

The Culture of Innovation

What Makes San Francisco Bay Area Companies Different?

A Bay Area Council Economic Institute and
Booz & Company Joint Report

March 2012



Bay Area Council Economic Institute

201 California Street, Suite 1450, San Francisco, CA 94111

(415) 981-7117 • Fax (415) 981-6408

www.bayareaeconomy.org • bacei@bayareacouncil.org

The Culture of Innovation

What Makes San Francisco Bay Area Companies Different?

**A Bay Area Council Economic Institute
and Booz & Company Joint Report**

Barry Jaruzelski
Partner
Booz & Company

Matthew Le Merle
Partner
Booz & Company

Sean Randolph
President & CEO
Bay Area Council Economic Institute

March 2012

About the Authors

Barry Jaruzelski (barry.jaruzelski@booz.com) is a partner with Booz & Company in Florham Park, N.J., and is the global leader of the firm's innovation practice and its engineered products and services business. He has spent more than 20 years working with high-tech and industrial clients on corporate and product strategy, product development efficiency and effectiveness, and the transformation of core innovation processes.

Matthew Le Merle (matthew.lernerle@booz.com) is a partner with Booz & Company in San Francisco. He works with leading technology, media and consumer companies, focusing on strategy, corporate development, marketing and sales, organization, operations, and innovation. He is a Board Trustee of the Bay Area Council Economic Institute and a Director of the Bay Area Council.

Sean Randolph (bacei@bayareacouncil.org) is President & CEO of the Bay Area Council Economic Institute, where he focuses on issues impacting the economic vitality and competitiveness of the San Francisco Bay Area, including Silicon Valley. His experience includes senior positions in business and in state and federal government, focusing on trade, energy, innovation and economic development.

Acknowledgements

The authors would like to acknowledge the involvement of all of the Bay Area companies that participated in Booz & Company's 2011 Global Innovation Survey.

Accela, Inc.
Accretive Health, Inc.
Agilent Technologies Inc.
Apple Inc.
Boral USA
Brocade Communications Systems, Inc.
Cisco Systems, Inc.
Eoplex Technologies, Inc.
Genentech, Inc.
Google Inc.
Griffin Partners
HCL Technologies Ltd.
Hewlett-Packard Company
Intel Corporation
JDS Uniphase Corporation
KLA-Tencor Corporation
MacroGenics, Inc.
Rigel Pharmaceuticals, Inc.
Stanford Hospital & Clinics
Symantec Corporation
Target Discovery, Inc.
Williams-Sonoma Inc.

In addition, we would like to thank the following executives, including board members of the Bay Area Council Economic Institute's science and technology affiliate, the Bay Area Science and Innovation Consortium (BASIC), who made themselves available for additional in-depth interviews through which we validated the empirical survey findings.

Fred Palensky, Executive Vice President – Research and Development
and Chief Technology Officer, 3M
Darlene J. S. Solomon, Senior Vice President and Chief Technology Officer,
Agilent Technologies
S. Soma Somasundaram, President – Fluid Solutions Platform,
Dover Corporation
Todd Kaufman, Director, State and Local Government Affairs,
Genentech, Inc.

Prith Banerjee, Senior Vice President, Research and Director, HP Labs
Stephen N. Oesterle, Senior Vice President for Medicine and Technology,
Medtronic Inc.
Stephen Hoover, CEO, PARC, A Xerox Company
Kevin Connolly, Vice President, Engineering and Global Supply Chain,
Pitney Bowes Inc.
Mark Bregman, Executive Vice President and Chief Technology Officer,
Symantec Corporation (currently Senior Vice President and CTO,
Neustar, Inc.)
Tim Yerdon, Global Director, Innovation and Design, Visteon Corporation

Finally we would like to acknowledge the hard work of the individuals who either worked on this report specifically, or who worked on the parent 2011 Global Innovation Survey, which served as the basis for this study, including Edward H. Baker, Karen Henrie, and Marc Johnson.

