TELECOMMUNICATIONS DEMAND: A RESEARCH AGENDA

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ABSTRACT

This paper reviews the session on demand at the Workshop on the Telecommunications and Information Activities in Camberra (July 1994). It makes recommendations on the direction of research based on the Workshop’s participants and on these commentators’ view. One of the challenges was to identify the contributions which various participants with varied backgrounds made and to find a common thread among them. An achievement of the Workshop has been to create elements of dialogue between a "traditional" school which recognized its limitation but was able to produce some estimates and a more "prospective" school which would raise new questions too often forgotten. (The paper will appear in Telecommunications and Information Activities: A Research Agenda, Donald Lamberton, ed. Elsevier, Amsterdam, forthcoming)

The telecommunications industry has changed dramatically in the last few years. Furthermore the pace of change appears to be consistently accelerating. At the same time, the boundaries which used to separate clearly identified and well defined sectors such as telephony, broadcasting, CATV, computing and a variety of wireless technologies have become more and more blurred when they have not lost all meaning.

The implications for demand and forecasting had been even more drastic. Today's analysis has to cope with questions which are orders of magnitude more complex than analysis of the past while benefiting from poor if not non-existent databases. In addition, new products and services confound analysis since they may be close substitutes for the existing services or require the existing services for their production. However, conventional demand measures such as price elasticities and cross-elasticities are much more critically important than in the past.

The Workshop made it possible to gain a better insight as to the elements which a framework for demand analysis should consider, even require, to address today's telecommunications environment. This outcome was primarily the result of two factors. Taylor's 1994 book on demand analysis provided a constructive structure around which to organize discussions. Then the diversity in the participants' backgrounds led to exploration of questions which are not generally considered.

We were able to identify new areas for research beyond those which had been named by Taylor.

- **Household Production Methodology** As we move to highly disaggregated cross-sectional data, the way to address the service definition and pricing problems will increasingly be through models derived from the general household production approach. Those models appear particularly well designed for an environment where there is a web of services, most varying from the others by relatively small features.
• **Endogeneity of the Household Production** The non-economists' vision tends to question the implicit assumption of separability between the consumer's utility function expressed in terms of attributes and the household production model expressed in terms of traded goods and services. For them, it is the wider context that this process must be understood if one is to hope to model demand.

• **Endogeneity of Demand** Neoclassical economics consider consumers whose tastes are invariant to the environment. In a world of rapid technological change and evolving boundaries, to consider taste invariant -- even at the level of the attributes -- is an assumption which appears to be hard to defend. In fact, demand and its formation is a direct input in the technological path as can be observed with the advance gained by GSM over TDMA and CDMA for instance.

• **Path-Dependency** The issue of path dependency does not arise except at the level of technology through which services offered -- The advance taken in the last three years by GSM, even at the research level, relative to CDMA and TDMA but also at the level of demand -- but also at the level of consumer tastes. Arguments can be developed which present the consumer utility function as path-dependent upon technological solutions.

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