: Budgeting for mobile	17.0	2	4	14.3
G: Costs / price	13.7	3	2	17.5
F: consumer information requirements & noncomparable purchases	9.3	4	3	14.7
No minimum contract	7.0	5	-	-
No credit check	3.8	6	9	1.5
A: Trust	3.6	7	6	6.2
E: Dreading bills	3.4	8	5	12.8
Branding	3.0	9	8	1.7
Differentiated services	3.0	10	11	0.8
Simple functionality - purchased as gift	2.0	11	-	-
C: Anonymity	1.0	12	7	5.5
New hypothesis - security	0.2	13	-	-
Cost containment	-	-	15	0.2
Customer service	-	-	12	0.6
Operator sales / marketing effort	-	-	13	0.6
Preferred way of business	-	-	14	0.4
Security	-	-	16	0.2
Trend / fashion	-	-	10	1.3

Given the low sample size in the second round, perhaps the data is best viewed in the following bar chart, with the hypotheses shown in order of the first round scores but with the second round scores in front. Note the scores given to the two new hypotheses on the right, in blue.

Chart 6: Hypotheses - first and second round scores



One respondent made this fundamental point: 'I find a number of the reasons you are attaching to this analysis as options may be too negative in nature and may not be the primary reason for end-users choosing prepaid service today'. Indeed, many of the hypotheses here are based on the notion that prepaid mobile overcomes a number of negative aspects of billed service.

Respondents' rationales: second round.

In the second round, two of the respondents explained their rationale for choosing the scores, providing more detail to underpin the scores. However, the disappointingly low response rate for the second round renders the data gathered of limited reliability. The low response rate may be due in part to the timing of the second round (in December, the busiest time of the year for the prepaid mobile industry), and perhaps in part due to some of the limitations - as discussed in the report on the first round - of the insights provided by the 'experts' in this case.

Conclusions and implications

Insofar as it is possible to draw conclusions there is broad agreement between respondents on their views on the main reasons for the success of prepaid mobile phone services, as follows:

- That the pay-in-advance nature of prepaid, providing the flexibility and control over costs and facilitating budgeting separately for mobile phone expenditure, is a major factor;
- That in markets where the tariff structures of prepaid mobile make this a choice with lower overall costs, this is an important factor;
- That the simplicity of purchase and low future commitment compared to billed mobile services is a significant factor (and that this may be linked to the trust issue);
- That the fact that prepaid mobile avoids the 'anticipal pain' of the mobile phone bill of unknown size is a factor;
- That anonymity (where allowed) of prepaid and the absence of a credit check appeal to certain segments;
- And finally, that trust of the operator is not a major issue for the mobile phone customer, according to our experts.

This piece of research has not succeeded in reducing the original list of potential hypotheses to one or two – on the contrary, the list is longer than ever. It has, however, clarified why and where certain factors are perceived to be important in the choice of prepaid mobile, and to whom. It has also shown that the 'Delphi'

polling technique has limitations when used on overlapping hypotheses such as these, and perhaps where there is limited understanding of the phenomenon by these 'experts'.

Chapter four - User Interviews

A number of interviews were carried out with users of prepaid mobile phone services. A qualitative technique was chosen following Pernice's 1996 findings in a study on unemployment that 'if only quantitative approaches are taken, our understanding of unemployment will not be deep enough...'. Interviews were carried out with users of prepaid mobile phone services for two reasons. The first was to understand as far as possible the place of the mobile phone in the user's life – what if anything was important to the user about a mobile phone, what he or she thought of it, how the phone was used, the customer's motivations for acquiring a mobile phone, and anything else the user had to say on the subject. The second objective was to understand the customer's motivation in choosing prepaid mobile phone service over the alternative (billed) arrangement and to understand how they viewed this alternative.

Five interview subjects were selected in order to provide a demographically – varied group. They included three men and two women, and were aged from around nineteen to around sixty-five. Three were in full-time employment, one was retired, and one was a full-time student. Subjects had owned a prepaid mobile phone for between two months and two years (perhaps important, given Grayson and Ambler's 1997 findings that as the duration of a relationship changes, it can become prone to negative influences), and two of the five had previously had the use of a traditional postpaid mobile phone.

According to Thomas (1998) the 'emotional empathy between motivational researcher and respondent is the single most important determinant of an effective interview'. Easterby-Smith *et al* (1991) describe obtaining trust as 'an important and difficult issue'. For this reason, respondents were chosen with a direct or indirect (via a mutually - respected third party) relationship with the researcher. These relationships were important in developing appropriate levels of trust in order to achieve optimum data capture.

All subjects were encouraged to choose their own venues (following Otnes *et al*, 1997) in order to put them as much at their ease as possible. Interviewees were given an oral briefing by the researcher on the researcher's dissertation topic. They were told that the researcher was asking the subject to talk about how they use mobile phones and what they think of them, and anything else they want to say about mobile phone service in general. It was made clear to the interviewees that the interview had nothing to do with the researcher's job in the mobile phone company. Following Wright's 1996 findings that tape recording 'would have compromised the flow of information from the individuals', interviewees' comments were committed to memory, then recorded onto audiotape immediately after the interview and then transcribed.

Once the subject was comfortable, the researcher then began with an initial question such as 'when did you get your mobile?' and listened to whatever the subject had to say. The researcher listened to the interviewee talk about his/her mobile phone, asking such questions as 'how do you use it?' when required to encourage the flow of conversation. The researcher minimised questioning. The researcher showed interest, and positive sounds and body language to all where appropriate.

If the interviewee did not volunteer the information, the interviewee was asked at the end whether he or she had considered choosing a billed (postpaid) mobile phone service over prepaid, and to give some details.

The methodology used for data analysis was based on Grounded Theory (following Glaser & Strauss, 1967) as described by Easterby-Smith *et al* (1991), and adapted to take account of the fact that the interviewer had developed preconceptions on the subject through the research described in chapters 1-3. In order to limit interviewer bias, therefore, interviews were non-directive (following Thomas, 1998). In the data analysis phase, because the researcher has conducted the literature review and the Delphi polling exercise, potential hypotheses to explain the success of prepaid mobile phone services have already been formed, and therefore, the process of developing themes and then links between themes from the material is somewhat prejudiced. The process was to

some extent used to confirm or overturn previously developed hypotheses, as well as to develop new ones.

The approach was as follows:

1. Familiarisation: the researcher played and re-played the audiotape of the notes, and read the typed notes a number of times.
2. Reflection: time was taken to step back from the detail and reflect on the interviews. New insights – for instance about the ambience of the meeting, background noise and body language – were gained.
3. Conceptualisation: common themes were identified from within the notes – for instance ‘what is important in a mobile’.
4. Cataloguing concepts: a small database of comments by author and theme was created. This showed the need for some limited recoding
5. Recoding: the themes to which some comments were reassigned was changed, for instance as overlaps between themes became clear.
6. Linking: groupings and links between themes were established.
7. Re-evaluation: areas where further work was required were identified.

The interviewees

Subjects are listed in the order in which interviews took place:

- M, a retired sales manager and father of seven living with his wife and one son in Dublin. The interview took place one evening in the front room of M’s house with the TV on low.
- S, a secondary schoolteacher in his fifties, living alone. The interview took place one evening in the front room of S’s house.
- E, a first-year higher education student, living with his parents and family in Dublin. The interview took place one evening in a pub near to E’s house. E is about nineteen.
- R, a woman in her twenties who lives with her parents and works in the telecommunications industry. The interview took place at lunchtime in a hotel bar near R’s place of work.
- A, is a widow who lives alone and works in the telecommunications industry. The interview took place in the evening in a hotel bar near A’s place of work.

All of the subjects live in Dublin, Ireland.

The following themes or concepts were identified during analysis of notes of the interviews. (N.B. mobile here should be taken to mean mobile service, or handset, or anything else the user associates with the overall experience.) Explanatory notes have been added [*in italics*] where necessary.

Why I have a mobile and how I received it

A. and M. had had company mobile phones in the past, but both had gone at least eighteen months between giving up the company phone and acquiring the current one. For S. the prepaid mobile phone package was an entirely unsolicited gift, whereas the others all made the decision to acquire mobile phones. Both R. and M expressed interest in acquiring a prepaid mobile phone around Christmas and subsequently received them as gifts. This seems to have been a deliberate strategy by R. and an accident of timing for M.

