

# Common Sense Benchmarking of Information Technology

By Michael L. Kasavana

**Executive Briefing:** Technology can provide competitive advantage through product differentiation, unique services, cost reductions, and informed market segmentation. In addition, productivity is improved through gains in both data processing and workflow processing procedures. Together automation applications can be evaluated relative to enhanced profitability. Using these three 'common sense' benchmarks provides a beyond best practices approach to the evaluation of information technology.

 The inherent problems associated with technology implementation review revolve around the fact that the candidate application may not be a tangible product, but rather an intangible service. Similarly, outcomes are difficult to measure when the applied application fails to hit its intended target. It is for these reasons that a straightforward set of test criteria for post-implementation is desirable.

Three 'common sense' benchmarks for measuring the appropriateness of information technology (IT) applications are:

- a) competitive advantage;
- b) productivity improvement;
- c) profitability enhancement.

With such criteria the analytical focus shifts from a financial orientation to an operational perspective revolving around three simple questions: Has implementation of this IT application helped provide the firm a competitive advantage? Has it significantly improved staff productivity? Will it enhance profitability?

While not all IT applications are appropriate candidates for this simplistic benchmarking analysis, the complexities associated with the quantification of intangible factors are replaced with a sufficient basis for evaluating application success. In addition, this three-dimensional approach avoids many of the pitfalls that so often cloud or paralyze an intensive financial only analysis.

## Competitive Advantage

Can technology produce a competitive advantage?

The answer is a resounding yes!

Consider a company's website with self-service order entry capability, or a retail store's point-of-sale

system with frequent shopper reward software, or a local

Frequent shopper cards and wi-fi cybercafés are examples of technology helping to create a competitive advantage

eatery with a Wi-Fi cybercafe. Each application produces an outcome unparalleled by non-automated or semi-automated approaches and therefore a competitive advantage is created. Whether the established competitive advantage is sustainable is an additional concern.

The goal of competitive advantage is to cultivate customer loyalty while increasing purchase frequency. Technology can emphasize the impact of competitive advantage so that the list of criteria once perceived as the only industrial differentiators in the international business community (i.e., price and quality) are supplemented by innovative outcomes of the digital era (e.g., brand image, personalized services, and product customization).

Competitive advantage is typically established through one of four dimensions. The most obvious is product differentiation. Product differentiation is the art of applying technology to produce a product that is unique or customizable.

A second means for establishing competitive advantage is to use technology to generate unparalleled service (e.g., CRM -- customer relationship management). CRM is built on the proposition that knowledge of the customer is valuable to loyalty and revenue enrichment programs. CRM requires capturing interactions and analyzing past consumer behavior to predict or direct future behavior. Such factors as exceptional procurement services, extended warranties, bundled offerings, and personalization are rapidly reshaping the world of international business.

A third form of competitive advantage arises when a product can be produced at a lower cost than the competition. When technology is applied so that costs are reduced, margins are higher and selling prices are more easily controlled. A cost advantage is established when a substitutable product cannot be produced for the same low cost and therefore the seller gains a pricing advantage. Lower costs usually create a natural means to gain competitive advantage. Cost reductions are more

specifically addressed in the areas of productivity and profitability.

A fourth technique for establishing competitive advantage through technology is market segmentation. By employing technology to target specific market segments, a business is able to expand its reach while exceeding customer expectations. Most firms have moved into the customer service phase of competitive advantage, and are heading toward market segmentation in the form of product branding, which helps establish competitive advantage.

It is important to note that once a market leader establishes a competitive advantage the rest of the market will move quickly to catch up. It is for this reason that it is difficult to create a sustainable competitive advantage in the marketplace. This strengthens the case for technology's role in establishing marketplace advantages.

## Productivity Improvement

The second benchmark that can be used to test the effectiveness of information technology is productivity improvement. There are two aspects of productivity evaluation: data processing and workflow processing. From a data processing perspective there are three categories of metrics. The first is minimization of the time it takes to transform data from input (raw facts) to output (information). When the time of the traditional data processing cycle (I→P→O) is minimized, the firm is operating in a more efficient manner and technology should be credited for having made a positive difference. For example, the processing time required for aggregating one month's data under a legacy application, compared to processing the identical sample through the new application, will reflect the efficiencies of the newer application. If there is a gain, then improved productivity has been demonstrated.

Second, the optimization of data handling procedures must also be evaluated to determine improvement. The goal is to reduce the number of times the same piece of data must be handled. For example, capturing a customer's purchase order on a handheld tablet PC will lead to singular data capture and subsequent processing. This is illustrative of a significant gain that arises from efficient data capture, thereby omitting the need for additional data entry, subsequent data handling, or data re-handling procedures. Recognizing that each time data is processed there is a chance of transposition or omission errors, an effective application will minimize data handling procedures.

A third related category for data processing is streamlining output. Modifying reports so that only the

most relevant statistical and analytical information is presented first renders an application more productive. Report content needs to be in an efficient format to enable more effective managerial decision-making. From a workflow perspective, normal measurable outputs for productivity are the number of transactions per hour, process integration, resource scheduling, and inventory control. These remain important evaluative tools when determining an application's impact on productivity. If the adoption of an application allows staff to be more efficient, then this is a positive benchmark. One perspective is to analyze the workplace to determine measurable and auditable outcomes that may not appear obvious. For example, don't forget to investigate gains in expanded customer services, rapid access techniques, and data mining tools.

## Profitability Enhancement

Evaluating the impact technology has on bottom line profitability may be the most difficult of the three benchmarks to evaluate. Direct and/or indirect impacts on revenues and expenses may be quite complex. Nonetheless, this benchmark is critical for firms mindful of a return on investment. The main questions to ask are: Will the business benefit financially by adding the candidate application? Will there be net profit? Will revenues exceed expenses? Stated simply, this benchmark is designed to measure whether the benefits of an application outweigh its costs. If this is the case, then the application is a profit enhancement. ♦ [gBR Article 03-02](#), Copyright © 2009.

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