

Examining the Performance of Google and AltaVista Through the Lens of the Cube One Framework

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This article examines the management, marketing, and human resource practices of two Internet search companies through the lens of the Cube One framework, a three-dimensional model of the determinants of organizational performance that posits that successful organizations must simultaneously meet the needs of customers, employees, and the providers of capital. A detailed examination of enacted practices reveals that Google, which has been extraordinarily successful, has succeeded in all three regards. In contrast, AltaVista, which went out of business, did not. The Cube One framework, then, is useful for explaining differences in organizational performance and can serve as a guide for managing organizations in a globally competitive environment.
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Rising from relative obscurity to seeming overnight success, Google has become one of the greatest successes in business history. Stories about Google's main complex in Mountain View, California, carry a legendary aura, and the company's placement at the top of the list of *Fortune* magazine's Top 100 Best Companies to Work For has cemented its position as a company to be truly admired.

Yet Google's service offerings alone, though outstanding, would hardly be enough to warrant such accolades. The main search engine is impressive; however, Google's other services face stiff competition. Gmail, Google's e-mail service, provides a clean sleek interface, yet it is not the first to offer unlimited e-mail storage space (Yahoo! was the first to do so). Google Talk, Google's instant messaging service, is also clean and barebones but still fights

for users with such industry giants as Skype, AOL Instant Messenger, and Microsoft's Windows Live Messenger. Google's latest offering, the Chrome Web browser, also has received less than enthusiastic responses from Internet users accustomed to the features of more mature offerings, such as Mozilla Firefox and Microsoft Internet Explorer. There is a good deal of excitement about two forthcoming products: Google Wave, which will allow users to share photos by dragging and dropping, and Google's remote GPS, which will speak travel directions and provide traffic information.

As a company to emulate, Google differs from traditional companies in that it offers almost no direct contact with its end-users. Google has neither sales representatives nor service providers (such as greeters or flight attendants) who provide a more personal touch. Still, Google manages to attract an almost fanatical following. Notwithstanding a culture that is seen as spontaneous and fun-loving, Google's success is not accidental. Indeed, the company has incorporated various practices that have helped it attain its current position. These best practices come to the fore when the company's performance is analyzed with the three-dimensional Cube One model.

The Cube One Model

The Cube One framework posits that successful organizations must satisfy the needs of three primary participants: the customers who provide revenues that fund the enterprise; the internal customers (employees) who convert resources into outputs; and

the providers of capital (through equity and loans in the for-profit sector, and through grants, donations, and taxes in the nonprofit and government sectors). Customers purchase goods and services, provided they are of good quality and priced appropriately; employees remain affiliated with the organization if they are treated and paid well; and the providers of capital expect that the enterprise will be efficient in the conversion of inputs to outputs. It is, therefore, incumbent upon organizations to enact practices that are effective in satisfying the interests of customers, employees, and the providers of capital—that is, that they engage in customer-directed, employee-directed, and productivity-directed practices. The Cube One framework entails examining sets of practices that cross disciplinary borders insofar as customer-, employee-, and productivity-directed practices pertain to marketing, quality control, organizational behavior, human resource management, information technology, and operations management.

Prior research on the Cube One framework has examined survey data from members of approximately 600 organizations regarding the enactment of customer-, employee-, and productivity-directed practices. The survey included such customer-directed practices as continuously improving product/service quality and regularly assessing customer satisfaction. Employee-directed practices included minimizing hierarchical distinctions and implementing policies to reduce work-life conflicts. Productivity-directed practices were those that increased employee work motivation and ability (and, therefore, productivity), such as the use of goal setting or systematic employee selection. Organizations were categorized as being high, middle, or low in the enactment of each of the three sets of practices, yielding 27 categories or cubes in three-dimensional space. Organizations that were rated high on all three sets of practices (high, high, high) were classified as being in Cube One, while those that were rated low on all three sets of practices (low, low, low) were classified as being in Cube 27 (see

