New Technology Briefing

The march of digital interactive TV and the emerging science of telegraphics

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Abstract

Programme viewing gives an accurate picture of the interests and aspirations of the viewing household. With the advent of digital television, viewers' programme-watching patterns can be tracked and analysed and the opportunity will be in place to build new targeting systems which go a stage further than today's geodemographic, lifestyle or psychographic tools. This paper examines the significance of the development of digital television in the world of marketing and direct marketing, and will discuss how the datasets can be combined to provide a new super-powerful targeting system, building on today's foundations, and applicable throughout the marketing mix.

Keywords: digital, interactive, television, targeting, consumer, profiling

Introduction

A most portentous event has just occurred at the time of writing this article. BSkyB has announced an offer to give away set-top boxes to new digital TV subscribers, a move which is costing the company some £315m and which has also necessitated a freeze on shareholder dividend payments for the foreseeable future. Its main rival, ONDigital, has launched a promotion offering free set-top boxes to subscribers who buy a £200 TV set. These initiatives, designed to remove financial hardware obstacles in the path of the potential digital TV audience, may well turn out to be the principle market opener for digital. In addition, interactive digital TV sets (which render the need for set-top boxes redundant and which make the new technology so interesting from a marketer's point of view) will be hitting the shops at Christmas. Predicted pricing for these digital sets was £800 back in 1998, is now £500, and will probably be revised several times in the next few months.

So it looks like digital TV and digital interactive are finally starting to get serious. These developments theoretically introduce a far wider range of content choice for the television-watching consumer, especially in the UK where the range of broadcast options has remained pitifully restricted when compared to the USA or even many continental European countries. This paucity of viewing choice in the UK will now inevitably change.

Whether quality of programming will be maintained across these new broadcast outlets remains to be seen, along with the question mark over what regular viewing figures the proliferation of new channels will

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Significance for advertising outlets

capture, not to mention the complexity of advertising rates versus market share/viewing that will be introduced. However, the fact that BSkyB has already passed the half a million mark, and expects a digital subscriber base of 1 million by November 1999, already puts an important audience at the marketer's disposal.

For the student, theorist and practitioner of target marketing, the advent of hugely increased choice is of some significance for new advertising outlets, as the last few years' usage of satellite-based home-shopping channels has shown. However, it is particularly the interactive television developments, backed by the interest and investment (and therefore the market might) of BSkyB, Carlton, Microsoft, and other powerful players, which make the situation really interesting for the direct response professional.

The obvious attraction of interactive television is the fact that viewers will react to certain advertisements, and that the network service provider can aggregate these data and thus contribute to our understanding of the changing patterns of consumer responsiveness and buying behaviour. Many have picked up on this point already. Yet few have identified what is possibly the more golden opportunity — namely, the ability to track viewing patterns.

The potential which these data (anonymised and aggregated, of course) could have for refining our target marketing systems is phenomenal. If properly organised and conducted, and as the interactive television becomes the household norm, segmentation systems based on these data could begin to rival the importance of UK Census and lifestyle-based target marketing.

In order to illustrate the true significance of interactive television for the target marketer, it is first necessary to review the background. Where does interactive television come from? Why are non-broadcaster giants like Microsoft interested in it? What are the limitations of today's target marketing techniques and segmentation systems? And why will the emerging generation of targeting systems dovetail neatly in with what has gone before?

Digital television — a definition

Digital television is an emerging method of television transmission. It is based upon similar concepts to those employed in mobile digital telephone networks. Digital television works by transmitting television signals as compressed digital data rather than analogue signals. Compressed digital data require smaller bandwidth than the equivalent analogue signal. This enables digital television to transmit a greater number of channels upon the same transmission frequency than current analogue television transmission methods.