The rationales used by all except S. for why they acquired one or have one are all fairly similar, and are around being able to make or receive calls when not in the house, for example:

‘I got it to keep in contact when I’m going down the country’ (A)

‘because payphones always seem to be jammed or there’s a queue and I was fed up with trying to ring for a taxi from town...’ (R)

Note how R’s answer shows substitution for payphones, whereas for A. the phone apparently supplies an otherwise unmet need.

How I use my mobile

Of course, how the person uses the mobile phone once acquired can differ from the stated intended use. We find evidence of this in A’s assertion that although she acquired to use when she is ‘down in the country’, she brings it in to the

office every day and leaves it switched on. S. has found that he uses his mobile phone more than he anticipated: his early actions - he lent it first to his girlfriend and then to his niece before asking for it back and starting to use it - demonstrate his initial lack of interest in mobile phones. Now 'it lives in the car'.

A mobile phone can be seen as having two separate functions: making calls, substituting perhaps for a payphone, and receiving calls, via the phone number (substituting perhaps for a pager). How much the phone is left switched on may indicate how much the phone is used for receiving calls (if you do not want to be receiving calls, you keep the phone switched off to conserve the battery).

Evidence emerges of different types of mobile phones users: S. leaves his phone in the car, and uses it to make calls when away from home. He rarely receives calls on it:

'Only in an extreme emergency would I have someone call me on it' (S).

M. and A. both tend to have the phone switched on when they're out and about, both in order to make calls and to be contacted:

'If I go into town I take it in case I need to contact someone or they need to contact me, or if I'm away, say in Kerry for instance' [*Kerry: summer holidays*] (M)

E. and R. seem to leave the phone on all the time, even at home:

'I get my friends to ring me on my mobile.' (question: even at home?) 'Yes, if they ring me at home [*i.e. on the home phone*] I tell them off because I have to get up off the sofa.' (E).

R. reports that she might use her mobile to make a call if she is for example upstairs in her own home, away from the land line. She reports:

'I use the [*mobile*] phone too much'

However, for E. it does not replace the home phone entirely:

‘It’s mainly for people who want to get in touch with me – if I want to make an important call, I wait till I’m home because there I won’t have any coverage problems or the battery won’t run out...and I won’t have to pay for it’ (smiles).

It may be significant that these last two are younger than rest and are the only interviewees living under someone else’s roof. Perhaps one’s own phone number confers some measure of independence for the fledglings. It may also be significant that none of the interviewees uses their mobile heavily, or for business – related calls.

What a mobile means

Each interviewee suggested that mobile phones are very common. Typical was M’s comment that:

‘Sure, everybody has them now’

Both R. and E. referred to people close to them who had mobile phones. E. referred to using mobiles to keep in touch with his girlfriend and his brother, and expressed the wish that more of his friends had mobiles. R. stated that her boyfriend, brother and mother have them. Perhaps mobile phones define membership of a group in some way.

R. was going to give her old one to her father but that he does not like mobile phones. Clearly, mobile phones continue to arouse negative strong feelings for some. E. recalled a friend saying they’re ‘the worst invention ever’. S. explained:

There’s something intrusive, something tyrannical about it, as though you’re on a long lead and your boss or whatever can always get you...and you don’t get any peace....you can turn the thing off, can’t you? (asks the researcher)

Perhaps the mobile phone takes away treasured freedom for some. S. then describes the intimacy of the phone conversation:

‘I get annoyed when people use them in close proximity to me like when I’m walking through the airport, or I’m on a plane just waiting to get off and the phone rings and I er, I feel that a phone conversation is an intimate thing and I shouldn’t be listening...’

M and S, both older men, opined that mobiles are a useful tool for businesses and separately said that they were very good (M. said ‘essential’) for a woman’s security in a car. M. gave some examples of being called by his daughters from their mobiles, while in some difficulty, in their cars.

It was M. and S. again who made interesting comments (coupled with significant body language) that there might be an element of pride associated with being a mobile phone user. M. described it thus:

‘I like to think that I have a mobile phone’

- with the emphasis on ‘like’ and the only big smile of the interview, and some shifting of limbs. This seemed to imply that a mobile phone was something of a status symbol for him, but that admitting it may have caused some discomfort, or perhaps that the thought had just come to him. S. said he feels there’s something quite special about being able to call somebody from the Naas Road and say “I’m in the car” (more eye contact, more slightly agitated / excited body movement). Beginning to analyse it, he said:

‘There’s something special about being able to speak while you’re walking along O’Connell St. rather than standing at a payphone on O’Connell St., a certain something, a sense of pride maybe, perhaps it’s the novelty’.

Here is an indication that mobile phone services may evoke what Assael (1992) calls ‘symbolic purchasing behaviour’, where people ‘buy products not only for what they do but for what they mean’. S. tells a story which may shed light on the symbolic meaning of mobile phones in one market segment: last May a

schoolchild's mobile phone went off in a class and the child was asked to turn it off. The phone rang again later, and the phone was confiscated. The student had to retrieve the phone from the principal. The student seemed to be using the phone to challenge the teacher's authority. S. saw it as:

'the new way of subverting authority'.

S. associates mobile phones with a particular sort of student – a troublesome student. Interestingly, E. reports that he turns his mobile phone off in college:

'because the lecturers wouldn't be too pleased if I left it on' (smile).

Moreover, both R. and A. have received a company circular stating that personal mobile phones are not to be left switched on during working hours. Whereas R. turns hers on during breaks, A. keeps hers on at work (chin-up body language suggested some defiance). However, only two people, she says, have her mobile phone number.

What is important in a mobile

While the two older men made no reference at all during the interview to the mobile phone handset, the other three interviewees found it an important element of the mobile experience. A. described:

'The ESAT phones, now, they're very nice...the silver ones, the
Panasonics, they're very nice...'

implying that a nicer phone makes the competitor's product better than the one she had bought. E. said that he is thinking of selling his Ready to Go (prepaid) phone and buying an ESAT (prepaid, competing operator) one because, he says, the phones are better – a nicer phone, specifically a nice looking phone, for example small – is important to him. He could name the make and model of the phone he wanted.

R. had taken the opportunity to change her handset when she was given an inactive phone by a friend and she bought a SIM pack (prepaid service on your own phone) for it and gave her old phone to her mother – the phone she had been given, an Ericsson 628, was a better phone in her opinion so she prefers it, it has better sound and is a ‘nicer’ phone.

‘Nice’ seems to be associated for all those who used the word with size, colour and design, rather than functionality or performance.

All of the male interviewees mentioned the high cost of calls. M. and S. simply said:

‘They’re bloody expensive’ (M), and

‘It’s expensive. It’s damn’ expensive.’ (S).

The tone of voice in both carried disappointment, rather than outrage. E. stated that he makes most of his calls in the off-peak period as he is charged 80p per minute at peak, 20p off peak.

The two women, who work for a mobile phone company, and therefore might be less expected to express emotions at the price of calls, did not mention call charges. A. was damning, however, about coverage problems, both at her apartment in the city and ‘down home’ in the country.

What do you like about prepaid? What of the billed mobile service?

If they did not volunteer the information, interviewees were asked what they liked about the prepaid service, and whether they had considered the alternative billed, or postpaid, mobile phone service. Responses varied – M was briefly negative and S’s response to the question was as follows:

‘No, I wouldn’t be interested in that. I never wanted a mobile phone anyway only that I got one as a gift. And then all the different offers, you look around and all that kind of stuff, it’s all very confusing.’

The view expressed by A was that she didn't like Ready to Go (prepaid) with all the 'hassle of the recharging', but that she chose one. She was thinking about the £10 a month (minimum postpaid bill amount) or the £20 every 2 months (prepaid), and in the end she went for the prepaid option because there is no one year commitment.

E. said that a lot of people in college have postpaid 'that's what they're called, isn't it?' phones, and that his friend who is a mature student has one (but he has a part-time job so he uses it more) and he likes it because he pays £15 a month or whatever & he says he has all these free calls but then you'd need to check how much you have left, so he thinks he is better off on prepaid. The phones, he said, are better on 'the postpaid'. He summed up the benefit of prepayment for him as:

'You can't spend what you don't have'.

R. said that she probably should probably should be on Eirtime 50 (a postpaid calling plan) because she believes her spend is high enough to mean that switching would save her money (she spends £20 every 3 weeks or thereabouts, but sometimes 'nothing for ages'), but the credit card is the only bill she gets and she 'hates bills':

'because it's like they want you to pay it NOW.' (emphasis on 'now')

Her body language was quite animated at this point, suggesting strong emotions.