Exhibit 1. Schematic Representation of Cube One Framework

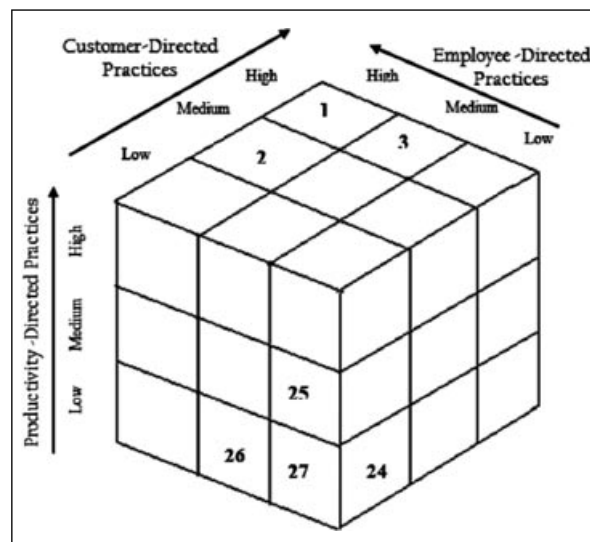
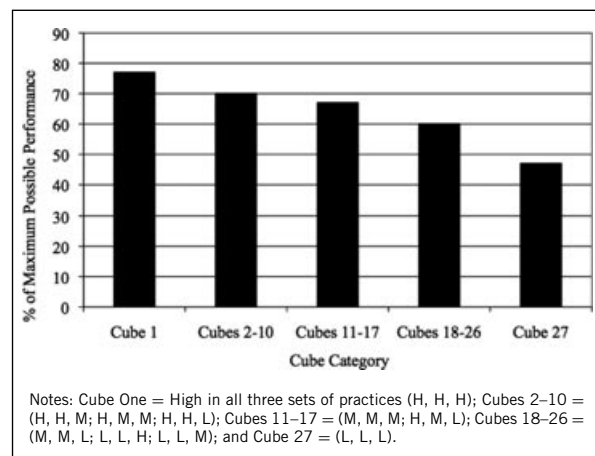


Exhibit 1). Survey respondents' ratings of organizational performance varied as predicted—that is, in accordance with the enactment of the three sets of practices. The performance of organizations in Cube One was 12.7 standard errors higher than the performance of organizations in Cube 27, a difference that is quite large. Regarding the magnitude of this difference, it might be noted that a difference of two standard errors is considered statistically significant, attributable to chance alone with only a 5 percent probability—that is, $p < .05$. By contrast, the acclaimed Six Sigma threshold (that is, six standard errors) corresponds to 3.4 occurrences per million observations, which is one-thousandth as likely as .05, and a difference of 12 standard errors is attributable to chance with a probability of less than one-millionth of .05. Exhibit 2 presents a summary pertinent to the validity of the Cube One framework.

Although prior research has examined survey data from several hundred organizations, it has not looked in depth at the practices of any specific organization. Broadly speaking, past research has collected a limited amount of data from respondents

Exhibit 2. Mean Performance of Organizations Across Cube Categories



in many organizations. In contrast, the present approach examines, in depth, the practices of two organizations: Google and AltaVista.

Analyzing Google’s Success

Productivity-Directed Practices Lead to Success at Google

Although there are an almost unlimited number of practices pertinent to productivity that could be cited in connection with any company, following are those that seem particularly pertinent to Google’s success.

Business Is Conducted in a Planned and Cost-Effective Manner. Despite Google’s freewheeling image, the company develops new projects cautiously and is driven by two primary concerns: user interest and profit-and-loss calculations. When either profitability or user interest is lacking, Google will terminate the project and either reassign or lay off the programmers. One such example is Google’s Lively project. Originally designed as a “network of avatars and virtual rooms created and decorated by its users,” much akin to Linden Lab’s Second Life, the project existed for a mere four months. After the site accumulated only 10,000 visits in a seven-day period, Google pulled the plug on January 1, 2009.