Digital technology can be used to transmit television broadcasts by cable, satellite, or as digital terrestrial television (DTT). This is a key point as the main publicity focus for the technology has until recently been around DTT only. Traditional television broadcasts are based upon analogue signal radio transmission along specific frequencies. Digital television uses the same approach as digital telephony; microwave radio

Greater channel capacity

frequencies are used as a communications medium and the signal is transmitted as discrete blocks of digital information (data).

Using data compression technology, the discrete blocks of information can be compressed, freeing capacity along frequency channels. The use of compression and digital encoding means digital television can offer up to 200 different channels. In addition to greater channel capacity, digital television offers the opportunity to support additional technological developments, including support for higher resolution, wide-screen formats and electronic programme guides.

Of most interest to the target marketing professional, digital television delivered over cable or telephone can also provide support for interactive digital television — where the end user is involved in the programme content and broadcast loop. This point is critical. Without a link back to the service provider, digital television offers wider choice, but no means of direct feedback from the watcher. Nor does it offer a means of tracking each individual household's viewing patterns. In fact, digital television can be delivered through the normal TV aerial via DTT, but there must also be a hard-wired link between viewer and service provider for interactivity to be possible. Hence the importance of the imminent launch of interactive digital TV sets which also offer this feedback link.

Interactive TV and commercial interests

Computer companies seek to enter the television market

To access digital television services today, a set-top box or a new digital television receiver is required. In view of the similarity between digital television and the personal computer, the advent of digital TV has led computer companies such as Microsoft to make an entrée into television system design. (Microsoft's business market is fairly saturated and the company has both eyes on filling the domestic market.) Microsoft's moves are strongly resisted by traditional TV suppliers anxious for their market, but such is the Windows operating system's penetration into personal, small business, and now even major corporate computing, these moves are unlikely to fail.

On the other hand, Microsoft is unlikely to be the only interactive television system provider. The company has been slower in opening Internet-related markets than it perhaps should have been; witness the dominance of Netscape's Navigator Web browser, and Sun Microsystems' Java programming language for Internet applications. It is also worth noting that the cable companies in the UK are rumoured to be quietly adapting their systems to provide fast Internet access over their fibre-optic links. This exercise would hardly be worth doing just to address the tiny market which currently exists for Internet access via BT's ISDN or highway lines. On the other hand, if we are seeing the cable companies preparing to take a slice out of the interactive television pie, then their preparations would be much more understandable.

Standards

This has meant that digital TV broadcasters have been *de facto* obliged to establish a set of set-top technology standards. If one system/broadcaster

New opportunities made available

'locks out' viewers from another's broadcasts, then viewers will be antagonised and the whole idea of digital TV will fail commercially. So on 4 November 1997, the Digital Multiplex Group (which comprises all the main terrestrial broadcasters) announced their agreed specification for the decoder technology which allows viewers to receive 30 DTT channels through an ordinary television and rooftop aerial.

The UK is the first country in the world to implement DTT and the broadcast transmissions which started in 1998 are expected to replace analogue transmissions within ten years. In short, although multiple channels should mean that television offerings can be differentiated to meet the wishes of small segments of populations, this does not mean that there is a business model which enables the channel to be funded sufficiently to ensure a high-quality output.

If we take a positive angle on digital TV, we can say that it makes new opportunities available to content developers and television programmers. Digital television offers the potential for interactive electronic programme guides and additional information services. This latter point makes the potential of digital/interactive TV even more enticing for target marketers. In other words, the new medium is set to become a pipeline down which train timetables, telephone directories, local services information, and a host of other useful reference resources might be delivered. Again, usage of these services may be tracked (who requested what, and when), the data aggregated, and a better idea of each household's behavioural patterns established.

Interactive TV and target marketing

We have established, then, that digital television is likely to succeed, given that powerful local and global parties are investing heavily in the medium, and that relatively open standards are being established. Now it is necessary briefly to review the available targeting systems in the UK market, what they do and do not offer, and how data emerging from the interactive TV medium will radically develop targeting power in this country in the next decade.