M. stated the benefit of prepay as:

'The good thing about these is the £20 business, you put the £20 into them and you don't get a bill and you don't pay any rental, and that's the good thing about those'

which like the comments of E. and R. seems to refer to the control over mobile phone spending which prepayment seems to deliver.

Other elements of the service

All interviewees had recharged the credit on their phones at least once except A, who had not needed to do so yet. S. was typical in having found the '£20 business' quite easy (he gave the sense of some achievement at having mastered it). He said:

'I don't know anything about how it works. I believe I can check how much er, cash you have left (looks to researcher for confirmation) but I don't do that.'

He showed himself ignorant of some other details of the service:

'I wonder could I get one that worked abroad, the 087 is it, that would be handy, you know with all the using foreign phones... problem, but does it cost the same as normal?'

E., however, showed awareness of other technical matters which stereotypes of the younger generation teach us to expect:

'The phones are better on the postpaid is that what you call it? And you can send text messages and so on. The functions of the phones are all the same, you can store phone numbers in them all...'

The two women have received job-related training in mobile phones, and so would be au fait with the technical aspects.

Attitudes to the mobile phone company

The three men, or those working outside the telecommunications industry, made comments suggesting that they did not perceive that they were getting a fair deal from the mobile phone companies. E. said he would prefer if the call credit

lasted forever (i.e. did not run out in 2 months) but supposes 'the phone companies wouldn't like that'. S. suggested:

'The £20, that lasts a couple of months, if I had as long as I liked to use it up that would be the best, but I don't suppose you telephone companies will be interested in doing that, the other way you'll make more money. Maybe competition will bring that in, I don't know.'

M.'s point was brief:

'I'm sure it's good for the phone companies but they're fierce expensive'.

Issues arising

A number of issues arose during this exercise which have some bearing on the validity of the results. For example, E. and A. showed much more interest in subjects other than their mobile phones. These are dealt with fully in the methodology chapter.

Summary

Analysis of these interviews shows up a number of themes that may contribute to an understanding of the success of prepaid mobile phone services. These themes will be examined vis-à-vis the output of the literature review and 'Delphi' expert polling exercise in the analysis section.

Chapter five – Analysis

This section attempts to analyse the different themes developed by research on the reasons for the success of prepaid mobile phone services. It attempts triangulation between the different pieces of research.

The literature review identified a number of themes with the potential to provide insights, and the most promising of these were developed into hypotheses for examination in the next stage.

The ‘Delphi’ expert polling exercise attempted to test these hypotheses against expert opinion, and in so doing unearthed a number of potential hypotheses hitherto unidentified.

The interviews with customers were unstructured. They generated a large variety of data – some related to previously developed hypotheses, some not.

Each potential hypothesis is now examined, beginning with those generated by the literature review.

Discretionary spending and budgeting for mobile

Two of the original hypotheses are combined here. The original hypothesis around budgeting presented in the ‘Delphi’ expert polling exercise was that consumers allocate specific budgets to large items of expenditure in order to control their spending, and that prepay facilitates budgeting (whereas with postpaid mobile it is more difficult to keep control).

This hypothesis was strongly supported by respondents to the ‘Delphi’ expert polling exercise, though many saw this hypothesis as linked to others – particularly to the one prompted by Edwards’ (1998) suggestion that where there is economic uncertainty, a consumer might label a category of spending as

‘discretionary’. While it lacks the academic rigour of many other themes discussed here, it is supported by industry literature. This second hypothesis on discretionary spending focussed on the customer’s needs to be able to vary his or her expenditure according to funds available, and suggested that prepaid mobile is more able to do this than is postpaid mobile.

If consumers’ needs to budget are particularly strong for new, relatively expensive, discretionary types of expense, then perhaps these two hypotheses are two sides of the same coin. Taken together, these two hypotheses account for 36% of the scores in the first round of Delphi – more than twice the score of any other hypothesis.

Interview data showed some support for the ‘budgeting / discretionary spending’ hypothesis. For example, E’s comment that:

‘You can’t spend what you don’t have’

seems to point directly to the budgeting/flexibility hypotheses.

Dreading bills

Theories of negative discounting and intertemporal choice provided strong grounds for the hypothesis that dread of mobile phone bills may be an important factor in the choice of prepaid over postpaid mobile.

Respondents to the Delphi exercise supported this theory (at 12.8%, it came fifth in order of popularity with respondents in the first round). Two respondents suggested that this might be a more important factor in relatively cash-based or debt-averse cultures.

Interviewees’ comments gave further support: M’s comment that:

‘...you don’t get a bill...and that’s the good thing about those’

suggests that dislike of bills is a factor for him, and R. hates getting bills – the credit card is the only bill she gets and she hates bills:

‘because it’s like they want you to pay it NOW’

- providing the clearest of statements that this consumer’s dread of bills contributed significantly to her choice of prepaid mobile phone services.

Consumer information requirements and non-comparable purchases

This hypothesis suggested that where the consumer is faced with a choice between products that are noncomparable at a general needs level (e.g. between a weekend break and a mobile phone), then a product-based, not needs-based process operates – i.e. that the consumer would not decide which need to satisfy, but which product was better. If less information is needed for a prepaid mobile phone purchase than is for postpaid, prepaid may be bought – and in its absence, the consumer may spend on an entirely different product.

This hypothesis struck a chord with many Delphi respondents, describing the attraction as ‘the simplicity’ of the prepaid mobile phone service proposition, thus:

‘...The whole process of contract mobile phones is cumbersome and somewhat scary (people hate credit checks). People buying a Sony Walkman understand that they need to also buy batteries regularly and buy the tapes to play in it. The users of pre pay will probably have a similar mindset’

There is no support for this hypothesis in the interviews section, but perhaps support would be evident if interviews were carried out at the point of purchase, or if the purchaser rather than the recipient of the mobile phone given as a present were asked.

Branding

One respondent to the Delphi questionnaire offered the view that the branding and positioning of prepaid mobile services is the main reason for their success (in some markets). If the respondent implies that a given operator's prepaid service is better branded than their billed services then this reason for the success of prepaid mobile phone service is unlike the others advanced. It is that whether or not prepaid mobile phone services meet customers' cognitive or other needs better than billed services, these needs are better understood and the benefits communicated better by the marketers of prepaid services than is the case in the marketing of billed services. This is perhaps not as counter-intuitive as might first appear. Prepaid services tend to be added on to existing mobile phone offerings and thus can be developed, managed and run separately from the (billed) rest of the business. If telecommunications companies are evolving towards being competent at marketing, and then each new product tends to be better than the last - so perhaps prepaid mobile services could potentially end up better marketed than their billed equivalent, particularly if Bhat and Reddy's 1998 work on symbolic and functional positioning of brands is taken into account.

There is no direct evidence from users that prepaid marketing is superior – or indeed that it is not, though perhaps the Delphi perception that prepaid is 'simpler' might point to unconscious support from the experts. This may support Moston's 1996 assertion that a significant proportion of the population may be either technophobic or cynical about technology – perhaps prepaid mobile is sufficiently simple to overcome the cynicism / phobia. Other research methodologies might perhaps be better suited to evaluating prepaid and postpaid mobile phone service brands.

Trust / minimum contract period

The original hypothesis suggested that many consumers would be unwilling to place sufficient trust in the mobile phone company to buy postpaid mobile, but that prepaid requires a lower, acceptable level of trust.

This hypothesis was poorly supported in the Delphi exercise, scoring only 3.6% in the first round, and 6.2% in the second. That this hypothesis was not strongly supported by the Delphi process is perhaps unsurprising given the preponderance of industry employees among the respondents. Some did see the fact that a minimum term contract is frequently required for billed mobile phone services and not for prepaid as important, but not in the context of the difference in trusting behaviour required by customers.

Similarly, though the three male interview respondents expressed views suggesting that they thought the operator might be profiteering (by charging high prices or forcing customers to use up their value in an unreasonably short period), none mentioned trust per se, or saw prepay as a way out. Neither of the female interviewees raised these issues. Interviewee A. specifically mentioned a twelve-month contract, but this may have been chosen in the context of uncertainty about usage, rather than mistrust.