Employees Are Hired in a Systematic Fashion. Google’s hiring processes are known to be torturous to the point of being legendary. Applicants face numerous rounds of interviews, often stretched over a period of months—and sometimes they are assigned “homework” to turn in. Applicants also face challenging questions, such as estimating the number of trees in New York City’s Central Park, or being asked to solve complex mathematical equations. During Google’s formative years (until 2000), hiring decisions were made by a hiring committee composed almost entirely of employees, who interviewed every applicant and often debated for hours over potential hires. The insistence on grilling applicants stemmed from the intent of Google’s founders, Larry Page and Sergey Brin, to avoid the Silicon Valley phenomenon of the hiring spiral—in which each successive wave of employees hires employees who are less capable and, therefore, less threatening to themselves.

The criteria by which Google applicants are assessed are extremely demanding and highly objective. First, they must have a very high grade point average from an elite university. The Internet abounds with examples of applicants who were not hired for GPA-related reasons—for example, because of a “C” grade during sophomore year. Although conventional corporate wisdom holds that GPAs do not matter as much as experience, Google’s stringent hiring practices have yielded a uniquely capable workforce. In a move aimed at significantly expediting the hiring process, Google has started to examine data on nearly 300 variables, including number of languages spoken, age when first using a computer, and number of patents held.

Employees Are Cross-Trained and Empowered. At Google almost no employee is a “specialist” in the traditional sense. Although there is a separation between engineering and sales, Google’s engineers are not trained for specific tasks and work on multiple projects. Engineers are allowed—indeed, encouraged—to mingle with their colleagues and participate in the projects that capture their interests.

One of the methods by which Google accomplishes this is by sharing prodigious amounts of data internally; project details are not kept secret from the rest of the company.

The Organization Continuously Seeks to Improve Productivity. Apart from offering employees sabbaticals and new career opportunities, Google also has actively sought to expand its employee experiences via external means. For example, in November 2008 Google began job swaps with Procter & Gamble. Google employees working at P&G were able to see how a preeminent consumer product company executes its marketing campaigns, including the details and planning. Beyond developing Google employees, this experience no doubt enhanced Google's ability to absorb new management and marketing practices, both of which are necessary for continued rapid growth.

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Organization Infrastructure Is Continuously Improved. An example of an economical infrastructure improvement is Google's use of "White Box" servers constructed out of industry-standard parts. This has enabled the company to obtain the performance of an \$800,000 IBM server for the price of \$250,000. Moreover, whereas a typical company's server resides on one computer and is usually hard to update, Google's approach allows updating almost at will. By spreading data and work processes across many computers, Google is able to wait until one cluster of servers is completely dead before replacing it entirely with up-to-date machines without so much as a slowdown in service. This allows the firm to rapidly keep pace with new developments in

computer hardware and software, instead of relying on outdated computers.

There Is Continuous Communication Between Employees and Management. One of the ways Google achieves good communication is through its internal company Web site. Every employee must write five lines on what he or she did the previous week, and this is open for all to see. Google also has an "ideas mailing list" in which new product ideas are circulated among employees, an approach analogous to Google's view of Internet search—that people should be able to easily access information. Many of Google's innovative products have resulted from these companywide brainstorming activities, including Gmail and Google's plan to digitize books.

Departments Collaborate and Solve Problems Together. Believing that the strength of the collective is far greater than the sum of its parts, Google prides itself on having a group-based work environment. The primary way Google develops new ideas reflects this concept. Projects are developed by small groups that are formed and dissolved as needed. As Eric Schmidt, Google's CEO, put it, "There is much greater progress if you have many small teams going out at once."

The flexible team approach was not implemented at Google's inception, however. In 2001, Google adopted a traditional approach to team management. Employees were organized into teams that reported to managers, who reported to Page and Brin. But Page and Brin felt the company had become sluggish and decided on a flexible approach, cutting out middle management and having hundreds of small groups of employees work on projects simultaneously while reporting directly to them. Of course, Google does not expect every project to succeed. Projects that are successful are quickly developed into more mature offerings, while groups working on projects headed nowhere are disbanded and reformed into new project groups. In an interview with University of Washington students, Schmidt

expressed the idea succinctly: “We try to keep it small. You just don’t get productivity out of large groups.” To foster collaboration, Google eschews private offices. Employees often are crammed into close quarters to get things done.

