Institution: *London Business School*.

Unit of Assessment: *C19 — Business and Management Studies*.

Title of case study:

Telstra Switching Study.

1. Summary of the impact

Telstra is an Australian telecommunications company. In the late 1990s, Telstra was faced by a new entrant, which would be competing against it with modern technology and a lower cost structure. Telstra needed to know how much share it would lose to undertake its resource planning. More importantly, Telstra also had to understand which customers it could retain and the actions it needed to take to retain them in terms of service design and delivery, pricing, and communications.

The underpinning research was conducted in conjunction with Telstra, and met their needs. This project generated published academic research output, and in parallel had a valuable impact on the client company. This impact was estimated, by Telstra, to exceed US$146 million.

In summary: *this study reports research that was prompted by the direct need of a potential beneficiary, and which successfully achieved a significant financial impact for that beneficiary.*

2. Underpinning research

The underpinning research project was led by John H. Roberts, Professor of Marketing at London Business School; he also holds a joint position at Australian National University. He held his LBS position when this work was conducted in the late 1990s and beyond; the subsequent research outputs were published over the 2000–13 period.

While scholars of marketing science knew much about fuelling the diffusion of new products, the obverse problem of an incumbent defending share against such intrusions had (at the time) attracted very little academic attention. New product research tends to either be static (with a focus on market share and the effect of design on it) or dynamic (looking primarily at category level effects, and usually implemented post launch). A key academic contribution of the relevant research outputs was to fill this gap, by modelling the defensive response to a new entrant.

Any modelling framework needs the ability to model market share as a function of consumers' perceptions of service attributes and prices. It also needs to include the dynamics of how share evolves as advertising, experience, and word of mouth spread information about the new entrant.

This research reported here developed a four-stage model with closed-form solution that was able to describe the adoption process by which consumers of the new service would make their purchasing decisions. The research was particularly innovative in developing methods to calibrate the associated response functions prior to the new product's launch. Flow levels were ascertained by information acceleration to estimate the choice-based conjoint elements of the methodology,

while flow rates were determined by combining analogy and self-stated decision times to calibrate the dynamic diffusion models.

Technically, a semi-Markov approach was used in which consumers are allowed to flow from one state of knowledge, preference, and behaviour to another. This provides a very flexible framework within which to address this management problem. The behavioural states may be specified to suit the marketplace phenomena. Flow levels between states may be modelled using discrete choice theory (in this case, logit models). Flow rates may be modelled using diffusion models (in this case, a Bass formulation). Moreover, not only are these two model subcomponents based on strongly grounded theory, they are tied together in a rigorous way and lend themselves to ready calibration prior to the launch of the new service.

3. References to the research

"Effective Marketing Science Applications: Insights from the ISMS-MSI Practice Prize Finalist Papers and Projects," Gary L. Lilien, John H. Roberts, and Venkatesh Shankar, *Marketing Science* 32(2), 2013, pp. 229–245. `dx.doi.org/10.1287/mksc.1120.0756`

"Defensive Marketing: How a Strong Incumbent Can Protect Its Position," John H. Roberts, *Harvard Business Review* 83(11), 2005, pp. 150–157.

"A Prelaunch Diffusion Model for Evaluating Market Defense Strategies," John H. Roberts, Charles J. Nelson, and Pamela D. Morrison, *Marketing Science* 24(1), 2005, pp. 150–164. `dx.doi.org/10.1287/mksc.1040.0086`

"Implementing A Prelaunch Diffusion Model for Evaluating Market Defense Strategies," John H. Roberts, Charles J. Nelson, and Pamela D. Morrison, *Marketing Science* 23(2), 2004, 186–191.

"Defending the Beachhead: Telstra vs. Optus," John H. Roberts, Charles J. Nelson, and Pamela D. Morrison, *Business Strategy Review* 12(1), 2001, 19–24.

"Defending the Domestic Long Distance Telecommunications Market: A Case in Defensive Marketing Strategy," John H. Roberts, Charles J. Nelson, and Pamela D. Morrison, in *Strategic Marketing for the Pacific Region*, edited by Bill Merrilees and Rhett Walker, McGraw Hill: Sydney.