There are perhaps three separate elements here. Firstly, the minimum contract period may be unacceptable in a rational / cognitive sense to customers who are using a mobile phone for the first time and find it difficult to predict usage. Second, the minimum contract term of postpaid mobile phone service may require an increase in trusting behaviour. Two respondents to the Delphi study did suggest that prepaid service might be most suited to inexperienced users of mobile phones, as a lower-risk entry to the mobile market.

Third, there may be a separate theme in the difference in required trust between prepaid (where the customer may have a perception of greater control over how much he or she is charged, for instance) and traditional billed mobile phone service, over and above any contract term issues.

Price

Prepaid tariffs vary both relative to their billed competitors and in absolute terms. Where they differ from postpaid tariffs, however, they offer lower rental fees and higher call charges. The hypothesis presented to Delphi respondents

was that prepaid services are cheaper overall for some users and that customers choose prepaid where it offers the lowest overall costs for their usage pattern.

This hypothesis was the second most popular in the first round of the 'Delphi' exercise and third in the round two. However, one 'Delphi' respondent pointed out that billed and prepaid mobile phone charges are the same in her country, thus eliminating this as a cause of the success of her prepaid mobile phone service.

Interviewees spoke about mobile phone service as being 'expensive', but with one exception did not identify prepaid mobile phone service as cheaper overall than billed mobile service, even when prompted with questions about prepaid versus billed service. The one exception was R. who said that she probably should probably should be on Eirtime 50 (a postpaid calling plan) because she believes her spend is high enough to mean that switching would save her money. R. identified cognitively that billed mobile phone service is cheaper than prepaid for users who spend more than a certain amount, and identified herself as someone who should switch, but has other objections to switching which may prevent her doing so. It appears that a cognitive acceptance that billed mobile phone service might save one money might be insufficient to outweigh other factors in her decision. We should remember, too, that R's awareness of the relative cost of the different payment options will normally be higher than that of most people because she works in a mobile phone company and that she can be expected to have a very clear idea of the cost comparison.

On a rational level there is some evidence of consumers choosing prepaid mobile because it offers the lowest overall cost for the user. However, there is evidence of hedonic consumption – R. stays with the prepaid service despite acknowledging that it costs her more. Prepaid mobile appears to bring her other benefits for which she is prepared to pay a price premium.

Absence of credit checks

Prepaid mobile services' media literature and promotional material tend to state the absence of credit checks as a benefit for operator, or customer, or both.

Three respondents to the 'Delphi' survey suggested that the absence of a credit check was relevant. All three suggested that prepaid addresses a significant market segment – consumers who want mobile phones but who would fail the credit checks required to sign up for billed service.

Customer interviewees showed no sign that the ability to obtain credit was an issue. However, other data collection methods which focus on the point of purchase may be more appropriate to measuring this, given the time lag from purchase, and that the inability to pass a credit check may be what Holstein and Gubrium (1997) call an 'especially sensitive interview topic'.

Anonymity

A search found no academic research on the value of anonymity in purchasing services. There is however some evidence from other literature that anonymity may be useful to certain segments of the market. The hypothesis was many prepaid mobile offerings do not require the customer to give his/her name and address and that this is important to consumers.

The Delphi exercise supported the literature review's suggestion that anonymity seems to be a key product feature for certain market niches like criminals, prostitutes and journalists, though not important for the majority of customers. However, one respondent suggested that anonymity might be a factor in the choice of prepaid mobile for a larger section of the population, in terms of their details not being used to send junk mail. Another concurred:

'I think this may be the case with the more advanced, less price-sensitive consumer, who has an appreciation of relationship marketing.'

None of the users alluded to this in their interviews, so perhaps the desire for anonymity for freedom from direct marketing affects only a minority. This contention is supported by the figures in the literature review showing that in markets where prepaid mobile customers are required to identify themselves at

the point of purchase and to register their phone number; prepaid services are nonetheless very popular.

The symbolic value of a mobile phone

The literature review explored the significance of symbolic purchasing behaviour, where the product is bought ‘not only for what it can do, but for what it means’ (Assael, 1992). While the Delphi exercise did not specifically identify symbolic purchasing behaviour, one respondent did suggest of mobile phones ‘I think it’s a trend...everybody has got to have one’ – an example of symbolic need.

The interviews brought forth a number of symbolic needs that the interviewees said were addressed by mobile services, to wit independence, status, and the capacity of the phone to be used to subvert authority, for example S:

‘There’s something special about being able to speak while you’re walking along O’Connell St. rather than standing at a payphone on O’Connell St., a certain something, a sense of pride maybe, perhaps it’s the novelty’.

We also see the importance of a ‘nice’ mobile phone handset to the interviewees. These benefits accrue to the user whether the calls are paid for via a bill or via pre-paid vouchers, and so cannot be identified as a benefit of prepaid service over traditional mobile phone service.

The gift market

The Delphi study showed that in some markets at least, prepaid mobile phones are easier to purchase (because there is no credit check and no need to register the phone in the purchaser’s name). They can also be easier to give and receive as gifts, because in giving a prepaid service package one is not committing the recipient to any future spend, unlike with traditional (postpaid) service in markets where the purchaser has to sign a contract committing to paying (typically) a year’s rental.

Three of the users interviewed had received their prepaid mobiles as gifts – two were prompted, one unsolicited). It should be noted that whereas S. (whose gift

was entirely unsolicited) initially showed little interest in his mobile phone, the others did not show this behaviour. The interviewees did not offer information on the donors of the gifts. In the absence of this information, it is impossible to know whether the two interviewees whose gifts were prompted received them from people already owning a mobile phone, and if so whether the gift giver acted as an expert consultant, or a 'surrogate buyer'. Aggarwal and Cha found that surrogate buyers play an important rôle in the diffusion of innovations from earlier to later adopters in their 1997 study of other products. Clearly, further research is needed in this area.

Many prepaid mobile customers receive their phones as gifts. The gift market may also be an important element of diffusion of this innovation – where the early majority share their values with the late majority by purchasing them mobile phones as gifts.

Socio-demographics

Finally, the interviews threw up some interesting difference of socio-demographic lines– particularly between the two relatively older men, who took common positions on a number of issues, and the others. The literature review identified a number of socio-demographic variables (age, social class, race) of interest. However, given the small size of the sample, this finding is of limited validity.

Factors in the strange success of prepaid mobile – summary.

The success of prepaid mobile phone services appears at first to fly in the face of marketing theory – compared to postpaid mobile phone services, prepaid seems to offer fewer benefits and higher costs for many of the users who have chosen prepaid mobile. This research has highlighted a number of needs of mobile phone customers which are better satisfied by prepaid than by postpaid services, which shed light on this apparent paradox. However, it is important to differentiate between the factors resulting from how prepaid services are offered in a particular market, and those that are fundamental to the nature of prepaid mobile phone services. In the first category are:

- Price

- Anonymity
- Branding
- The minimum contract period
- The gift market

These factors apply in some markets, but not in all. In the second category are those central to the nature of prepaid mobile services:

- Discretionary spending and budgeting
- Consumer information requirements and non-comparable purchases
- Trust
- The absence of a credit check
- The symbolic value of mobile phones and appropriateness of prepaid to symbolic purchases.

Further research is required to ascertain the weighting of different factors in the success of prepaid mobile phone services.

Chapter six – Methodological issues

This study attempts to explain the reasons for the success of prepaid mobile phone services. A methodologically pluralist approach is adopted. Hypotheses are developed through the literature review followed by deductive testing / elaboration through a ‘Delphi’ polling exercise. Finally, a phenomenological approach is taken to customer interviews. Data analysis following the interviews is via a modified form of grounded theory. An attempt is then made to triangulate between the two pieces of research and the literature review in the analysis section. This chapter describes the methodology and provides a critique of the methodology used.

The literature review

The literature review draws from telecommunications industry literature and academic sources (marketing, economics and history). In the absence of any evident academic literature on the specific subject of prepaid mobile phone services, a thorough inductive search of the literature on consumer behaviour and services was made, and promising themes followed up. In addition, the researcher first examined the industry press for opinion on the prepaid mobile phenomenon, then reviewed any academic material which appeared to be relevant to these themes. In this way, for example, a reference to freedom from bills in promotional literature for a prepaid mobile phone service led in the end to researching Loewenstein’s (1987) writings on ‘anticipal pain’ and to papers on discretionary spending.

