Configuring the Mobile User: Sociological and Industry Views

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Abstract: This article considers the role of the consumer in the diffusion of mobile telecommunications technologies. There is presently little research on the consumption and use of mobile technologies, and the aim of the present paper is to facilitate discussion about the way consumer behaviour is currently understood in industry and academia. The paper considers key themes in social science research on mobile ICTs, and understandings of the consumer held by those in the mobile industry. Bringing these understandings together, we reiterate the now well attested view that the diffusion and consumption of mobile telephony and computing cannot be understood without investigating the contexts and processes of their use in everyday life.

Keywords: Consumer; Consumption; Mobile telecommunications; Telecommunications industry

1. Introduction

Mobile devices hold the potential to transform patterns of information consumption and communication in everyday life, but that potential is only realised through widespread consumer uptake of mobile technologies. The behaviour of the mobile consumer is therefore important in any understanding of the process of technological innovation and diffusion. Until recently, however, there has been little social science research on the consumption and use of mobile technologies; and it is only recently that industry — in particular the mobile network operators — has begun to broaden its views of the mobile consumer to include deeper understanding of users' behaviour. The purpose of this paper is to consider present understandings of the mobile consumer in both academia and industry, and to facilitate discussion about the scope and direction of future social research. We begin by reviewing existing social science research on mobile, telecommunications and computing technologies, and consider the key themes that have emerged from research on the consumption of these devices. We go on to consider the understandings of the consumer held by those in the mobile operators industry. Bringing these understandings together, we reiterate the now well-attested view that the diffusion and consumption of mobile telephony and computing cannot be understood without investigating the contexts and processes of their use in everyday life.

2. Social Science Research

Like the fixed-line telephone networks that preceded them, the introduction of mobile telephony networks hold the potential to revolutionise many aspects of everyday life in the western world. The introduction of small and portable telecommunications devices, connected through cellular networks, has already changed the ways people organise their social relationships, both at work and at home [1]. The convergence of communications and computing in these same devices and the introduction of satellite-based services promise even more radical social changes. As Stewart and Williams [2, p 269] note, however, "... many existing visions of the future simply extrapolate from technological potential and suppliers' conception of how this could be deployed to meet social needs, ignoring the more profound uncertainties that surround the responses of users and their acceptance of these and emerging offerings". As yet, there has been little social scientific investigation of the role of mobile technologies and their users in everyday life: social research that examines who consumes mobile technologies, how, where and

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with whom, remains relatively marginal in the sociological enterprise.

In the social science literature that does exist on mobile telecommunications, the model or character of "the consumer" varies. A number of methodological and analytical strategies have been generated in response to the question "who is the mobile user?". Amongst them are statistical and demographic studies, social histories and social theory, as well as interview or observation-based qualitative studies in a number of different social arenas. These latter qualitative or theoretically based studies variously address the role of mobile telecommunications in relation to a range of social spaces and groups; they include studies that focus on aspects of work and leisure; use in public and private spaces; interactional studies of telephone conversations; and analyses of modernity, identity and consumption. Each of these strategies generates a different conceptualisation of "the mobile consumer" and the role and significance of mobile technologies in their lives and social worlds.

For example, there is a growing literature in the social sciences that traces the diffusion of mobile communications and computing throughout the population, both in the UK and in Europe (see, for example, [3,4]). These primarily comparative and statistical studies outline market penetration across the European Union and beyond, and utilise data and methods common to both academic researchers and various operators within the mobile telecommunications industry. In addition, demographic studies using, for example, census categories, are generated both by academic and market researchers (see, for example, [5]). Anderson et al.'s study [6], for example, found that like other ICT technologies, personal communication is an "elastic need", where differences in communications patterns closely correlated with class, income, product ownership and health and life prospects. In these studies, the characteristics of mobile consumers are demarcated through their membership of relatively large social groups, identified via demographic categories familiar in social statistics such as socio-economic status, gender and education levels. In this respect, they are representative of a range of similar research that has examined the diffusion of fixed line telecommunications (and other technologies) more widely.

