# Using quantitative analysis as an effective tool

Education, Sustainability

For most of business history, decision making was based on qualitative individual judgements that had only crude data behind them. Retailers decided what to stock based on " gut instinct" of a prospective buyer, not on the basis of vital models of consumer behavior. The increasing need for quality research, especially in the area of quantitative analysis, has forced many companies to employ managers and leaders with specific training in this field. The successful companies of today utilize quantitative analysis as a tool to find and solve many different problems.

These problems can be as diverse as: evaluating financial benefits, projecting future performance, and determining the savings or simplification of a process. Companies such as Coca Cola, Microsoft and Intel are the leaders in their respective fields because, they effectively utilize the tools at hand to make informed decisions. The key element of any " problem solving" method is to gather the information necess! ary to make an informed decision. Cooper & Schindler (1998) discusses the vital need for quality research and quantitative analysis.

By utilizing " quantitative analysis" (Cooper & Schindler, 1998), we can project growth and opportunities for future business. Thiscase studywill focus on three key aspects of quantitative analysis as an effective management tool: (1) quantitative analysis procedure, (2) Cost effective analysis evaluates results or outcomes, and (3) cost impact-determine cost or impact associated with a process. Finally, specific company examples Ballard Power Systems, Atlantic-ACM, and Brix Networks will be cited. Quantitative Analysis Procedure-Select Alternatives with Best Sustainable Advantage

Numbers are a businessman" s best friend. They are first of all, the measure of success. They are increasingly a critical tool for almost every kind of analysis and planning. However, let it be said that quantitative analysis is only as good as the data supporting the analysis. Ballard Power Systems, Inc. was founded in 1979 under the name Ballard Research Inc. to conduct research and development in high-energy lithium batteries. In 1983, Ballard began developing proton exchange membrane (PEM) fuel cells.

According to Ballard (2001), the company utilized quantitative analysis procedures to project out their long-termgoals. The problem defined was: how to commercialize the fuel cell successfully? The possible alternatives were: (1) market the product on their own, and (2) find strategic partners who would integrate this key component into competitive products. The cost or impact on alternative number (1) was too expensive and too risky. Alternative number (2) was the s! martest and most logical course to follow.

The effectiveness of alternative number (2) could be projected out with a much higher degree of certainty than alternative number (1). The value of working in conjunction with partners was simple. By leveraging combined efforts: (1) obtaining capital was simplified, (2) mass production was a reality, (3) access to critical markets was realized, (4) service coverage was assured, and (5) it would lower the manufacturing cost and speed up the development of the fuel cell. Alternative number (2) provided Ballard with the best sustainable advantage.

By securing alliances with selected global players in Ballard" s target market, the benefits of clean, efficient, and reliable power in a wide spectrum of

potential applications could be delivered effectively. Cost-Effective Analysis- Evaluates Results or Outcomes According to Atlantic-ACM (2001), the company is an international strategy consulting and research firm well known for it" s exclusive analysis of the telecommunicatiuons industry in the United States. One of the types of quantitative studies (Cooper & Schindler, 1998) cost effectiveness analysis was used by Atlantic-ACM to study the U. S wholesale market, wholesale long distance.

Using the industry " carrier report card," a type of survey that provides a quantitative analysis of the overall size and composition of the current wholesale market, Atlantic-ACM was able to project the qrowth and opportunities for future business in the wholesale long distance market. The survey revealed (Atlantic-ACM, 2001) a shifting industry in which new entrants are actively gaining market share over the traditional " three players," MCI, AT&T, and Sprint. The exploding data/internet demand, expanding networks, evolving technologies, developing channels, and de-regulating global markets have lo! ered the cost of long distance time and time again.

The statistical data gleaned in the survey showed that wholesalers cannot compete on price alone. The outcome of the survey showed that resellers must receive more support from wholesalers to help drive sales of their products and services to the end users. Cost Impact-Determines Cost or Impact Associated with a Process Brix Networks (2001) commissioned Sage Research to conduct a survey of 148 U. S organizations ranging in size from 500 to more than 10, 000 employees.

The type of quantitative studies utilized by Sage Research was cost impact. Cost impact determines the cost or impact associated with a process. The process in question was service level agreements. The service level agreement in question is an agreement between enterprise businesses and ISPs. The process is the successful implementation of the SLAs. According to Brix Networks (2001) over half of the enterprise IT professionals surveyed, said that services such as web hosting, e-mail, IP VPNs, with guaranteed SLAs have more than 30% more value than the same services without guaranteed SLAs.

Service providers who provide guaranteed SLAs in the service contract were more likely to develop a loyal customer base than providers without SLA guarantees. Considering the fact that approximately one third of enterprises change provi! ders as a result of SLA disputes and nearly one quarter give poor recommendations about their provider to others, it seems fair to say that there is a definite cost impact to providers with no SLAs. Companies wishing to do well in the highly competitive ISP business need effective SLAs as part of their contracts with customers.

The outcome of not having SLAs is simple: companies will lose their customer base to companies with SLAs. As this case study has shown, Cooper &Schindler (1998) described three aspects of quantitative analysis: (1) quantitative analysis procedure, (2) Cost-effective analysis-evaluates results or outcomes, and (3) cost impact-determines cost or impact associated with a process. In the examples discussed, Ballard Power Systems realized a need to expand their business globally by merging with strategic

partners able to effectively deliver the benefits of clean, efficient, and reliable power in a wide spectrum of potential applications.

Utilizing the quantitative analysis procedure to identify alternatives/costs/benefits, estimate the value of each, compare costs to benefits and, finally, select the best alternative with the best sustainable advantage enabled Ballard to reach a decision that would ultimately allow them to reach their goals effectively. Atlantic-ACM utilized cost effective analysis to determine that in order for wholesalers to sell their products effectively they ne! eded to provide resellers with more marketing support to help drive sales of their products and services to end users.

Finally, Brix Networks commissioned Sage Research to conduct a survey of 148 businesses ranging in size from 500 to more than 10, 000 employees. The survey conducted was a type of quantitative study called cost impact. Cooper & Schindler (1998), defines cost impact as " determines the cost or impact associated with a process. " The process was the SLA or Service Level Agreement in place between enterprise businesses and ISPs. The results of the study showed that ISPs providing SLA agreements in their contracts were more likely to keep their customer base.

However, ISPs with no SLA" s in place were one third more likely to lose their customers because of SLA disputes. In conclusion it is this authors view that a company" s willingness to utilize quantitative analysis as a management tool coupled with good research, will affect the decisions of tomorrow. However, it should be stressed that there is also a danger in numbers. Numbers can often give a false sense of certainty and objectivity and can

become a cheap substitute for knowledge, experience and judgement. The challenge for managers and leaders is to know when to ignore the numbers and go with gut instinct.