The approach of researching academic knowledge around industry-led themes presented problems. A thorough search found very few serious inquiries within the industry press as to the reasons for prepaid mobile phone services’ runaway success, and none challenging widely-held assumptions: perhaps the majority of the industry is happy not to ask difficult questions of the success story. Perhaps Thomas Kuhn’s (1962) hypothesis that:

crises are a necessary precondition for the emergence of novel theories

applies in the mobile phone industry as much as in the scientific community. Any that do may recognise the competitive advantage that a superior understanding of the reasons for the phenomenon would bring, and keep quiet. Perhaps some firms' marketing departments have made serious enquiries on this subject: if so, none seems willing to admit it. Either way, in the absence of a serious debate on the issue, industry opinion on the reasons for the success of prepaid mobile phone services provides a poor place to start academic inquiry.

The review of academic literature is limited in a number of ways: there is no analysis of papers in languages other than English (with the exception of one French text), as there is of material requiring a very high technical competence in subjects such as economics. The choice of which material to collect and which to keep must be a subjective and therefore inherently a flawed one. A researcher with no experience within the telecommunications industry, or with a different experience (for instance one associated with one of the few failures of prepaid mobile phone service launches) would have a different frame of reference.

Hypotheses

As the choice of themes to research is subjective, so must be the identification of hypotheses necessary for the Delphi exercise. The researcher attempted to choose hypotheses that were identified by the industry and supported by academic research, but this choice is essentially subjective. Moreover, this approach would be unlikely to unearth new hypotheses which industry opinion had hitherto ignored.

'Delphi' expert polling

The 'Delphi' exercise can be subjected to a number of criticisms. In the selection of the subjects, the researcher drew from authors of academic literature and from experts on prepaid mobile services in the telecommunications industry, some of whom were personally known to the researcher. Those among the subjects who were personally known to the researcher might therefore be seen as

belonging to a certain social group, which may respond in a way untypical of industry experts as a whole. Linstone (1975), in his fine critique of the Delphi technique, damns it thus:

Poor selection of participants (e.g. friends recommending each other for membership) can produce a cozy group of like-thinking individuals which excludes mavericks and becomes a vehicle for inbreeding.

However, it should be noted that very few of the respondents known to the author were known to each other, and the identity of the respondents kept secret from each other, so this is not a significant problem in this case. Of course, if there were bias, any bias might be exacerbated by a tendency for those better known to the researcher to be more likely to reply. Indeed, a response rate of 61% was achieved from those subjects previously known to the researcher, and of only 12% from those to whom the researcher was previously unknown. This may have been due in part to the tendency of email addresses to become obsolete. Indeed, the very use of email, despite its quasi-ubiquity in the academic community and the telecommunications industry, might in theory be a cause of some bias. Moreover, most respondents were from Europe (others were from North and South America, and the Middle East), and none was from Asia – indeed, if more were known about the subjects, further sources of potential bias might be found.

The following table, showing percentage response rate by profession, lends some support to the notion that different professions may have treated responses to the questionnaire differently. It should however be borne in mind that most of those known personally to the researcher were consultants or suppliers – so this chart may in fact be answering a different question.

Table 4: ‘Delphi’ response rate by profession of respondents.

<i>Profession of respondents</i>	<i>No. sent</i>	<i>No. received</i>	<i>% response</i>
Academics – authors of relevant publications	32	2*	6%

Operators of prepaid mobile services	5	1	20%
Suppliers of prepaid mobile service equipment	19	6	32%
Consultants with experience of prepaid mobile services	6	5	83%
Total questionnaires	62	14	22%

*Plus three responses without completed questionnaire.

The relationship between researcher and respondents may have been subject to bias due to the identification of the researcher's employer, if previously unknown, via existing knowledge of his email address (srees@eircell.ie). For example, potential suppliers of equipment to Eircell may have seen the questionnaire as a sales opportunity and thus could conceivably have given extra weighting to factors which portray them in a good light, such as extra functionality of prepaid services, over negative connotations such as lack of trust towards operators. Potential suppliers of consultancy services might have given over-complex responses in order to demonstrate expertise. Potential competitors to Eircell may have feigned ignorance or even deliberately tried to mislead. In practice, however, there are no current or known future competitors to Eircell among respondents.

Of course, even if there is no intention to mislead, one cannot expect objectivity. Linstone (1975) quotes one Rufus Miles's elegant synthesis of the problem as 'Where you stand depends on where you sit'. Moreover, many respondents were chosen because of where they worked, and respondents who passed the questionnaire to other contacts of theirs chose the recipients by their own criteria. There was no test of respondents' expertise!

The timing of issuing the questionnaires may have influenced the likelihood of response: the first round was sent in October, when academics tend to be busy with settling in to the new academic year. The second round went out in

December, a very busy time for the prepaid industry - Mobile Markets Alert (7th January 99) report 'huge sales achieved over the Christmas period' of prepaid mobile phone services in the UK, for instance.

Linstone (1975) suggests some further criticisms that might be applied to this exercise. He finds that respondents can have an urge to simplify, because '...certainly most of us cannot deal mentally with such a multitude of interactions'. However in this exercise respondents mentioned or scored an average of 5.9 hypotheses each in the first round and 7 in the second.

Although the overall length of the questionnaire compares favourably with that of (for instance) Worthington (1990), the hypotheses can be criticised for their excessive length. Some evidence comes from 'Delphi' responses of instances of poor understanding of the hypotheses, where the supporting comments do not entirely match the scores awarded.

It is perhaps feasible that these experts' responses might be influenced in some way by the existence of advertising messages around prepaid services.

Any bias from the foregoing factors in the first round may become further embedded in the second - Linstone (1975) quotes an experiment by Cyphert and Gant (1970) which showed that false conclusions introduced in the first round can cause respondents in the second round to distort their responses accordingly.

The emergence in the first round of significant support for unprompted hypotheses such as the one based on credit checking, and stronger support for these new hypotheses suggests a significant weakness. The total score allocated to a prompted hypothesis cannot fairly be compared with the score given to one proposed by respondents because one might reasonably expect prompted hypotheses to be scored higher. If a comprehensive list of hypotheses cannot be presented in advance, then perhaps a better solution is to present none and to ask respondents to generate their own list, together with scores, from scratch. This methodology would however perhaps be less likely to achieve consensus.

One respondent made this fundamental point: 'I find a number of the reasons you are attaching to this analysis as options may be too negative in nature and may not be the primary reason for end-users choosing prepaid service today'. Indeed, many of the hypotheses here are based on the notion that prepaid mobile overcomes a number of negative aspects of billed service.

Another respondent suggested that the researcher's implied model was too rational, linear and additive. Furthermore, he suggested that the research should focus on what he called 'real people', not academics. This suggests three weaknesses in the methodology. Firstly, the respondent saw in the questionnaire an implied additive model – that for example an individual consumer purchasing mobile phone service would make their decision by considering each factor and weighting them – for instance 60% according to a requirement for anonymity, 40% due to dread of bills. There is no evidence either way from 'Delphi' respondents on assumptions of an additive model.

Second, the survey proposed hypotheses most of which are logical/rational rather than emotional in their approach, though the ones on 'dread of bills' and 'consumer information requirements and non-comparable purchases' are not. This cognitive / hedonic debate is discussed in the literature review.

Thirdly, research is required of what he calls 'real people'. Industry experts in a Delphi exercise will tend to reflect industry-wide views as propounded in industry media, just as academics will tend to see the problem through their professional frame of reference, and thus the results will reflect their socially - constructed reality.

Perhaps the most important criticism of the 'Delphi' exercise is that contrary to expectations, the supposed experts showed little evidence of detailed understanding of the problem.

Mobile phone user interviews

This process was successful in identifying some relevant themes. In particular, the emergence of data around the symbolic value of mobile phones – which may

not have emerged from a more positivist methodology – vindicates the choice of methodology. The methodology is, however, subject to a number of criticisms.

Depth interviews were chosen following Williams (1981) and Easterby-Smith *et al* (1991), who state:

Interviews, semi-structured or unstructured, are therefore appropriate methods when:

- a) It is necessary to understand the constructs that the interviewee uses as a basis for her opinions and beliefs about a particular matter or situation;
- b) One aim of the interview is to develop an understanding of the respondent's 'world'...

This ideographic, phenomenological approach was taken because the objective was to understand feelings and motivations. Easterby-Smith *et al* (1991) explain the key question when considering to undertake 'depth' interviews or more quantitative research:

The key is whether the quality of experience is more important than the frequency of opinions and events.