Whereas these basic ownership and usage statistics have indicated that diffusion and ownership of mobile phones has generally followed a similar pattern to that of fixed-line phones [7], it is social histories that have explored why the consumption of telecommunications has occurred in certain ways [8,9,10]. The role of industry organisations in promoting the technology, for example, is one aspect of telecommunications markets that affects patterns of diffusion and consumption. As in the case of fixed-line telephony [9], the mobile telephone was initially assumed by its manufacturers to be primarily a business tool (attributable both by its costs and its functions), though industry initially overestimated these instrumental roles of mobiles [7]. Until recently, many users have still acquired their mobile phones through work roles, although acquisition through these means has not prevented its usage as an affective, community and social technology in contrast to its expected uses [9,10]. Recent exponential growth of consumer categories in mobile markets throughout Europe underlines the importance of the private and leisure uses of mobile telecommunications.

In social histories then, telecommunications consumers are characterised not only through demographic categories, but also through their relationship to the industries and institutions that comprise telecommunications markets. The relationship is described as one where industry organisations structure a market wherein individuals, in the context of the social groups and organisations of which they are a part, both consume in intended ways but also develop their own uses. Such uses are viewed as forms of resistance in the sociological literature, reflecting an assumption that there is a conflict of power between purveyors of mobile technology and end users (the same tension exists in other technologically-mediated arenas of social action). Key to these social histories is the fact that the consumer is an individual who appropriates telecommunications technologies in ways that fit with their membership of social groups, life stages and everyday activities of sociability.

While most of these social histories have provided a general historical context for examining contemporary mobile consumption, other studies focus on particular dynamics of use in specific contexts, the most pronounced being the workplace. Because of the early adoption of

mobile telecommunications by businesses, "the mobile consumer" in many social scientific studies is a manager or worker in an organisational setting. Some organisational and management studies have focussed on the changes to organisational structure that mobile technologies make possible – from changing tasks and job attributes, to changing relationships of authority, control and sociality within organisations [11] to the effects of mobile technology on the work/leisure divide itself [12]. In studies of work or professional life, the mobile consumer is characterised as an individual who uses mobile telecommunications in specific organisational settings and relationships. As we shall see, this is both complemented and challenged by industry conceptions of the mobile consumer where consumers are sometimes conceived not as individual users but as organisations themselves – though the meaning of this will become clearer.

Another focus of the literature is on the diffusion of mobile telecommunications into the personal lives of users. As mobile phones have diffused into private and leisure spheres, conceptions of the mobile consumer have changed. Like the case of the fixed line phone [9], social uses have grown wider as individuals appropriate the technology and integrate it into their everyday lives for private and leisure purposes. Diffusion into the domestic sphere in particular underlines the gendered uses of mobile communications and computing technologies [7; see also 13–15]. Qualitative studies have indicated that women are often bought mobile phones by their husbands for safety, for example, but soon begin to use them for tasks associated with their gendered roles in the private sphere – for caregiving, or for communicating with their children and other members of their extended families [7,16]. Rakow and Navarro [17] have discussed "remote mothering" and "the parallel shift" in just such a context with regard to differential acquisition and use of mobile phones by women. According to Ling [18, p 246], this is a response to changing patterns of everyday life where "... familial solidarity and continuity are an ongoing problem in the face of mobility, divorce, dual careers and the stress of daily life".

Mobile users then, become conceptualised as individuals who utilise technology strategically, for a number of different – but integrated – professional and personal purposes, in a number of different social environments and relationships. Because consumers' uses of the technology change with context, in some senses they are "several people in the one body". Studies of other technologies and their users indicate that this conceptualisation is not unique to the case of the mobile phone (see, for example, [19] on the case of the Sony Walkman). The process of consumption in the modern world means that individuals can take on a number of different identities as consumers, including those depicted in cultural representations of information and communication technologies. These representations link words and images that describe social relationships to the everyday life of consumers, and secure their consumption (however precarious). In this vein, a number of studies point to the symbolic aspects of the mobile phone, its role as a status symbol in different cultures, and the aspects of aesthetics and fashion associated with it as a cultural object (see [20,21]). Indeed, Frissen [7] claims that phones have gone from being household appliances to a highly personalised communications medium. The fashionable aspects of technological consumption are argued by some to be a peculiarly modern phenomenon. In modernity, or so the arguments go, consumption replaces other kinds of historical sociality. Individuals become more atomised with the social changes of modernity such as urbanism and the isolation of the nuclear family unit. The consumers of these technologies are therefore modern individuals, and to that extent are relatively atomised, displaced from families and communities in time and space [22]. Issues of consumption also point to the importance of economic factors in social life. Beyond factors of inclusion and exclusion in, for example, socio-economic categories, are questions of economic value and choice (on which we shall say more presently).

