

Chapter 63

Costs of Information Services and Information Systems: Their Implications for Investments, Pricing, and Market-Based Business Decisions

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ABSTRACT

The large number of cost terms in use regarding information services contributes to confusion in discussion and cost analysis. This confusion can largely be resolved by focusing on decisions rather than on products and cost terms. This decision focus is consistent with the proper application of total cost of ownership approaches and a real options perspective for evaluating managerial flexibility. Information services also tend to display public good-like characteristics. The non-rivalrous nature of production (i.e., low marginal cost of production) and the perishability of services have critical implications for investments and complex pricing. In addition, some information services and other Internet-based services, can display network effects, which also have important implications for managing the life cycle of the service. Finally, the implications of big data for information services are briefly considered.

INTRODUCTION AND BACKGROUND

Every rational economic decision should be based on a comparison of the present value of the stream of the costs of the decisions with the present value of the stream of the benefits of that same decision (often the benefits are changes in revenue streams). One then need only overlay an evaluation of the risks of the decision to be complete. However, the use of standard cost terminology and a lack of focus on the business decision can lead to errors in analysis and the business decisions being made.

This chapter begins with a discussion of the types of cost terminology that are sometimes used and how this terminology often leads to confusion. It continues with a way to solve the terminology confusion problem by focusing on each decision and the consequences of that decision. This decision-based perspective is consistent with Total Cost of Ownership (TOC) evaluations. It is also consistent with

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identifying sources of potentially sunk costs and methods of avoiding sunk costs using a real options perspective to search for sources of managerial flexibility.

A useful perspective is to recognize that information services and other internet-based services have public good-like characteristics. This has important implications for thinking about the costs of the services, and how best to price those services. Perishability and value decay over time are also important factors for pricing, and can be used to assist in price discrimination for information services sold outside the firm. Finally, the chapter finishes with a discussion of network effects and their implications for information services.

The objective of this chapter is to draw upon the economics literature to assess topics of importance to the non-economists working in information services. While the chapter invokes the technical literature in economics (and related disciplines), the chapter itself is designed to be completely accessible to anyone with an interest in information services and other internet-based services. While there are graphs and simple numerical examples, there is virtually no math, nor difficult mathematical notation.

COST TERMINOLOGY AND CONFUSION

Unfortunately, costs are often misunderstood, or misused, in a variety of industries and across departments within companies and government agencies. Often, classic cost terminology actually can lead to more confusion than clarification in a decision-action context.

Consider the following list of typical cost terms and cost phrases, listed in alphabetical order, but not intended to be exhaustive: accounting cost, activity based cost, administrative cost, average cost (often in combination with other terms such as average variable cost), avoidable cost, capacity cost, conversion cost, cost of debt, cost of equity, cost of goods sold, cost of money, cost overrun, differential cost, direct labor cost, explicit cost, external cost, feature cost, function cost, incremental cost, inventory cost, labor cost, life cycle cost, long-run cost (often in combination with other terms such as long-run average total cost), manufacturing cost, marginal cost, materials cost, minimum efficient cost (the cost at minimum efficient scale), non-manufacturing cost, non-period cost, opportunity cost, overhead costs, period costs, private cost, product cost, public cost, psychic cost, repugnancy cost, search cost, short-run cost (often in combination with other terms such as short-run marginal cost), social cost, standard cost, sunk cost, transactions cost, variable cost, and volume-sensitive cost.

This proliferation of cost terms may in part be due to a desire to have (or create) a cost term that is unique to a specific set of circumstances. However, on balance, I find the proliferation of cost terms, and some cost terminology in particular, leads to more confusion than clarification.

Standard Economic Terms and Confusion

Fixed vs. Variable or Marginal Costs

Most economic textbooks have the discussion of costs follow a chapter on production in which some inputs are described as fixed in the short run and some are described as variable. A classic definition of a fixed input is “when the quantities of plant and equipment cannot be altered” (Allen et al, 2013, p. 174). Fixed costs are then described as the costs associated with fixed inputs. This discussion generally

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