Customer-Directed Practices Spur Satisfaction and Loyalty

Google provides many products that enable customers to interact with their environment, such as Google search, Gmail, and YouTube; yet the company does not have customer service personnel who interact with users in a traditional sense. Individuals who contact Google regarding search or advertisement concerns are often given automated responses. Google does, however, strive to earn customer trust. Indeed, its success rests heavily on the trust that its users have in the company and its offerings, and Google’s motto, “Don’t be evil,” captures the essence of this effort. Still, many Internet users view Google’s actions as being of questionable virtue, such as Google’s search algorithm, which permits finding a great deal of personal information, or Google Maps, which provides photographs of residential buildings. Therefore, Google strives to convince users that the company is mindful of their concerns.

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Customer Feedback Is Sought and Used for Product Improvement. Google may appear to some as a faceless, quirky company whose primary interest is in user searches; however, user feedback is an important contributor to its product development. Most telling is Google’s eagerness to accept user feedback in the form of blogs. The company maintains a main blog site, and every project under development at Google

also has its own blog site where project progress is continuously monitored and users are encouraged to share their thoughts in an effort to improve the final product.

Products/Services Are Continuously and Proactively Improved. “Beta” status software, a term traditionally used to denote an initial test version not ready for public consumption, has frequently been used by Google almost as a tag line on its projects. In fact, so many of Google’s projects are known for having a seemingly eternal “beta” status that even the official company blog acknowledges this with good humor. One of the main reasons for this stems from Google’s quest for perfection and the belief that perpetual refinement of a product is the basis for future success. This practice of ongoing refinement facilitates bringing excellent products to users while maintaining the flexibility to update them as desired.

A Wide Range of Products/Services Is Available. Although its origins are rooted in the Google search engine, the company has branched out to become a complete online services provider. Gmail not only offers e-mail services to regular users but also provides a solutions package for organizations and corporate customers (Google Communicate). For customers interested in an even more comprehensive online solution, Gmail is included as part of Google Apps, which encompasses not only e-mail but also Google Calendar, an agenda management solution; Google Docs, an online-based office suite; Google Sites for setting up Web pages; and Google Video for customers to host and share their videos. At present, more than two million businesses run Google Apps, and this just scratches the surface of what Google offers to its users. Google Maps not only provides basic street maps all over the world but also includes a built-in directory to search for businesses and services, and can be coupled with either real-time traffic information or mass-transit schedules to provide users the quickest route to their destination. Furthermore, all of Google’s popular services are accessible via mobile phones.

Google also has made advances offline. The G1 phone is a potential competitor to the well-established Apple iPhone; likewise, in 2008 Google's Chrome Internet browser started to compete directly with Microsoft. One year later, Google unveiled Chrome OS, an operating system even more squarely aimed at Microsoft. (As of this writing, it has not been released to the general public.)

Product/Service Lapses Are Followed by Quick and Effective Recoveries. In September 2009, Google's popular online office service, Apps, suffered a major service outage that also affected Gmail. Because many enterprises and educational organizations relied on Apps and Gmail for their internal e-mail usage, this service outage had a wide-ranging impact. Although the recovery process lasted 90 minutes—by no means a quick and immediate recovery—Google continuously updated users as to the status of the recovery via its Apps Status Dashboard Web site. An almost play-by-play report of what Google was doing to restore service and an estimated time at which full service would be restored were provided on this Web site. This transparency and real-time communication about restoration of service were effective methods of alleviating customer concerns.

Employee-Directed Practices Promote Employee Satisfaction and Loyalty

In keeping with the Cube One framework, here is a look at key Google practices that are intended to increase employee satisfaction and loyalty.

Employees Are Granted Considerable Autonomy. Google employees are granted a wide degree of autonomy. Most famous—and probably most beloved—is the “20 percent rule.” Employees are encouraged to spend 20 percent of their working hours (either spread out or batched) pursuing projects of interest, with the understanding that these side projects may be adopted by the company as part of Google's products and services lineup. As such, ideas may span from improving existing services to saving the planet. There is also the understanding that anytime

a software engineer is reassigned, the project team leader is expected to allow the engineer to continue to work on the 20 percent side project with no interference.