Evidence of quality. *Marketing Science* is the leading marketing journal; *Harvard Business Review* is the leading practitioner-oriented journal for management. The research project is prize-winning. It won the American Marketing Association's Advanced Research Techniques Forum's Best Paper Award, as well as being a Finalist in the INFORMS Society for Marketing Science's John D. Little Award and its Marketing Science Practice Best Paper Award. The component papers have been republished in several books; for example in *New Directions in Corporate Strategy* and in *Marketing: People, Technology, Strategy, Sixth Edition*.
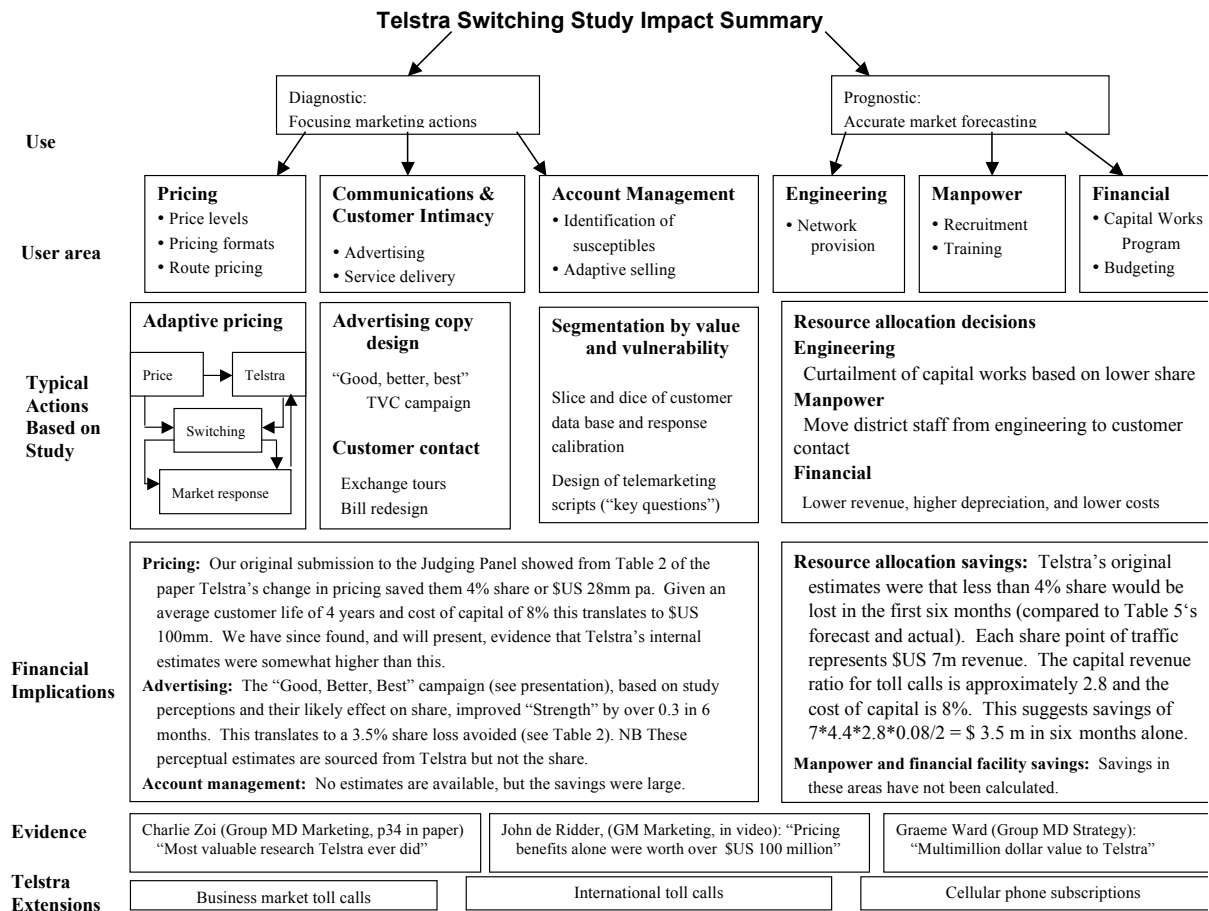
Telstra Switching Study Impact Summary

