

Alison Brady

Formulating Strategies for a Competitive Telecommunications Market

In constructing a market strategy, a telco needs to determine the sizing of the market it wishes to service. A balance must be achieved between the level of capacity and the reach of their various networks, matched to the predicted market demand for each of these networks. The decision for the telco to invest either through building its own networks or leasing from other operators, will depend on how the marketplace is changing. This in turn will be influenced by customer behaviour and how this will affect market trends. The investment decision will also be dependent upon whether the telco is an established operator or a new entrant.

This paper concentrates on the demand for residential services provided over fixed and mobile networks. In particular, the trend for some customers to disconnect from fixed networks and use mobile-only services for their telecommunications requirements will be explored. The implications for the balance that telcos need to achieve in the provision of their fixed and mobile networks are examined. An interactive model using system dynamics has been created to allow policy makers to explore different 'what-if' scenarios. Thus the implications of various proposed strategies can be investigated before a commitment to invest is made.

The model allows a holistic view of issues such as how the number of customers and usage will be affected by different tariffing structures. It also provides a method for determining the 'churn' of customers created by a competitor announcing a cut in call costs. A further benefit to a telco is that revenue per customer for the whole market can be calculated. Ultimately, a more in-depth understanding of the marketplace is developed, enabling the creation of network strategies that have a greater opportunity for successful revenue and profit generation, as well as attracting and retaining a large customer base.

Introduction

In today's fast-moving marketplaces, all companies need to achieve and maintain a strong competitive edge. This is irrespective of the types of products or services they provide. With an ever-increasing rate of change in today's telecommunica-

tions markets, this need is heightened. To achieve this, prices should be keenly priced with a low cost base and the highest possible return on investment.

The trend today is for companies to operate on an international scale. This means working in an arena where the working culture could range from being vastly or mildly different from that experienced in the potential incomer's 'home' market. Somehow an incoming operator, whether telecommunications or not, needs to be able to assess the market and decide where to position itself, its particular service offering with regard to

demand, competition and availability. Prices also need to be set with regard to those of the present local competitors. Expensive mistakes can be easily made in this environment.

As it is unlikely that all consumers will prove to be equally profitable, it is important to identify which sectors are most likely to purchase the services and which sectors of the consumer market are likely to be most profitable. It is important to identify whether price reductions will boost the uptake by a particular customer sector. If so, how small can this change be and still make a difference?

In particular, the telecommunications operator needs to understand the delicate balance between the costs incurred by the customer, the demand for services and churn. Residential customers are particularly sensitive to price, so varying the tariff structure is one very strong way of influencing customer demand. It can be used to grow or restrict a particular market according to a company's ability to service that market. However, it can be difficult to appreciate holistically how the changes to one market sector would affect another.

A generic systems dynamics modelling technique, using the PowerSim tool has been developed by BT. It assesses the dynamic effects of market size, customer propensity to change, tariffing and revenue generation in a competitive marketplace.

Understanding the Problem Space

The basis of this paper is to consider a fictional country of 10 million potential customers. The market has

Alison Brady:

BT Advanced Communications
Engineering
Adastral Park, Martlesham Heath,
Ipswich, IP5 3RE, England.
Tel: +44 1473 642758
Fax: +44 1473 620455
E-mail: alison.brady@bt.com

been split into different types of telephone user:

- *Fixed+mobile:* Users with fixed and mobile telephony are specified as definitely subscribing to fixed telephony. They may or may not also subscribe to mobile services and mobile telephony.
- *Mobile-only:* Users definitely have mobile telephony and do not have fixed telephony.

Initially, there is only an incumbent network provider who has an established fixed network and an established mobile network. The bulk of these customers use fixed lines for all communications from home, including all Internet requirements. This is partly due to cost and partly due to bad reception by the mobile receivers. So, it is altogether a more robust option to use the fixed line network for these calls. This is a growing market, with more and more of these customers going 'on-line' using the net for e-mail communications, shopping and surfing the Internet. The incumbent is satisfied that customers are happy with this, as it has deliberately made sure that its tariffing structure means that fixed calls are much cheaper than mobile ones. This reduces any demand to have its mobile network and/or handsets improved. The incumbent operator has also made a policy decision to make minimum investments in the mobile area. The fixed+mobile customers also have mobile telephone communication ability but this is very much for convenience when out and about, as the network and handset capability is more than ample for the demands of voice traffic.