Another reason for choosing non-directive interview techniques is that through the researcher / interviewer's previous work (literature review, 'Delphi' exercise) he had developed knowledge of the subject which might otherwise give rise to interviewer bias.

Except for the specific question asked, if necessary, at the end, interviews were designed to be unstructured. As Easterby-Smith *et al* (1991) point out, 'Often people aren't aware of their own motives'. Interviewees were therefore allowed to treat the subjects in any way they choose in order to allow subtleties to emerge.

Alternatives to depth interviews and grounded theory that might have been used are:

- Thompson's (1997) methodology. In 'Interpreting consumers: a hermeneutical framework for deriving marketing insights from the texts of

consumers' consumption stories' he explains a methodology for deriving insights from consumers' stories.

- Easterby-Smith *et al* (1991) report a study where a researcher gathered data by engaging in conversations on trains, using the 'prop' or stimulus of a thick file marked with the subject the researcher was keen on discussing. Other passengers would spontaneously start conversations with the researcher and data gathered with the minimum of bias. In the case of prepaid mobile, it would perhaps be appropriate to travel on the top deck of a bus, sit next to someone, and unwrap a prepaid mobile phone package. If the person did not strike up a conversation, the researcher could start the conversation by asking for assistance with working the phone.
- Protocol analysis could be carried around the point of purchase (Easterby-Smith *et al*, 1991), though because this analysis focuses on the point of purchase, no data would be gathered on post-purchase experience or on the important subset of consumers who receive prepaid phones as gifts.

The choice of interview subjects could be criticised. In selecting the interviewees, care was taken to represent both sexes and an age range from about nineteen to around sixty-five. And though one would expect the same themes to be repeated in a larger study, there is nevertheless little chance that their relative emphasis would be replicated – particularly if repeated in another country or city. For this reason the popularity of each theme is not given undue attention in the analysis. Moreover, a control group of non-mobile users, or of users of billed mobile phone services might have allowed useful comparisons.

The interview as a method of data collection has been a subject much discussed. The first criticism is that there is no such thing as objective data. Holstein and Gubrium (1997), in their paper on active interviewing, suggest that:

Typically, those who want to find out another person's feelings, thoughts or actions believe they merely have to ask the right questions and the other's 'reality' will be theirs.

They describe this as the 'vessel of answers' approach and opine that:

Construed as active, the subject behind the respondent not only holds facts and details of the experience, but, in the very process of offering them up for response, constructively adds to, takes away from and transforms the facts and details. The respondent can hardly 'spoil' what he or she is, in effect, subjectively creating.

This does not in itself destroy the value of the interview: Miller and Glassner (1997) point out that

While the interview is itself a symbolic interaction, this does not discount the possibility that knowledge of the social world beyond the interaction can be obtained.

The researcher accordingly tended towards normal conversation and away from clinical detachment. Easterby-Smith *et al* (1991) also commend this approach, saying:

Clearly, therefore, social interaction is an important factor in qualitative interviewing, and an important ingredient in all the methods we discuss is trust.

In order to eliminate any conclusions that interviewees might draw from researcher's choice of venue (Easterby-Smith *et al*, 1991) and to put them at their ease and to increase trust, interview subjects were encouraged as far as possible to choose the venue for the interview. As Thomas (1998) explains in his paper on motivational research:

The most effective strategy is the use of depth interview where the interviewer needs to establish a rapport with the interviewee to get the interviewee's trust and truthful responses.

One further area to consider is that interviewees may be expected to withhold information which paints them in a bad light, particularly if a personal or work relationship with the researcher may be at stake. For example, if the consumer failed the credit check necessary for a billed mobile phone service subscription, he or she may not let on.

It is impossible to rule out other bias due in the interviewer – interviewee relationships. As Miller and Glassner (1997) say: 'The issue of how interviewees respond to us based on who we are – in their lives, as well as the social categories to which they belong, such as age, gender, class and race – is a

practical concern as well as an epistemological or theoretical one...' Baker (1997) notes the impact of the group the interviewee might be representing: 'How people describe things and how they reason about them are pragmatic selections from a range of possibilities.... Imagine the differences in being approached to speak 'as a mother of three' and being approached to speak 'as a professor'...'. All of the interview subjects were aware of the researcher's position working for a mobile phone company, and bias from this knowledge cannot be ruled out, despite the measures taken to maximise trust.

Once the interviews had taken place, notes were recorded onto audiotape immediately afterwards and then transcribed within a few hours.

Easterby-Smith *et al*, 1991 say 'The skills of the interviewer centre around the ability to recognise what is relevant and remember it, or tape it, so that afterwards detailed notes can be made'. Peräkylä (1997) gives a useful description of many issues of reliability and validity that may occur in research based on tapes and transcripts.

It is noteworthy that the interviewees showed relatively little interest in the subject under discussion. The interview with M. took place in his living room with the sound on the TV turned down. When the TV news came on he turned the sound back up to watch the news together. During the next ad break the interview resumed and ended. E. and A. showed much more interest in subjects other than their mobile phones, and M. and A. both apologised for not having said much of use. Ambler (1997) points to the problem of asking people their views on subjects in which they have little interest or to which they have hitherto given little thought that the respondent may feel 'impelled to provide a sensible answer'. Reports are then cognitively processed and 'A report which is irrational or a-rational will be discounted, even though it may represent reality'.

While this is a weakness of all interview techniques, non-directed interviews and grounded theory analysis will be less subject to bias than positivist methodologies.

If respondents were giving cognitive responses to questions, perhaps these responses would themselves be influenced by advertising. Therefore, in a market where 'no credit check' was an advertised benefit of prepaid mobile phone services, perhaps interviewees would see that as the 'correct' (informed) answer. Minimising direction and structure in the interviews should minimise this.

Grounded theory technique was used in a slightly modified form here to take account of the particular circumstances of the exercise. Its adaptation is not a modification to its structure, but was rather a recognition that because the researcher is familiar with existing concepts around prepaid mobile phone services, the process of developing themes through grounded theory will not be an entirely objective one. The variation is based on the requirements of this particular study, and not on previous successful uses of such a variant.

Chapter seven - Conclusions, areas for further research

This dissertation set out to explore the reasons for the success, despite their many drawbacks, of prepaid mobile phone services. Since the original research proposal, many new prepaid mobile phone services have been launched, for example in Ireland (ESAT Digifone, 1998a), India (Apostolou, 1998), and El Salvador (Telefonica, 1998) as well as Cellnet's 'U' service (Cellnet, 1998) in the UK. Prices continue to fall (Sharrock, 1999) and sales continue to forge ahead (Mobile Markets Alert, 6th January 1999).

On the face of it, prepaid mobile phone services have major drawbacks compared with their postpaid equivalents. Calls are paid for in advance instead of more than a month later, the customer has the inconvenience of recharging the account when the balance is exhausted, calls often cost more, handset choice is often limited, access to value – added services is usually restricted, and calls to customer service may not be free. Yet Kotler (1980) reflects marketing orthodoxy in saying 'the consumer will choose the brand that maximises the value-to-cost ratio'. This research attempted to shed some light on this apparent paradox.

The original research proposal proposed the concept of 'anticipated financial exposure' to explain the growth of prepaid mobile phone services, based on an initial search of the literature. This was later revised to take account of a number of other potential hypotheses that emerged following a more extensive search of the literature. The emergence of these potential alternative hypotheses also prompted a revision of the methodology, from the possible quantitative study originally proposed to test the proposed concept to the pluralist approach eventually adopted for this exploratory work.

This research first identified and then found varying levels of support for a number of hypotheses that shed light on the reasons for the success of prepaid mobile phone services. These are discussed in detail in the analysis section. The

original hypothesis in the research proposal (that prepaid mobile phone services allow a person to avoid the ‘anticipated financial exposure’ inherent in billed mobile phone services) finds support in different ways. The research finds that prepaid mobile facilitates budgeting and control over discretionary spending and that dread of bills, or ‘anticipal pain’ is also a factor. Taken together, these hypotheses scored 48% of the total marks in the first round of ‘Delphi’ expert polling. They also came through strongly in the customer interviews.

Support is found for other hypotheses: minimum contract periods and the requirements for credit check for billed mobile phone services may make some customers unwilling or unable to choose billed mobile phone services. Similarly, in some markets prepaid mobile phone services can be purchased anonymously – and certain market segments are shown to choose prepaid because of this. Call charges are often higher for prepaid mobile phone services than for their billed equivalents – but the usual absence of rental charges means that in these markets, lower users are often better off with prepaid. However, evidence was found for the reverse - of consumers consciously paying a premium (higher overall charges) to choose prepaid.