While research on patterns of diffusion can tell us who consumes them, and other qualitative and theoretical studies can indicate the subtlety and complexity of that consumer's changing identity, patterns of use are another question altogether. How, where and when individuals use their mobile devices is characterised more fully in the social science literature by (generally) qualitative studies which explicitly address modalities of interaction and communication.

According to Marshall McLuhan (1964), the telephone is an "irresistable intruder in time and space" (cited in [10, p 238]), although where

telephones might intrude and generate tensions, they also help users deal with the problems of time and space in new ways. Frissen [7], for instance, argues that mobile devices are "space adjusting technologies" that provide resources for understanding a sense of place and relationship in both professional [11, p 239] and private life. Furthermore, mobile technologies can be used not only to mobilise social space, but also to mobilise people, and to mobilise resources in everyday life.

In the context of work, the "adjustment" of space and time through technologies changes patterns of work such that "offices" become variously "mobile and extensible" [23], sites where interactions and encounters reorder and decentralise work and organisational relationships. Mobile telecommunications, for example, can be used to do "assembling work", to make a dispersed spatial and organisational world relatively predictable and to extend a person and their organisational role. Laurier's [23] study of mobile salespeople demonstrated how mobile communications allowed the appropriation of the client's fixed space, drawing it into the operational space of the organisation. More mundanely, this means that salespeople can contact their own organisations via mobile networks while they are physically located in the space of one of their clients. Such mundane and everyday reconfigurations of space in turn change how people manage the problem of time. Hill, Hawkins and Miller [24], for example, investigated the domestic effects of mobile telework. In a survey, the private contexts of mobile use for telework were examined, and teleworkers reported that the flexibility to be permanently available for work impacted on their personal and domestic life such that they had less time for their home and family.

The interactional properties of particular devices, and the changing communications they make possible, therefore change orientations users have to the practical management of time and distance and domestic activities. The domestic environment is one which has traditionally been understood as space for family, leisure and relaxation [25]. Studies of fixed-line telecommunications in these environments have underlined the ways that telecommunications are used to mobilise people as well as space. In Adler's study [26], the identities of interlocutors in domestic telecommunications were most likely to be family and friends (see also [10,16,17] for the gendered aspects of these communications). Indeed, in de Gourney et al.'s study [27], travelling professionals who wanted to contact their families or friends during their journey most often reverted to a fixed-line phone to do so, even when equipped with a mobile, as the fixed-line phone was most strongly associated with domestic space. In these spaces, individuals maintain affective and emotional contact with friends and family, organise the ways people and resources are brought together, and entertain themselves and others. If individuals can access emotional companionship without spatial limitations when mobile, they have even further opportunities to effect the development of what some have called "psychological neighbourhoods", rather than being bounded by communities that exist in particular space and copresence [10,26].

As Ling [28] points out, these boundaries of public and private worlds, the interactions considered appropriate to them, and the conventions of behaviour encouraged and proscribed within them, are considerably altered by mobile communications (though of course many prior and currently existing technologies such as letters do the same, albeit less effectively). On the one hand, mobile telecommunications work similarly to personal technologies such as the Sony Walkman, in that they privatise the public sphere, allowing individuals to "impose their own narrative" on public spaces [19] and emotionally transform the landscape or environment (particularly "resisting" or "escaping" the urban environment). Both individually and in concert therefore, people develop strategies to maintain or reconstruct boundaries of public and private space, as is demonstrated in Ling's [28] study of mobile telecommunications in restaurants. Ling [28] describes the assumption of "fictive curtains", for example, through which people divide public spaces that have been reconfigured through technology. Interactional strategies that present a version of self and maintain "face" in these public settings are required. They include such strategies as physically moving out of interactional space when a phone call is received, or acting as if a conversation cannot be overheard [29].