Although the sanctity of the 20 percent rule has caused some griping among team leaders who feel that they have to compete for the attention of software engineers, Google has gained many unexpected synergies out of side projects, such as Gmail and Google News, which are now some of its most popular services. Side projects need not be geared toward external users; employees may also focus on internal projects. (The Google employee shuttle described later in this article was born out of a 20 percent time project.) Another example of a successful outgrowth is the development of the “testing grouplet” to detect flaws in software code while a product is still in the early stages of development.

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Employees Are Provided With a Good Work Environment.

Google's renowned perks enable employees to focus on their work more effectively, free from worries about the mundane details of life. Employees have on-premises access to laundry services, haircuts, day care, physicians, and more. One of the most often noted perks is the exceptionally high-quality food offered at Google's Mountain View campus, ranging from Irish oatmeal with fresh berries to roasted quail—all at no cost to employees. In an interview with ZDNet, Stacy Sullivan, Google's chief culture officer, said that food was the most appreciated perk. According to Sullivan, every Google field office offers food service, with cafeterias and chefs available wherever space permits. Google's founders, Page and Brin, believe that “no employee should be more than 150 feet from a food source.”

Another distinctive characteristic of the work environment—and one that may be seen as unfavorable by some employees—is the relative scarcity of private offices. In a recent article about Google as one of the best places to work, one employee noted that employees “[give] up their big space to be crammed in this [conference] room to get things done.” Presumably employees with a high need for intellectual stimulation see this feature as not being a big negative.

For a company that believes in recruiting the best candidates, retaining the best employees is perhaps even more crucial. As Google’s CEO, Schmidt, stated, company perks are very important in this regard, and Google has “no intention of getting rid of these really important aspects of culture.” Purportedly, the rationale for the founders’ shares having a 10-to-1 voting ratio compared to regular shares was to prevent shareholders from voting to cut what Page and Brin saw as important Google perks.

Employees Are Kept Informed. By sharing prodigious amounts of data internally with their employees, Google’s managers not only achieve a high level of employee productivity and creativity, but also enhance employee satisfaction. Clearly, the message is that employees can be trusted with highly sensitive information.

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Employees Are Encouraged to Balance Work Life and Private Life. A perk that rivals the food service in popularity among Google employees is the company’s shuttle service, which the company provides for employees free of charge. Google operates 32 shuttle buses at its Mountain View campus that serve 1,200 employees, or one-quarter of the Google

workforce in Silicon Valley. Shuttles, which operate on two shifts, have leather seats and wireless Internet access. They also allow pets and bikes but do not allow loud personal cell-phone calls. The main purpose of Google’s shuttle service is to free employees from the burdens of navigating rush-hour traffic, thereby reducing stress and possibly gaining extra hours of work. Although the shuttle service may expand the time available for work, most Google employees feel that the shuttle service has an overall positive impact on their quality of life.

There are other practices that serve to lessen work-life conflicts. Employees who choose to drive instead of taking the shuttle receive a \$5,000 subsidy toward the purchase of a hybrid car. Google also provides a \$500 subsidy that covers food costs for employees with newborns, helping them through the hectic first four weeks.

Employees’ Developmental Goals Are Satisfied. Although the perks are outstanding and pay levels are high at Google (for example, in 2006, engineers earned up to \$130,000, plus stock grants and stock options), compensation is not the primary motivation for many employees; personal development is. Career development and growth opportunities include working on challenging technical, managerial, and financial problems; working and networking with high-achieving individuals; and building human capital by participating in a job-swapping program. Google also has a sabbatical program to allow employees to recharge their intellectual energies.

Conclusion

It is clear that over the past 15 years Google has adopted management, marketing, and human resource practices that have resulted in high levels of productivity, excellent customer satisfaction, and excellent employee satisfaction and commitment. Within the Cube One framework (Exhibit 1), we would classify Google in Cube 1 (high, high, high).

It should be noted that some practices affect more than one of the three dimensions of the Cube One framework. For example, Google's provision of excellent transit and food service enhances not only employee satisfaction and loyalty, but also productivity, for employees can think about work-related matters while commuting and need not stop working to get food. Since practices have effects that inhabit three-dimensional space, it is not sufficient to merely count the number of practices primarily directed toward customers, employees, and the enterprise's efficiency and creativity.

