Chapter II

Optimal Purchase Decision Criteria for Information Technology

P. Pete Chong
University of Houston-Downtown, USA

Ta-Tao Chuang
Gonzaga University, USA

Ming Chang
University of Houston-Downtown, USA

Jason C. H. Chen
Gonzaga University, USA

ABSTRACT

With the amount of resources dedicated to information technology (IT) expenditure today, we need to have a systematic way for assessing the elusive benefit of all IT purchases. This chapter proposes a modified Factor Rating approach that separates the subjective benefit assessment from objective cost-benefit analysis. Using this method, we often discover that for most users, due to the advancement of computer technology, the cheapest computer may be the optimal computer in the market today.
INTRODUCTION

Knowing the importance of information technology (IT) to productivity, companies and individuals alike have invested heftily in technology, causing IT expenditures in the United States to grow phenomenally. In the fourth quarter of 1999 alone, in the US, PC makers shipped 12.6 million units (Hamilton, 2000). However, the annual comparison shows that the growth of Personal Computer (PC) sales has slowed down to only 19%. How were these purchasing decisions made? Even if the process is improved only marginally, the public can realize tremendous gains.

A few years ago, computer trade journals would invariably recommend that consumers purchase the latest technology (Kirkpatrick, 1998; O’Malley, 1999). Even though the state-of-the-art technology demanded a premium price over lesser choices, as a proportion to the cost of the entire system that difference was relatively small at that time. However, the tide has shifted since then. On one hand, hardware technology has advanced so much that consumers begin to realize that they may be buying too much product for what they really need, resulting in wasted resources. On the other hand, prices of hardware have fallen at an increasing rate over the years, which prompts trade journals to recommend delaying purchases for as long as possible. Manufacturers also recognize the need for targeting “general” users. Intel, for example, sees that most PC users do not care how fast their graphics cards are and proceeds to integrate 3D graphics to its 810E chip set instead of using the discrete 3-D chips that have better performance (Gwennap, 1999).

As an example of the premium price attached to “state-of-the-art” technology, Intel’s own testing shows that when it comes to running most office-type programs there is little performance difference between the Pentium II and III, but the newer chips command hundreds of dollars more (O’Malley, 1999). Thus, even during the times of pursuing the state-of-the-art technology, acquiring “middle-of-the-road” equipment has been one of the IT manager’s purchasing strategies. This approach is based on the reasoning that while at the highest end consumers have to pay dearly for that little additional benefit, at the low end products may not have the quality to meet the consumer needs. Frequently, 80% of the benefit can be achieved with the first 20% of spending in the price spectrum.

One of the difficulties in selecting a computer system is to wade through the sheer number of choices that are available in the market. Besides large PC manufacturers such as IBM, Dell, HP/Compaq, and Gateway, numerous small companies also have a strong presence to the public consumers. Since component technology has allowed PCs to be “assembled” rather than massively “manufactured” (Williams, 1997), each company uses a wide variety of components to assemble their products; and the permutations make product comparisons more
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