Customers who have mobile-only communications tend to use the mobile telephone for convenience. The split of these customers between fixed+mobile and mobile is as shown in Figure 1.

This graph shows the tendency of the telephone population to switch away from mobile-only usage to using fixed+mobile for calls as their average call minutes per month rises. Consider as an example, if the population on average uses the telephone for just five minutes per month, then it would be forecast that 520 000 customers would use mobile-only and 480 000 customers would use fixed+mobile. Above 5 minutes per month average usage, more customers will use fixed+mobile compared to mobile-only. For exam-

ple, at 100 minutes average usage per month it would be anticipated that 280 000 customers would have mobile-only compared to 720 000 customers with fixed+mobile. The rise in minutes usage may be due to Internet traffic or voice, but it still creates a tendency to switch away from mobile-only. This may be due to the higher stability of the fixed network for Internet calls, the level of the fixed network bills for voice or a mixture of both. When the call is of a shorter nature, then the convenience of mobile still ensures it has a reasonable take-up.

We will consider a new telecommunications operator who wishes to expand its operations internationally into this country, challenging the position of the incumbent. We will assume that this operator can legitimately operate in this country.

Scenarios

Initial market strategy

The new operator is intending to build and install only a mobile-only network rather than incur the larger costs (in both time and money) from building and installing a fixed network. Much of its own commercial success in its home country has been due to the time and money spent in developing its own mobile network and hand-unit products to improve reception. It has also noted that the incumbent is reluctant to invest in this new technology and is keen to reuse much of the development that it has already acquired. The new operator believes commercial success here depends on a combination of being able to acquire some of the

incumbent's custom, both fixed and mobile, and being able to increase take up of mobile telephony overall.

Initially, the new operator decides to start up operations matching the incumbent's mobile tariff and relies on innovators moving across to try something new. It believes this strategy will allow a chance to gain a better understanding of the market with little risk.

Figure 2 shows the split of mobile customers between the new operator, (line 2), the incumbent, (line 3), and the sum of both of these customer bases, (line 1).

It can be seen that just by virtue of being a new operator in a previously stable market, a customer base of approximately one-fifth of the customers has been won over to the new mobile network. Assumptions made here are that there is a percentage of the customer base that is willing to trial a new product. It may be that, over time, these consumers will return to the original network operator's services, whether mobile, fixed or both.

The new network operator is therefore keen to try strategies to grow the mobile market and their share of it.

Active market strategy

The new operator is intending to compete directly on price. Mobile tariffs are going to be slashed across all market segments in an attempt to woo both mobile and fixed customers from the incumbent. It is confident that its strengths with regard to quality of service will attract and retain any Internet users who may be attracted on price rationale. This

Figure 1—Incumbent operator's market base

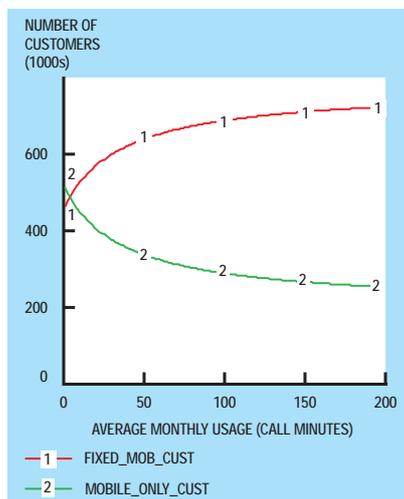
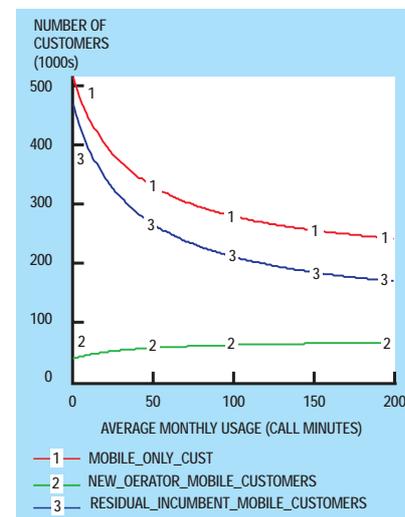