What Went Wrong at AltaVista?

Many users of the Internet will remember AltaVista as the first true search engine. During its time, AltaVista was one of the first Web sites to facilitate search. AltaVista's primacy, however, lasted only until it was acquired in 1998 by Compaq, after which it was rapidly overtaken by Google. Google and AltaVista shared several characteristics. Both companies were, for their time, dedicated to search, and both inspired the belief that Internet information was becoming easily accessible to regular users. The disparity in their eventual development, however, has led many commentators to speculate about what went wrong at AltaVista.

Originally launched by Digital Equipment Corporation (DEC), AltaVista gained much acclaim not only from the press, but also from users. Fifteen years ago, people marveled at the possibility of using keywords to "search" the Internet. At that time, AltaVista reportedly offered the "fastest and most precise information agent on the Web," and some commentators feared that AltaVista's indexing capabilities might overwhelm the Internet, an idea that today seems quaint. As the search engine started to gain users, however, there were signs that all was not well in the kingdom of DEC.

Customer-Directed Practices Partly Miss the Mark

Returning to the Cube One framework, a review of some of the practices that AltaVista implemented

to foster customer satisfaction and loyalty shows that the company was partially on track to succeed.

An Academic Approach to Business Hampers Product and Service Offerings. Rather than emphasizing AltaVista's search capabilities, the company's vice president of corporate research emphasized the ability of DEC Alpha computers to run the AltaVista search engine. In 1996, DEC planned to spin off AltaVista into a separate company, with the goal of receiving "recognition for developing a cutting-edge Internet technology [that would] boost sales of Digital computers." Indeed, basing his findings on interviews with DEC employees, John Battelle, author of *The Search* (a 2005 book about Google and its rivals), concluded that the initial plan was to utilize AltaVista to showcase DEC's Alpha computers—there being no long-term plan for growing the AltaVista search business. As a result, AltaVista was provided neither sufficient funding nor the staff needed for rapid product development and market expansion in the crucial early months of growth. The reticence about making a commitment to AltaVista apparently reflected a pervasive cultural problem at DEC, which Edgar H. Schein, author of *DEC Is Dead, Long Live DEC: The Lasting Legacy of Digital Equipment Corporation*, characterized as resulting from an academic approach to business. In his in-depth study of the culture at DEC, Schein found constant foot-dragging, with projects being "reviewed to death."

By 1996, attention was being drawn to AltaVista's lack of solid revenues, as the company under DEC did not sell ads but, rather, sought to license its search technology to organizations for internal corporate use. But as 1996 drew to a close with AltaVista's hoped-for initial public offering (IPO) nowhere in sight, DEC began allowing the sale of ads to boost revenue prospects. This change apparently led to confusion among dedicated users who had grown accustomed to ad-free searches.

Greatly hampered by limited resources and staffing, AltaVista eventually failed to keep pace with technological change in the realities of search, according to Louis Monier, the founder and primary engineer who designed the AltaVista search engine algorithm. Monier reveals that AltaVista's search engine was built around calculating the number of links that pointed to a single page. That is, AltaVista trusted the content of pages, not taking into consideration the source of the links; consequently, spammers directed users to various types of unwanted sites. The result was that AltaVista's search went, in Monier's words, from "superb in 1995 to virtually gone in 1997 and to an embarrassment in 1998." Meanwhile, Google had solved the spam problem by detecting the source of Web pages.

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By mid-1997, DEC decided against spinning off AltaVista and decided to keep the search engine as part of its attempt to provide Internet business solutions. Battelle's interviews reveal that during this time most of the original management team, including AltaVista's CEO, Ilene Lang, resigned, and the engineers behind AltaVista's technology were dispersed. These significant personnel changes reduced the company's ability to upgrade its service offerings.