Just as mobile phones change the ways people interact in social environments, they also change the ways they communicate in the "telepresent"

space of telecommunications. Because mobile telecommunications are significantly "personal" technologies, attached to a particular body and person, they intensify the social "problems" presented by fixed-line communications that create simultaneous spaces of interaction with two different sets of people – those "copresent" and those "telepresent". Individuals must develop strategies for managing phone conversations that allow them to maintain both sets of relationships. This involves a negotiation of the relative power of the caller and callee in establishing rules of the conversation, as telecommunications can be used not only to maintain social relationships, but also to become temporarily disengaged from them. The rituals of negotiating identification, availability, and the purpose of the call can also change with mobile technologies and their social and technical difference from other telecommunications mediums. For example, whereas in fixed-line telecommunications call rituals conventionally included the question "how are you?", in mobile communications an emerging convention includes the question "where are you?" [30]. Similarly, whereas many studies have indicated that mobile phones are used extensively for business conversations for reasons of availability, participants in some studies have responded to the effect that "busines calls are too important to trust to a mobile phone", indicating the negotiation sometimes required to do "repair work" for the technology, or for the increased social contingencies/events when mobile.

In these studies, then, mobile phone users are primarily social actors who develop interaction and communication strategies for actively negotiating and managing their numerous identities and relationships through telecommunications. As Stewart and Williams [2, p 273] note, "...some of the most successful innovations in the ICT field have proved successful precisely because their development and provision created space for users to adapt the services to their particular needs", especially changing needs in changing times, places and circumstances. The self who is a mobile consumer changes with context in these studies, and changes as a result of interaction and negotiation with others in their environments.

Different consumer needs, identities and relationships are not only of concern to social science researchers, however. They are of common concern to research and information services within network operator organisations in the telecommunications industry, as well as organisations involved in the manufacture of telecommunications devices and the organisations that distribute devices and services. The kinds of information available to these organisations to understand the consumer are sometimes similar, at other times different to those available to social researchers. It is to these we now turn.

3. The Mobile Network Industry

The organisation of the mobile telecommunications industry is complex, consisting of device manufacturers, network operators, service providers and distribution channels. These parties interact in numerous and highly complex ways, and differ in the type and scope of information about the customer available to them. Similarly, various types of information are differentially available to diverse functional roles within these organisations, roles that have themselves evolved over the years. The result of this is that there are quite complex views on users, though all organisations agree that there is a need to supplement these views with more detailed understandings of user behaviour. In any event, utilising these views within organisations is subject to the complexities of organisational history, structure and culture.

We illustrate these issues here with reference to the mobile operators in the UK. These organisations initially created a division between business and consumer user categories. As the market evolved, these categories were further broken down into the type of tariff and service contracts the user held either as a business or consumer user. New technologies and service initiatives (such as the introduction of pre-pay talk plans in contrast to contracts of service) prompted further sub-categorisation, until the present time where the "user" now consists of a highly diverse array of perceived needs and interests. This diversity presents the mobile operators with the problem of best appropriating those needs to particular services and products.

To achieve this, the industry has over the years devised various ways to capture and generate information relating to "average user" behaviour either by business or consumer users. Not unlike the "academic perspective" a number

of methodological strategies have been generated in response to the question "who is the mobile user?". Amongst them are statistical and demographic studies, as well as interview-based qualitative studies in a number of different social contexts.

One means of "modelling" the customer is to consider them as economic "entities". This can be contrasted with the more obvious approach of treating them as economic "actors", about which we shall say something shortly. When conceived as entities, individual and collective customers are "abstracted" into large numerical and statistical categories, and analysed on the basis of their relative economic status and value. These categories tend to be relatively static, meaning that while the composition of the categories might change over time, the categories themselves do not. As a model that concentrates on economic factors, these understandings are concerned with value – both the value of the devices and services to the customer (pricing), and the value of the customer to the organisation. The purpose of this model is not only to establish current market parameters, but also to project future value, spending and price elasticity.

There are a number of sources of information of this kind distributed throughout operator organisations. The largest source of this material is information generated via network records for purposes of billing. Individual phone numbers on the network are monitored for calling activity – including the time, duration and cost and the numbers called. In addition, information is generated at the point of network connection and registration. This will include data on the mode of payment (i.e. contract or pre-paid), type of tariff (including business or consumer categories), point of sale and model of customer handset, as well as information on the distribution channel and service provider for that handset and account (where relevant). This "raw" data are subjected to a number of processes that convert the information into meaningful categories. These categories are then applied to decision-making processes. One example of this kind of activity is the creation of categories that differentiate customers on the basis of tariff (consumer or business), mode of payment (contract or pre-paid), and organisational value (membership of high service schemes or not). In this latter case, customers are hierarchically differentiated on the basis of their value, identified by numerical equations that express the difference between relative cost and revenue generated. This is represented in the following equation where Revenue (R) = Subscriber Acquisition Costs (SAC) ÷ Average Revenue Per Usage (ARPU) leading to the following: R = SAC ÷ ARPU. When the acronyms are replaced with numbers, the revenue generated by that customer acquires a numerically defined value, and can then be categorised as high or low revenue value.