This study has suggested that there are a number of needs of mobile phone services which are better served by prepaid services than by postpaid. Each consumer has an individual set of needs, and no two prepaid mobile phone service customers are identical. Therefore, different individuals will choose prepaid for different combinations of reasons. The predominant reasons for choosing prepaid will also vary between markets. Factors fundamental to the nature of prepaid mobile phone services are identified separately from those (such as anonymity) which occur in some markets but not in others.

Despite the continued success of prepaid mobile phone services since the start of this piece of research, repeated searches of industry and academic literature have revealed no evidence of academic inquiry into prepaid mobile phone services.

In such an exploratory study as this, the scope of the literature review must of necessity be very wide and speculative, as relevant material can come from

hitherto unidentified sources. The intertextuality resulting from this wide scope has been of benefit. For example, the historical enquiry showed that the field of pre- or post- payment for goods or services is under-researched. The economics construct of ‘negative discounting’ (Loewenstein, 1987) gained significant support, and the psychological constructs around trust may merit further research.

The limitations of the use of ‘Delphi’ expert polling techniques have been shown through triangulation with the user interviews: although a wealth of data was collected from respondents, the process is subject to a number of criticisms already described. In particular, it has been shown that the ‘experts’ on whom the study depended showed relatively little expertise in the subject matter. There was no evidence of serious enquiry into the reasons for the success of prepaid mobile, despite its evident strangeness and despite its importance to the profitability of many of the organisations to whom the respondents belonged. This is contrary to the expectations set when the survey was designed and is perhaps surprising as the ‘Delphi’ respondents are a sample of the group which might reasonably be expected to be the most knowledgeable group on the subject of prepaid mobile on the planet.

The user interviews were perhaps most promising: despite the small number of interviews, the unstructured nature of them meant that the consumer’s perception was recorded clearly, and new themes identified.

The methodologically pluralist approach adopted here allowed triangulation between data collected from different sources, using different methodologies. This strengthens the reliability of the sources and allows the results from each methodology to be tested against those of the other, thus strengthening the internal validity. The external validity is another matter: subscription services where the consumer can opt to prepay are uncommon. Electricity meters and book or health clubs may be related – but in the case of electricity, it is not a discretionary item for most, and for health and book clubs pre-payment (buy a book in a bookshop or visit the local swimming baths) is the traditional form of transaction. Findings may have some validity for the TV broadcasting industry: cable / satellite TV is currently subscription-only – perhaps it would reach new

markets as 'pay-as-you-watch' TV. They may also have some validity for internet services, where pay-as-you-use access (pay for access via the cost of the phone call) is achieving great success in supplanting subscription-based internet access.

This study has succeeded in exploring the phenomenon of the success of prepaid mobile phone services and in identifying and testing potential hypotheses that provide explanations. Finally, there are two new potential hypotheses that may serve to explain in part the success of prepaid mobile phone services.

Two new hypotheses

The first hypothesis postulates a link between a customer's mobile phone service meeting different types of customer needs and that customer's choice of prepaid service over traditional mobile phone service. The different needs for mobile phone service may be related to the degree to which the consumer's need for a mobile phone is based on the one hand on a functional need to make or receive calls, or on the other, on the need to have a mobile for other reasons (security, symbolic need, for emergencies, to be handy). It contrasts the rational need with a more emotional one. Put another way, it is the degree to which the calls that the potential purchaser anticipates making or receiving have a value to the customer. One could contrast a plumber who uses the phone to run a business with a bank teller who uses the mobile phone the same amount, but for social calls. The plumber would never give the phone up, as it is an essential tool of the business. The bank teller might on the other hand cut back on usage or give up the phone altogether. This may be described as the difference between needing to make or receive calls, and the need to have a mobile.

Perhaps, compared to our plumber who buys mobile phone service in order to do business more efficiently, the purchase of mobile phone service by such as the interviewees is a higher-involvement purchase and that in itself reflects the different priorities of prepaid customers. Because the decision by these people is less on a cognitive, functional, cost/benefit basis, perhaps the risk associated with billed mobile phone services (going over budget, finding the phone does not

fit with lifestyle...) are great enough to delay indefinitely purchase of traditional mobile phone service. Enter prepaid mobile, and the risk is acceptable.

This hypothesis finds some support in the 'Delphi' exercise: one respondent suggested that where a mobile phone is purchased for image reasons, then prepaid is more appropriate. The respondent did not give a rationale. The interviewees' comments on how they use their mobile phones also offer some support to this hypothesis: none of these prepaid mobile users has the phone in order to make or receive specific calls. Their needs are more around having a mobile 'in case I need it'. The symbolic element of owning a mobile phone came out strongly from the interviewees also, suggesting that this is not simply a tool to do a job, but is valued for the status it confers. A control group of postpaid customer interviewees would help test this hypothesis.

The second new hypothesis suggests that through its adoption by certain market segments, the mobile phone may have acquired a negative image in the mind of the late majority (the image of the yuppie braying into his mobile phone on the train comes to mind). Perhaps prepaid services render mobile phone service sufficiently different to allow the late majority to overcome the negative image of the product, and to begin adopting it.

The diffusion model developed by Rogers (see for example Cox and Spickett-Jones, 1999) implies that it is only a matter of time before the majority adopt the product. However, in the case of mobile phones, its very success in certain market segments, weak cultural norms around acceptable usage and the very visible and symbolic nature of the product's usage by earlier adopters have given rise to negative perceptions on the part of non-users. Xenikou (1997)'s finding that:

The stereotypes associated with the adopters of a new technology influence consumers' desire to identify with these groups

may translate into active rejection (Cox and Spickett-Jones, 1999) of the product. Prepaid has reinvented the product to make it acceptable to the majority who had built up a cultural resistance to the original product. There is some

supporting evidence from the interviews that some customers of prepaid services see themselves as quite different to traditional postpaid mobile phone users – they would not even consider (emotional rather than cognitive response) taking out a postpaid mobile subscription.

Interview data provides some support for this hypothesis. Some interviewees also suggest some unease around admitting the symbolic value ('I *like* to think I have a mobile phone') of the mobile – perhaps this discomfort may be due to adopting previously despised values.

Rogers' model (in Cox and Spickett-Jones, 1999) is not compatible with this type of diffusion and a new model is required. Burns and Krampf (1992) find that uniqueness - seeking or sensation – seeking behaviour can explain adoption of some new products: perhaps this uniqueness - seeking behaviour in early adopters may deter later adopters. If these early adopters are technophiles, then perhaps Moston's 1996 findings that many later adopters are fearful or cynical about new technology may also be relevant. Perhaps the Product Life Cycle concept (see for example Wilson *et al*, 1992) is also inappropriate: a product relaunch seems to have been necessary to propel the product towards maturity.

If the phenomenon of prepaid mobile phone gift-givers as 'surrogate buyers' suggested in the literature review is substantiated, perhaps these individuals perform an important rôle in diffusing the product from the earlier adopters to the otherwise resistant later adopters. Further research is clearly needed to investigate these hypotheses.

Further research

It may be possible to further evaluate the relevance of some of the original hypotheses developed following the literature review and tested in this research by specific activities that address individual hypotheses:

- Prepaid mobile phone service customers who would fail the credit checks *but who would otherwise have chosen the postpaid mobile phone option* could be identified. For example, it might be possible to run credit checks on an

operator's prepaid customer base in order to see how many would fail credit checks. However, another research methodology would be required to identify which of these customers would have chosen postpaid mobile phone services had they been able to.

- Prepaid mobile phone service customers who require anonymity *but who would otherwise have chosen the postpaid mobile phone option* might likewise be identified.
- Customers who choose prepaid mobile phone service despite it not being the lowest cost option for them would be identified, by examining customers' call records to identify those for whom prepaid service is not the cheapest option. They could then be made aware that they could save money by moving to postpaid service, and the results monitored. The motives of those who choose to stay with prepaid could be identified via depth interviews.
- If a mobile phone operator were to launch a feature that offered customers a credit limit on post-paid service (once £x had been spent in a given month, the customer was notified and / or outgoing service be suspended), then it would be possible to measure the popularity of this and thereby determine whether the requirement to know how much was being spent (in order to budget) was important, and to whom.
- It might be instructive to study attitudes to credit and debt across prepaid and postpaid mobile phone customers.