A Wide Range of Products/Services Is Available, but Focus Is Lacking. Even during these dark times, innovation at AltaVista brought glimmers of hope. Early in 1998, the company unveiled a service that permitted translation of entire Web pages between English and various other languages. Named Babel Fish, the service quickly caught on as many used

the free translation services for e-mail and chatting. AltaVista Discovery, a free desktop search program also launched in 1998 that enabled users to search files on their own computers, similarly garnered positive reviews from various sources. Around this same time, AltaVista also began providing free e-mail services, along with user home pages, instant messaging, shopping capabilities, and a range of branded content. With this bustle of activity, AltaVista continued to enjoy a reputation for strong technology, but with hazy prospects for making money, it also drew such comments as "What is their business?"

In 1998, Compaq acquired DEC, along with the AltaVista search engine. Compaq's plan for AltaVista was to turn it into a portal site that would compete with Yahoo! To accomplish this, Compaq wanted AltaVista to add portal features so it could participate in what management considered the astounding growth of portal companies. In hindsight, it is clear that this plan was doomed, but during the late 1990s, portals were seen as the best way to garner Internet revenues. Despite Compaq's stated support for AltaVista's development, by the late 1990s, most industry analysts remained skeptical as to whether Compaq would be able to provide the resources and staff needed to develop competitive products and services. During this time, AltaVista lost what was left of its original DEC engineering team with the departure of the lead engineer and more than 30 software engineers. Thus, neither the quality nor the scope of the company's products or services could remain competitive.

In June 1999, Compaq sold AltaVista to CMGI, an Internet investment company. In an Internet business world enamored with the concept of Internet portals, there were growing doubts as to whether CMGI could turn AltaVista around. *Forbes* magazine lamented AltaVista's "arcane" search capabilities and its lack of the rich features provided by competitors like Yahoo! and Lycos. Concomitantly, Internet users at IT enthusiast sites such as Slashdot

decried AltaVista's move toward portal features and the company's lack of focus on search.

Productivity-Directed Practices Reveal a Lack of a Viable Business Model

AltaVista's productivity-oriented practices, outlined in this section, show a lack of coherence that ultimately contributed to the firm's demise.

Organization Infrastructure Was Not Continuously Improved. In 1999, CMGI announced another IPO attempt for AltaVista, and this drew renewed criticisms from IT users as Google began drawing more attention because of its singular focus on search and simple user interface. *Wired* magazine also reported on AltaVista's inability to properly update its search capabilities without causing service issues.

AltaVista's first CEO, Ilene Lang, envisioned the company as an Internet software solution company, providing such services such as security, search, and e-mail; however, AltaVista's primary engineer, Louis Monier, believed search should be AltaVista's focus.

Departments Did Not Collaborate to Solve Problems.

Aside from the lack of proper funding and staff needed for growth, AltaVista further suffered from disagreements among its leaders. AltaVista's first CEO, Ilene Lang, envisioned the company as an Internet software solution company, providing such services such as security, search, and e-mail; however, AltaVista's primary engineer, Louis Monier, believed search should be AltaVista's focus. This disagreement among top management, coupled with DEC's inconsistent view of AltaVista's future, plagued the company's development for years. According to C. Gordon Bell, a noted computer expert, DEC did not understand that customers wanted solutions to problems, which is what software provides; they did not want to purchase the capability for processing data, which is what hardware provides.

Business Was Not Conducted in a Planned and Cost-Effective Manner. In 1999, AltaVista announced its intention to provide free Internet access, a move that was hailed by the press as forward-looking but lamented by users as reflecting a scattered focus. By 2000, even the popular press had become aware of AltaVista's lack of a coherent business model. A *Forbes* article in 2000 reported that AltaVista was attempting to serve dual functions: search engine and feature-rich Internet portal. Later in that year, AltaVista lost its second CEO (Rod Schrock) and Internet news sites speculated that the company might not survive because of the absence of a viable business model.

In 2003, after four years under CMGI, AltaVista was once again sold, this time to Overture, an Internet advertising company. The selling price was about 5 percent of what CMGI had paid for AltaVista. By this time, though, AltaVista's once-vaunted technical expertise had dissipated, and Google was far in the lead in Internet search. In July 2003, a mere three months after AltaVista's sale to Overture, Overture was, in turn, purchased by Yahoo! By 2004, AltaVista's existence as an independent search engine was effectively terminated, as many Internet blogs and news sites reported that AltaVista had discarded its own search results database in favor of Yahoo!'s.