Existing targeting systems — Census-based

Census-based segmentation

The UK Census remains the only comprehensive and even survey of every household in the country. It is still, and will always be, a critical foundation stone of any consumer targeting and analysis system. Aggregated postcode profiles derived from Census data describe that collection of households according to their predominant shared characteristics. The data on which those profiles are based are required by law and gathered for a non-commercial purpose. They are factual, not aspirational, and they cover key indicators as to the socio-economic position of the households in each area. As we approach the 2001 Census, some of the most powerful indicators which have never before been collected — income is the obvious example — are now likely to be included, making Census-based segmentation even more securely the fundament of any targeting or market analysis project.

Existing targeting systems - lifestyle

However, it is precisely because individual households' Census returns are anonymised, and only released for commercial purposes as aggregated area profiles, that the lifestyle list industry has arisen.

Lifestyle lists deliver individual information on single people living at a specific address. As usual, when lifestyle lists first started appearing an unproductive commercial rivalry took place between lifestyle list providers and Census-based targeting system providers. Not surprisingly, nobody won. Lifestyle lists have the benefit of being specific, but do not offer comprehensive coverage and tend to be over-mailed. Census-based systems do not offer the specificity of lifestyle. The winners were those who used Census-based modelling and cross-profiling to extend the power of lifestyle across the whole nation. In fact, this modelling of lifestyle attributes has now been done across all 44 million reachable UK adults by the major lifestyle companies themselves.

Even this combination of the respective strengths of Census and lifestyle data was not enough. It has recently become widely appreciated that even lifestyle lists reflect not what the consumer actually does, but rather what they would like to be doing. In other words, they indicate a consumer's aspirations rather than his or her actions. This is why large consumer businesses have invested in systems which start from their own transactional data (what people actually buy, when and how often), use lifestyle data (what people say they are interested in) to reach an initial set of prospects intuitively, and then use Census cross-profiling (the predominant characteristics of the areas people live in) to obtain targeted critical volumes across the whole UK population.

Finally, a third factor has recently swung into action — psychographics. Since the 1970s, the idea of a targeting system which reflected people's social values has been much desired. Such systems would allow, say, insurers to differentiate risk-averse conservatives from high-living show-offs, and then tailor both marketing messages and risk scoring systems accordingly. Until recently, such systems have never worked very effectively. Now, however, the depth, consistency and breadth of all main available datasets — geodemographic, lifestyle and psychographic — has reached the stage where robust models of psychographic profiles across the whole population have been built, and are already being seen to deliver the goods.

Psychographics

New data — new targeting possibilities

Now we can move to data arising from the new medium of interactive TV. Most of the press and pundit commentary on the subject of interactive TV so far has focused on data about those responding to advertisements. These data are important, but are only the lesser part of the picture. Besides, advertising response data remain the property of the advertiser, who will probably be most reluctant to allow those data to be used to build targeting systems which might benefit their competitors.

The most important data which the interactive TV broadcaster can monitor and use to build new targeting systems are information on what each household watches. It is the interactive link which makes this possible. Just as 'cookies' are used to measure people's individual

Viewing patterns

Literal indicators and profiles

patterns of website exploration, there is no technological reason why interactive TV operators cannot ask a household's set to transmit information on what is being watched at any given time. There may well be important data protection considerations around this activity, however. Households will need to be offered an opt-out option. Moreover, there are statistical considerations. The data gathered will not be even, and so cannot be used as an analytical base-line. Also, the information imparted by viewing patterns is to some extent limited in that the range of choice is limited to what is being broadcast. However, the increasing range of choice available with video on demand should quickly dissipate this hurdle.