In broad terms, such analysis has traditionally shown that business customers will use more of the services, and therefore spend more money. However, the business user will tend to use these services in peak times, forcing the operator to charge more and create more network. By contrast, the ordinary consumer uses less services and spends less money. They are, as a result, less demanding of the network and cost less to support because their usage behaviour is sporadic across time.

Other sources of information complement this understanding of both business and consumer customers as economic entities in operator organisations. An understanding of the economic value of business customers, for example, can be gained from the size and extent of that person's organisation, information that can be derived from market and industry reports. Similarly, general information about the economic status and value of consumer customers, such as socio-economic status or personal and household income can be derived from published statistics such as census and household statistics (differentiated on the basis of postcode), in-house and independent surveys, and published competitor statistics. This information identifies large economic groupings both within the market for mobile telecommunications and the markets for telecommunications more generally, as well as insight regarding the composition of markets for related consumer goods.

On the basis of this kind of information, mobile operators view the customer – whether business or consumer – as an economic entity that exists as an abstraction related to value. Because numbers tend to decontextualise consumer behaviour, creating as it were a "snapshot" of generalised economic activity from other areas of users' lives, the view produced tends to be static. That is, the customer's economic status

and activity are viewed as singular, and frozen in time. Nonetheless, such a view or model as we have been expressing is sometimes used to undertake scenario-based analysis, where this static model is used to project behaviour forward into future markets.

A second means of modelling the customers is to understand them as economic actors. In this view, individual status and activity are monitored on the basis of (usually rational) economic choices, and analysed with respect to the projection of future economic behaviour. This mode of understanding customers creates a relatively dynamic rather than static model: that is, decision-making behaviours and activities are interpreted over time. Like the previous model we have discussed, this also focuses on economic factors, and hence continues to be concerned with the revenue value of the customer and predicting their economic decision-making behaviours.

A significant source of information of this model – particularly for consumers rather than business users – is lifestyle purchasing and consumption information. This knowledge is derived from in-house marketing reports using focus groups, as well as independent telephone surveys seeking lifestyle and attitudinal information. Demographic and lifestage/lifestyle information provides data on the socio-economic status and economic/consumer context of the individual; attitudinal information provides data about preferences as regards tariffs and pricing regimes, as well as brand and consumer choice (in both mobiles and other consumer goods).

Other information on economic decision-making is gathered in customer services and support functions. Both corporate and consumer (contract and pre-paid) customer service/support functions within organisations provide ongoing services and respond to problems or queries. These events are described in recorded (written) "logs" of spoken conversations and email that are accessible via database software. Records are kept of the customer's attitudes towards quality of service vis-à-vis pricing, decisions to change tariffs or networks (through disconnection data on "churn" or "rotation"), and other attitudinal information is then analysed, though this tends to be carried out in a rather ad hoc manner at present.

An even more marginal form of information that is sometimes available is experiential evidence in the form of "ghost shopping" exercises. In this case, individuals simulate the experience of shopping for mobile phones, and evaluate their own experiences of negotiating their way through consumer marketplaces. While these exercises serve to establish empathy with processes of consumer choice and decision-making, it is unclear how that knowledge is employed institutionally. It appears that little formal information from this process is derived and disseminated, but that anecdotal evidence retains its place in the informal knowledge of the mobile organisations.

On this model the customer is understood as an economic actor who makes rational economic decisions when entering a relationship with an operator or service provider. The individual is conceived as "concrete" or personified because specific information is available about their discrete choices, decisions and attitudes. This renders information about them "dynamic": that is, it recognises change over time. The quantification of attitudinal and decision-making data, while allowing the construction of economic choice and attitude categories and the evaluation of current contexts and choices, offers insight into changing circumstances and motivations for economically-based decisions.