Employee-Directed Practices Fell Short

In a number of respects, AltaVista's employee-directed practices were initially good, but their efficacy declined over time.

Challenging Work Opportunities Dwindled. Employees, initially, performed information technology, engineering, and marketing work that was state-of-the-art; consequently, there were opportunities for growth. These intrinsic benefits slowly vanished as the product went, in the founder's words, from "superb" to an "embarrassment."

Employees Were Not Kept Informed. Few of the employees knew of DEC's plans for AltaVista. As noted earlier, this largely reflected both the fact that AltaVista was a small software division (product, really), in a large hardware company, and DEC's unwillingness to make a commitment.

Conclusion

AltaVista initially had the basis for good customer satisfaction because of its technical capabilities and range of potential product and service offerings, but a lack of a coherent business strategy and misapplied resources resulted in the development of neither a successful search engine nor a competitive portal site. Since AltaVista had assembled a talented team of engineers, employee-directed practices probably were good at the outset. But these practices ultimately diminished as technical talent continued to leave.

We see AltaVista as being at a medium level on customer-directed and employee-directed practices (at least initially), but low on productivity-directed practices. In the Cube One framework (Exhibit 1), this places AltaVista around Cubes 21–23 (M, M, L).

Toward Managerial Application of the Cube One Framework

The positions of Google and AltaVista in the Cube One framework reflect not only two very different sets of management practices, but also markedly different business outcomes as a result, we would posit. These two case studies alone, however compelling, cannot provide sufficient evidence to confirm the validity of the theory that underlies the model.¹ Nonetheless, we contend that the Cube One framework provides a systematic way of thinking about key determinants of organizational performance, and a way to interpret instances of organizational success and failure. Managers can benefit from being mindful of the necessity of achieving success with regard to the three key stakeholders: providers of

funding, employees, and customers. Successful organizations are need-satisfying places, and the goals of all three key stakeholders are of paramount importance. The Cube One framework does not posit that the three dimensions (or sets of practices) are essentially antagonistic, or that a zero-sum game exists. (In contrast, there are prominent theories that posit that managers must choose between high levels of productivity or employee satisfaction.) Not only does the Cube One framework suggest that organizations should enact all three sets of practices, but also evidence indicates that the better-managed companies do so.

Managers can benefit from being mindful of the necessity of achieving success with regard to the three key stakeholders: providers of funding, employees, and customers.

Managers should be aware of practices implemented by competitors and carefully consider whether such practices might be implemented in their organizations (that is, employ a form of benchmarking). It is also important to collect data from customers and employees about the actual extent to which practices are implemented. Although a particular practice may appear in a handbook or in policy notices, such statements do not ensure that the practice is actually being implemented. For example, an in-depth analysis of pay practices in a department store chain with a strong pay-for-performance philosophy revealed that in more than one-quarter of the stores there was a *negative* association between rated performance and salary increases—that is, low performers received larger pay increases than high performers. (Actual, not espoused, pay-performance practices are associated with store profitability; see the Kopelman et al. study in *National Productivity Review* listed in Additional Resources.) Along these lines, it is not uncommon for organizations to claim that they have a

family-friendly culture when, in fact, work-family practices are unavailable or carry negative side effects.

Employees and customers should be anonymously surveyed regarding the practices they observe. Unfortunately, there is no silver bullet or magic formula that will assure success in all organizations. High levels of efficiency, customer satisfaction and loyalty, and employee satisfaction and loyalty can be achieved in multiple ways. We recommend that practices be tracked across divisions (or for stand-alone entities) and that such data be examined over time. A low-performing organization or business unit may find it useful to have knowledge of the primary cause or causes of low performance and the types of steps most likely to improve performance. In contrast, some consultants recommend the same sets of interventions for all organizations.

Closing

In brief, the Cube One framework provides a basis for assessing an organization's performance and highlighting the data that could be used to draft an improvement plan. Such a framework is especially valuable in the current competitive environment.

Note

1. There are more variables than data points—a situation that statisticians would describe as possessing zero degrees of freedom. Nor is it possible to establish the validity of a theory by merely examining supportive evidence.

Additional Resources

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