If we look on the positive side, these viewing data offer properties which no other available dataset can provide. The data are factual, in that they are a real record of the household's interests as reflected by their viewing patterns. They provide both intuitive indicators (regular watchers of gardening programmes are good targets for a seed catalogue operation) and the foundations of a deeper psychographic picture of the viewers (the combinations of programmes which people watch are good indicators of their aspirations, and attitudes). It is interesting how the psychographic system providers often describe their different social value groups in terms of the TV programmes they favour. The descriptive power of these data is therefore of quite staggering significance for the marketing professional.

For a good parallel which indicates the two ways interactive viewing data can be used, we can glance at the lifestyle data industry. The main lifestyle surveys gather pieces of targeted marketing information — 'do you go to the cinema frequently?', 'when is your household insurance due for renewal?'. These data are obviously used by cinema chains and general insurers respectively, and are akin to the example above of targeting seed catalogues at those who watch gardening programmes. However, lifestyle companies also offer profiling services, where the various key attributes of a marketer's target customers are elicited. In this type of usage, the significance of gardening enthusiasm will not just be for seed marketers, but will also prove a significant indicator of apparently unrelated profiles. For instance, gardening enthusiasm might turn out to be a major distinguishing factor in the profile of those likely to be interested in autumn golfing holidays in the Algarve.

Potential limitations

However, we must recognise some further limitations on the viewing information. The data may never be entirely comprehensive (as is the Census). Some households will remain without a television, others will stick to analogue TV even when digital TV has become much more the norm. Also, the data do not deliver specific expressions of interest in a particular type of product, or information on product renewal dates (as do lifestyle data). They reflect the viewing patterns of a household, not an individual. Moreover, the data protection legislation mentioned earlier will (quite rightly) demand that the interactive digital network service provider should not commercially release information on any individual household, but should take the postcode profile approach which has long been the norm in Census profiling.

**The data
processing task**

Combining datasets

The most important point is that interactive household viewing data are geographically referenced. They refer to a specific television, in a specific household, at a specific address. This means that, by using postcodes as the matching key, viewing data can be combined with lifestyle, Census and transactional data. This effectively allows us to go through a transition period, while interactive TV penetration remains relatively low, of taking the viewing data that can be captured and modelling it across the whole population by means of the datasets we currently have at our disposal. Nevertheless, it is worth stressing that the early viewer profiles which will become available are necessarily those of 'early adopter' type people. There are sound commercial reasons for analysing these people, as many vendors are very interested in such data, but they will not offer a representative cut of the population as a whole.

Technical issues also present themselves. As noted before, there is no basic problem about capturing the viewing data — website managers have been using 'cookies' to do this on a widespread basis for some time. However, the data-processing task (which might be, say, monthly) is potentially enormous as interactive TV penetration really begins to bite. The cost of data processing is falling every year; the question is simply whether falling cost and rising need for capacity will reflect each other in inverse proportion.

It really depends on what level of analysis needs to be applied. The advent of sophisticated report-mining tools may offer the key to this economic question. Transactional information (which households watch what and when) can be held as raw-line data, and only analysed (or 'mined') as a commercial need arises. Moreover, dynamic response-modelling systems which can handle (economically) regular high-volume data updates are already coming on to the market — so that element of the data management and profiling infrastructure is already in place. There is also another possibility. If the commercial demand for analyses does not initially justify the enormity of the data-processing task, then we simply reduce the amount of data being processed. Households are selected on a representative sample basis, and analysis of the viewing output scaled up accordingly, preferably by modelling through a combination of Census and lifestyle-based systems.

Conclusion

In conclusion, interactive TV is going to become widespread. The speed at which it does so is currently uncertain, but there are too many vested interests now involved for the medium not to deliver its initial theoretical promise. Target marketing professionals should be getting extremely excited about the new datasets emerging from the medium, and the fact that they will work seamlessly with existing targeting systems, using postcode geography as the link. A gradual evolution of target marketing systems will take place as the volumes of available viewing and advertising response data builds. The ongoing result will be better targeting of all forms of direct response marketing, delivered by mail, by telephone, Internet, or through the TV itself.