Either of the two new hypotheses could form the basis of new research. The hypothesised link between symbolic needs for mobile phones and choice of prepaid mobile might be tested following the methodology used by Bhat and Reddy in their 1998 paper 'Symbolic and functional positioning of brands'. The hypothesis that prepaid can rehabilitate mobile phones in the eyes of later adopters (early or late majority) might be explored via protocol analysis, carried around the point of purchase (Easterby-Smith *et al*, 1991). However, because this analysis focuses on the point of purchase, no data would be gathered on the important subset of the market who ask for and receive prepaid phones as gifts. Depth interviews with donors and recipients of prepaid mobile phones could be substituted.

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Appendix 1 – 'Delphi' expert polling questionnaires

Round one questionnaire

Dear X

I am researching an MA (marketing) thesis on the reasons for the great takeup of prepaid mobile services. (Prepaid mobile phone service is defined simply as where the customer pays in advance for all calls, and does not receive a bill.) A review of the literature has suggested a number of hypotheses, and I am interested in your views on which hypotheses best explain the phenomenon.

If you could take a few minutes to complete this short questionnaire, I would be most grateful. Finally, if you would like to forward this on to relevant colleagues in academia, I would be very keen to hear from them too. Individual responses will be kept confidential, and all respondents will receive a report of the survey results.

Thanks very much

Simon Rees (srees@eircell.ie - phone +353-87-240-5999, fax: +353-87-201-5999)

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WHAT TO DO:

Please read the following hypotheses and then show how much each one explains (in your view) the success of pre-paid mobile telephony by allocating a total of 100% between them -

e.g. Price 30% + dreading bills 25% + trust 45% = 100%. Please use the form at the bottom of the page. Finally, please explain your rationale.

Prepaid mobile - reasons for take-up.

A. TRUST.

Customers fear being overcharged or being given poor service by mobile phone companies, and therefore won't commit to a long-term relationship with a party they don't trust. Because prepay typically does not require a minimum contract period, untrusting customers would not buy post-paid mobile services but do accept prepay.

B. BUDGETING FOR MOBILE.

Consumers allocate specific budgets to large items of expenditure in order to control their spending. The size of a mobile phone bill cannot be easily estimated or controlled, so traditional post-paid mobile does not facilitate budgeting, whereas prepay does allow consumers to keep control of their spend on calls.

C. ANONYMITY.

Many pre-paid mobile offerings do not require the customer to give his/her name and address. This is important to consumers.

D. DISCRETIONARY SPENDING - FLEXIBILITY.

For consumers, mobile phone service is non-essential (discretionary) spending. Consumers must be able to reduce or stop spending on discretionary expenses when necessary. With payment in advance and no bill, prepay allows customers this flexibility.

E. DREADING BILLS.

Consumers prefer to pay in advance for mobile phone calls because this allows them to avoid the unpleasant experience of dreading the bill.

F. CONSUMER INFORMATION REQUIREMENTS AND NONCOMPARABLE PURCHASES.

With its commitment to future costs, purchase of post-paid mobile phone service falls in the category of high-involvement, using complex decision-making processes – and the consumer must collect much information before purchase. For consumers, a purchase of mobile phone service competes with purchases of other noncomparable goods or services such as a CD player or a weekend break. If the information

required to make the mobile phone purchase is less available than that for the other goods / services, the consumer will tend to spend on the other goods / services. A purchase of prepaid mobile is less complex, requiring less information, and so overcomes this barrier to purchase.

G. COSTS.

Prepaid services are cheaper overall for some users. Customers choose prepay because it offers the lowest overall costs for their usage pattern.

THE QUESTION - PART A:

Please allocate marks to each hypothesis so that they sum to 100% to show to what extent in your opinion each hypothesis (if any) explains the success of prepaid mobile services, e.g. Price 30% + dreading bills 25% + trust 45% = 100%. Please explain your rationale.

A. Trust:%

B. Budgeting for mobile:%

C. Anonymity:%

D. Discretionary spending - flexibility: %

E. Dreading bills: %

F. Consumer information requirements and noncomparable purchases: %

G. Price: %

H. Other hypotheses (please give details): %

Please check that your scores sum to 100%

PART B:

Please explain your rationale...

Thankyou very much.

Please return your reply by e-mail or fax to Simon Rees (srees@eircell.ie - phone +353-87-240-5999, fax: +353-87-201-5999). If this email was forwarded on to you, please state:

Your name:....

Your organisation:....

Your fax no. if you wish to receive a copy of the survey report by fax:....

If you have any queries, please get in touch.

Round two questionnaire

Dear X

Thank you for responding to my e-mail questionnaire on the reasons for the success of prepaid mobile services. I attach the promised report on the survey results - it is in MS-Word format. If you don't have an application that can read the document, please let me know & I will send it in another format, or fax or post (in colour) a copy to you.

I would be keen to know what you think of these results. There is a short questionnaire at the bottom of this email. If you could spare a few minutes, I would be keen to hear your views on my findings. Once again, all respondents will receive a (final) report of the survey results.

Thanks very much

Simon Rees

The questionnaire

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Part 1: In the light of the results above, please show to what extent (in your opinion) each hypothesis explains the success of pre-paid mobile telephony, by allocating a total of 100% between them -

e.g. Price 30% + dreading bills 25% + trust 45% = 100%.

A: Trust.....

B: Budgeting for mobile

C: Anonymity

D: Discretionary spending - flexibility.....

E: Dreading bills

F: consumer info reqts & noncomparable purchases....

G: Costs / price

No credit check

No term contract.....

Branding.....

Other hypothesis (please explain).....

Please check that your scores add up to 100.

Part 2: please add any further explanation you feel may be relevant .

Please return your reply by e-mail or fax to Simon Rees (srees@eircell.ie - phone +353-87-240-5999, fax: +353-87-201-5999). If this email was forwarded on to you, please state:

Your name:....

Your organisation:;....

Your fax no. if you wish to receive a copy of the survey report by fax:

Appendix 2: 'Delphi' response data.

Round one scores

Name	D: Discretionary spending - flexibility	G: Costs / price	F: Consumer info reqts & noncomparable purchases	B: Budgeting for mobile	E: Dreading bills	A: Trust	C: Anonymity	Unprompted hypotheses (various)	Branding	No credit check	Trend / fashion	Differentiated services	Customer service	Operator sales / marketing effort	Preferred way of business	Cost containment	Security	No minimum contract	Low commitment - symbolic purchase	Appropriate for seasonal use	Simplicity of offer	Total check	Mentions	Unprompted?
AS	20	50	10				20	0													100	4	0	
RAS	30	30		30	10		0	0													100	4	0	
KK	20	50	10		0		15	5							m		5				100	6	2	
CB	20	0	10	20	10	5	30	30			30										100	7	1	
BG	50			20	20	10	0	0													100	4	0	
VK	2	1	2	30	10	50	5	0		m								m			100	9	2	
CH	40	30	10	10	10	0	0	0													100	5	0	
NC	20	20	20	20	20	0	0	0											m		100	6	1	
CS	5	0	5	20	60	5	5	0													100	6	0	
MH	17	20	25	13	10	9	6	0													100	7	0	
JAS	10	30	30	5	0	5	15	15					15								100	7	1	
JP	10	40	5	20	5	0	5	15		15								m			100	8	2	
AS	70	0	5	0	25	0	0	0													100	3	0	
AF	20	25	5	25	15	5	5	0													100	7	0	
VBI	20	20	15	20	20	0	5	0													100	6	0	
OG	37	10	21	9	17	4	2	0													100	7	0	
JC	50		30			20		0													100	3	0	
SK	10	5	40	10	5	0	10	20		20											100	7	1	
MM		10					90	40					20	15	10	5				m	100	7	6	
CF	30	5	20	20	15	5	5	0													100	7	0	
MK	20	30	30	10	10		0	0													100	5	0	
VV	10	10	30	20	10	10	10	0													100	7	0	
DL	0	0	30	20	20	20	10	0													100	5	0	
BB	10	35	0	20	15	0	20	0													100	5	0	
Average values, total responses	21.7	17.5	14.7	14.3	12.8	6.2	5.5	7.3	1.7	1.5	1.3	0.8	0.6	0.6	0.4	0.2	0.2	0.0	0.0	0.0	24.0	142		