A third way of understanding the customer is to gather demographic information about social groups and to categorise them into market segments. This models the customer as a social "entity": that is, a collective customer identified via membership of large abstracted social groups on the basis of numerical and statistical analysis. As in the case of customers as economic entities, these categories tend to be relatively static over time. The models are based on broad socio-demographic categories from population surveys or census statistics (such as age, gender, socio-economic status, education levels, household composition, postcode information). In addition, market segmentation categories such as life stage, life cycle, family stage, consumer types are used. The purpose of generating this information is to establish current (and project future) market composition in mobile, telecommunications and consumer markets.

Information of this kind is derived from population and census data, and in-house and independent market surveys in mobile, telecommunications and consumer markets. These are compiled into database information and category

variables which can be analysed statistically on the basis of population percentages and market segmentation typologies of various sorts. Using this model the customer (consumer) is understood via their membership of collective social groups and market segments that have particular attributes and characteristics. Because the data is quantitative in nature it tends to be abstract, but is "relational" in the sense that it provides data across a number of social categories in relation to each other, and therefore provides a wider context for the analysis of behaviour and choice. It is related to questions of volume and value in organisations via contextual data (such as education levels and employment data) that supplement economic understandings.

The final model used to understand customers is to conceive of them as social "actors". In this model, an individual's characteristics and attitudes are monitored on the basis of lifestyle needs and consumer choices, and analysed with respect to both market segmentation and the projection of future behaviours. This model is also relatively dynamic in that customers' decision-making behaviours and activities are interpreted over time. These understandings are primarily concerned with identifying customer needs and problems, identifying customer attitudes, and with deriving projections of their needs, attitudes and behaviours over time.

Information of this type is primarily attitudinal, and is derived from lifestyle purchasing and consumer information. Both in-house and independent surveys and focus groups (as well as published consumer market information) generate data on attitude and choice with regard to pricing, brand, consumption habits and customer knowledge. Contextual attitudinal information provides data about attitudes towards specific products, services and brands, as well as providing attitudinal and contextual information with regard to telecommunications and consumer products and services more generally. Responses can be analysed to identify specific categories of consumer needs and choices, and correlated statistically with contextual social data.

More marginal forms of information generated are those that employ alternative methodologies to access information about issues such as use patterns, device usability and the social or symbolic meaning of mobile phones and services and brands attached to them. These are variously generated both in-house and independently. Use patterns are sometimes investigated via a process of "shadowing", particularly in the case of professionals and work practices. The usability of devices and users' problems with them are at times investigated in experimental methods (although these methods tend to be employed less than other research methods within organisations). Social and symbolic meanings are occasionally addressed via the use of "semiotic" studies – the investigation of how meaning is derived from words and images. Again, the use of these methods tends to be occasional, and the information derived tends not to be widely distributed. In this model the consumer is understood as a social actor or "agent" who has needs and wants, who has problems and makes decisions in the changing circumstances of their lives. The individual is personified or "concrete" because specific detailed information is available about their decisions and attitudes over time. Even though this information is relatively "dynamic", however, the quantification of attitudinal and decision-making data offers relatively little about how motivations, as well as attitudes, change over time and with context.

3.1. Comment

Utilising these data sources, the operators are now able to accumulate sizeable amounts of information relating to users. However, the comprehensiveness of this information, its content, nature and availability, when subject to demand, is often distributed unevenly across different departments within operator organisations. Sales departments, for example, often use network-billing information to the exclusion of other kinds of information when they want to identify customers of high economic value. Such analyses are used to target further services. In contrast, planning and strategy departments often use statistical reports of market penetration of their own and their competitors products to assess or characterise user behaviour. Marketing departments often have the most individual-level "user" data to hand (i.e. billing information), which they use to answer particular business questions or generate hypothetical propositions relating to customer activities. For instance, they will generate user profiles on the basis of information gathered on an individual user's use of the network in conjunction with geo-demographic data based on the postal areas used for billing. This allows the operators to

target and differentiate their products according to low and high-income areas. Though all three departmentally-driven approaches involve essentially numerical and economically-based analysis of user behaviour, the reasons for doing so are somewhat different.