Figure 2—Initial market share for the incumbent and new operator



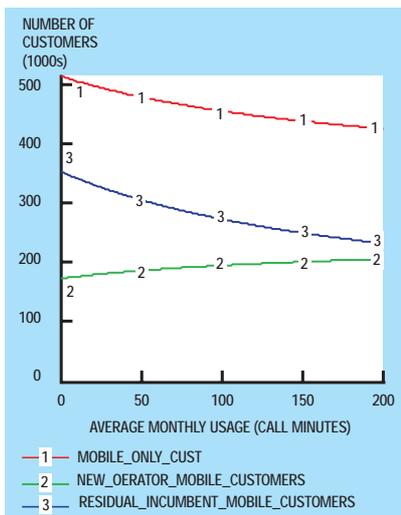


Figure 3—Market share for the incumbent and new operator during a price war

strategy is initially very successful as shown in Figure 3. This indicates the number of mobile-only customers that the incumbent and newcomer might expect to gain as a function of the average minutes usage for the population.

The previous overall mobile market levelled out at just below 300 000 customers (see Figures 1 and 2). These customers can be considered as mobile 'die-hards'. These are people who would use mobile no matter what the cost, whether for convenience, need, or image. Whereas the majority of the customer base switches to fixed once the particular average monthly usage rises above a certain point, these 'die-hards' do not.

Now, Figure 3 shows that in the price war, this market is levelling out around 450 000, an increase of 50%. These are people who have been influenced by the reduction in tariff to continue using mobile-only. This is a significant migration from fixed+mobile to mobile-only.

For lower call minutes per month, the incumbent's mobile network supports more customers but as the usage increases, people are attracted by the new operator's prices and move away from the incumbent. If we look in closer detail at users who use mobile telephone services for an average of 100 minutes a month we can see that the traditional operator manages to hold 100 000 more customers than the newcomer. But if this average monthly usage rises to 200 minutes, the customer bases for both level out to approximately half of the 'die-hard' figure of 450 000.

However, this is only an initial gain. The incumbent will try to retrieve these customers by a mixture of tariff reductions and fixed/mobile packages. The newcomer will need to exert some effort in retaining and growing their share of the market. One way of doing this would be to start identifying differing requirements for different sectors of the market and targeting each segment with particular packages: for example, cheap daytime Internet access for students and senior citizens.

Network Implications

Once we have gained an understanding of the average minutes usage of telephony by the customer base, the division of the market share between the incumbent's fixed and mobile networks and to the newcomer's mobile network can be calculated. Consequently, each operator will know how much demand will be placed on its networks. This enables calculation of network dimensioning, associated costs, anticipated revenues and ultimately anticipated profits.

Conclusions

We have demonstrated a technique that can be used to estimate the churn of customers created by the entry of new competitors, price cuts in the marketplace's tariff scheme. The effect of price on the take-up by particular market segments has also been examined. This technique can easily be extended to look at the particular nature of calls whether Internet or voice and any changes in quantities of calls. These and other 'what-if' scenarios can be created and the results interpreted as part of an overall assessment of strategy proposals.

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Biography



Alison Brady
British Telecommunications plc

Alison Brady received a B.Sc. (Hons) degree in Applied Physics and Solid State Electronics from Heriot Watt University in 1986. She has subsequently gained a Diploma from ACCA in Accounting and Finance and a Diploma in Management Studies from Henley Management College. Since joining BT in 1986, she has worked in a variety of activities including design and testing high-speed Gallium Arsenide optoelectronic receivers, requirements capture predominantly for Multimedia Services and process modelling work. She presently works in the Business Modelling Group which develops simulation techniques to model strategic business problems and provide general business analysis and support to BT.