	Diagnostic: Focusing marketing actions			Prognostic: Accurate market forecasting		
Use						
User area	**Pricing** • Price levels • Pricing formats • Route pricing	**Communications & Customer Intimacy** • Advertising • Service delivery	**Account Management** • Identification of susceptibles • Adaptive selling	**Engineering** • Network provision	**Manpower** • Recruitment • Training	**Financial** • Capital Works Program • Budgeting
Typical Actions Based on Study	**Adaptive pricing** Price → Telstra Switching Market response	**Advertising copy design** "Good, better, best" TVC campaign **Customer contact** Exchange tours Bill redesign	**Segmentation by value and vulnerability** Slice and dice of customer data base and response calibration Design of telemarketing scripts ("key questions")	**Resource allocation decisions** **Engineering** Curtailment of capital works based on lower share **Manpower** Move district staff from engineering to customer contact **Financial** Lower revenue, higher depreciation, and lower costs		
Financial Implications	**Pricing:** Our original submission to the Judging Panel showed from Table 2 of the paper Telstra's change in pricing saved them 4% share or $US 28mm pa. Given an average customer life of 4 years and cost of capital of 8% this translates to $US 100mm. We have since found, and will present, evidence that Telstra's internal estimates were somewhat higher than this. **Advertising:** The "Good, Better, Best" campaign (see presentation), based on study perceptions and their likely effect on share, improved "Strength" by over 0.3 in 6 months. This translates to a 3.5% share loss avoided (see Table 2). NB These perceptual estimates are sourced from Telstra but not the share. **Account management:** No estimates are available, but the savings were large.			**Resource allocation savings:** Telstra's original estimates were that less than 4% share would be lost in the first six months (compared to Table 5's forecast and actual). Each share point of traffic represents $US 7m revenue. The capital revenue ratio for toll calls is approximately 2.8 and the cost of capital is 8%. This suggests savings of 7*4.4*2.8*0.08/2 = $ 3.5 m in six months alone. **Manpower and financial facility savings:** Savings in these areas have not been calculated.		
Evidence	Charlie Zoi (Group MD Marketing, p34 in paper) "Most valuable research Telstra ever did"	John de Ridder, (GM Marketing, in video): "Pricing benefits alone were worth over $US 100 million"		Graeme Ward (Group MD Strategy): "Multimillion dollar value to Telstra"		
Telstra Extensions	Business market toll calls	International toll calls		Cellular phone subscriptions		

FIGURE 1. Illustration of the Impact Process

4. Details of the impact

This research guided the defensive actions of the incumbent in the Australian telephone market, Telstra, when faced with an external challenger in the long distance domestic call market, Optus. The research led to both prognostic actions (planning manpower requirements, network dimensioning, and financial structuring) and diagnostic ones (guiding pricing, communications and advertising, and product and service provision). The results of the study were used from six months prior to the launch of Optus in 1998 through to 2005. The methodology was also applied to other markets of Telstra (including business long distance calls and mobile churn) and to other telecommunications carriers (SingTel before it owned Optus, Alberta Telecom, Mobicom in Mongolia, and others). It was also applied in other industries, including aviation and electricity.

In terms of industry impact, the study was both accurate and insightful. Somewhat embarrassingly, prognostically it forecast a loss of 8.8% share to Optus after eight months, compared to an actual loss of 8.8%. Diagnostically, it was able to re-direct communications away from to a more nuanced message about targeted improvements being implemented to continue and enhance Telstra's historic service record. Financially, the direct impact of the study was estimated by Telstra to be

over US$146 million, accruing from US$80m pricing benefits, US$63m benefits in more focused advertising, and US$3.5m savings in capital works adjustments.

Telstra also spoke of the soft benefits in terms of improved service capabilities and efficiencies. Adoption of the study's findings with the organization were ensured by extensive executive briefings, customised workshops for individual functional areas, a decision support aid usable in Excel, and a series of management and technical reports. As indicated in Figure 1, the study was extended to other Telstra markets and was still being used on an updated basis when the authors last had contact with Telstra in 2005. Finally, the approach has been used by several organizations around the world since its initial implementation.

5. Sources to corroborate the impact

The INFORMS (the Institute for Operations Research and Management Science) Society for Marketing Science Practice Prize recognises impact on industry practice of cutting edge marketing science techniques. The judging panel validated all proposals' claims by reference to materials supplied directly by the firms for whom the work was undertaken and other sources. The Chairman of Judges (Professor Gary Lilien who may be contacted at `g4l@psu.edu`) is able to detail the steps that they took. In addition, INFORMS produced a video presentation which is available at:

`http://techtv.mit.edu/collections/isms:1137/videos/7804-telstra`

This presentation includes interviews with three senior Telstra executives who speak of the impact that the work had on the organization and verify the above impact numbers: Anna Corluka (Market Research Manager), Gail Thomson (Group Manager, Market Analysis), and Phil Birley (Group Manager, Market Information). Other senior executives are quoted in the Marketing Science and Harvard Business Review articles, including Charlie Zoi, Group Managing Director, Marketing, who described it as the most valuable piece of research that the organization had ever undertaken.