The efficiency and effectiveness of any user modelling processes are dependent on the organisational circumstances of each particular operator and the nature of communication between departments within any operator. The flow of information is generally systematic but can fragment. Capturing information about the user is subject to the vagaries of organisational practicalities, changing priorities and time constraints. There are also gaps in the knowledge available. Some of the operators have carried out research into how people use their mobiles in everyday life, but it tends to be limited to use in business settings, or relies on self reporting or structured interviewing. To date there is little or no information on the use of mobile phones in private spaces such as domestic settings. Moreover, the operators have little or no information on how people interact with mobile devices. There is therefore little information on whether anomalies exist between the behavioural categories generated by the operators, and instances of actual use in non work-related settings. This has prompted the network operators to look towards more extensive fieldwork-based or contextual studies of everyday settings.

Even when observational research is contemplated, however, the operators' view of the market place and user behaviour continues to be founded on usage and behavioural information based on the billing process. This comes to be supplemented by approaches that treat the problems of understanding and predicting customer behaviours rather differently. Several tensions are created in this process. Direct observation of users' behaviour is not only difficult to gain insight from, but is also subject to chronic doubts about generalisability. Moreover, the weight placed upon such analyses – questions of generalisability aside – may well be susceptible to the differences in perspectives of the various departments already mentioned. Marketing departments may find direct observation more valuable in creating their models of users' perceptions than business strategy departments which might prefer to rely on the more robust and concrete billing information. So while there is increasingly comprehensive and complex information available to the operators, there are perceived gaps, and this is compounded by the fact that different branches of the operator organisations use information in rather different ways. The result of this is that there are quite complex views on users, though all organisations agree that there is a need to supplement these views with more detailed understandings of user behaviour.

4. Conclusion

Any discussion that juxtaposes academic and industrial perspectives on user behaviour will, needless to say, be subject to a host of criticism. Academic perspectives are presented and conveyed in vehicles that specifically allow (and indeed demand) thoroughness of exposition – the journal article – whereas industrial perspectives are presented in much more ad hoc and localised ways – in marketing plans, business strategy documents and so on. Superficial examinations would give the impression that the academic perspectives are therefore richer and deeper, but this would be to misunderstand the differences in question. The apparent thoroughness of academic research sometimes consists of completeness of argument, and not necessarily predictive power or empirical extensiveness. It is these latter measures that are, by contrast, applied to the industrial perspectives (wherever those perspectives are deployed).

Perhaps more importantly in industry though, the limits of time, the incompleteness of data, the differences in perspectives in departments (combined with the risks associated with making predictions) are problems that are not only recognised and articulated, but have to be dealt with in what can best be described as practical ways. Whatever information the industrial organisation has will be the resource upon which decisions are made: the organisation cannot wait until the complete set of data or the preferred method is devised. Business strategies have to be developed and deployed on the basis of what is available, as do tariff options, and the way they are developed, advertised and sold to the market place. For this very reason, it is likely that the billing-based information will continue to be the bedrock of operators' views: it is available and they have considerable expertise in its analysis. The fact that they know its limits

adds further weight to its utility for practical purposes, and does not diminish it.

These differences aside, however, there are a number of parallels and similarities between the two perspectives. Both are afflicted by a lack of extensive direct observational research on user behaviour. Though there is an increasing amount, especially in the academic literature, it is still best thought of as illustrative rather than comprehensive. Much of the research that there is – observational or otherwise – attempts to link patterns of usage to socio-demographics. A particular concern in both is to develop better understanding of how users perceive themselves – their own identity – and how this leads them to act. The academic literature recognises that these users have multiple identities and this leads to academic investigation of how users manage the conflict between them (i.e. mother–worker); the industrial organisations treat the different identities as thongs to support through more tailored settings.

And here it is perhaps that the major differences between the two perspectives exist. The academic research looks at mobile telecommunications users as social beings who, because of the numerous worlds in which they circulate, can experience discontinuities around the various and sometimes conflicting identities mobile telecommunciations are able to support. The mobile operators, by contrast, attempt to leverage business opportunities through fragmenting their offerings to satisfy the perceived needs of users. Whereas social science perspectives emphasise the difficulty of predicting the salience of different identities and practices at any particular time, the operators emphasise the importance of consumer choice at all times in the acquisition of mobile telecommunications. In so doing the operators hope that the likelihood that the user will choose to have a mobile phone as against not have one will be increased.

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