Contents

Foreword	vi
Executive Summary	1
1 Introduction	3
2 Innovation in the Bay Area	5
3 The 2011 Global Innovation 1000.....	9
4 The Need Seeker Approach to Innovation.....	11
5 How the Bay Area Is Different	17
6 Implications for the Bay Area and Beyond.....	25
Resources	26

Foreword

The claim has long been made that companies based in the San Francisco Bay Area owe their leadership in innovation to something different in how they go about the innovation process. This report represents a first empirical assessment of the “culture of innovation” that characterizes these innovation leaders. The goal is to contrast these companies with their global peers in order to better understand where the source of their innovative prowess lies.

For almost a decade, in its annual Global Innovation 1000 study, Booz & Company has ranked the top 1,000 public companies by their research and development spending and analyzed how that spending influences their overall financial performance. The results are clear: success at innovation is not just a blend of hard elements such as the number of researchers, the amount that they receive in funding, or the number of patents they receive. Indeed, the study has consistently shown that the absolute amount spent does not correlate with financial performance at all.

Instead, the current study indicates that the most innovative companies appear to have a “secret sauce” that makes them different from their peers—a distinct culture of innovation that ensures that their chosen innovation strategy is clearly aligned with their overall corporate strategy. This secret sauce is the glue that guarantees a high degree of coherence between what they aspire to achieve and how they go about it. Until recently, however, this claim has not been empirically tested.

The Bay Area Council Economic Institute and the Bay Area Science and Innovation Consortium (BASIC), the Economic Institute’s science and technology affiliate, have also been keenly aware of the importance of this issue, given their belief that the source of the Bay Area’s innovation success cannot be found in easily quantifiable performance measures alone. So Booz & Company and the Economic Institute decided to supplement the Global Innovation 1000 study, with a series of questions designed to empirically test what companies mean when they talk about their culture of innovation, and with additional surveys and interviews targeted specifically at Bay Area companies. In this way we were able to empirically assess the companies in the most innovative region on earth to see if there was indeed something unique in the culture of the companies here. The results are described in this report.

Executive Summary

The Bay Area is famous for its long history of leadership in computing, semi-conductors, software, biotechnology, the Internet and other innovation-based industries. But what makes it unique, beyond its talent base and access to capital? What exactly is the often celebrated “West Coast culture of innovation”? In conjunction with its 2011 Global Innovation 1000 study, Booz & Company worked with the Bay Area Council Economic Institute, the strategic research arm of the Bay Area Council, a consortium of more than 275 companies in the San Francisco Bay Area, to identify the strategic, cultural, and organizational attributes that have led to the sustained success of this region. This effort included segmenting the survey results received from Bay Area companies in order to better understand what cultural and organizational elements make them different, and conducting supplementary interviews with Bay Area executives to deepen that understanding.

The survey conducted as part of the Global Innovation 1000 study classifies companies according to three strategic profiles: Need Seekers, Market Readers, and Technology Drivers. What differentiates them is primarily their approach to markets and customers. Companies following the model we call “Need Seekers” tend to concentrate on gathering the deepest insights possible into both the articulated and unarticulated needs and desires of their customers. “Market Readers” look to meet the needs of their customers, but they typically follow already established trends in the overall market. Finally, “Technology Drivers” depend to the greatest extent on their own technical expertise to develop attractive products and services. Thus, Need Seekers tend to want to be first to market, Market Readers tend to be fast followers, and Technology Drivers tend to bring their technology-driven products to market with somewhat less regard for timing. While companies following any of the three approaches can outperform their peers, the study found that Need Seekers tend to be better aligned both culturally and strategically than the other two models (*See Chapter 5.*)

By this critical measure, companies in the Bay Area do indeed stand out. Our research found that they are almost twice as likely to follow a Need Seeker innovation model, compared to the general population of companies in the Booz global survey—46 percent versus 28 percent—while the proportion of Technology Drivers is almost exactly the same as the overall population. And they are almost three times as likely to say their innovation strategies are tightly aligned with their overall corporate business strategies—54 percent, compared with just 14 percent among all companies.

When asked if their corporate cultures supported their strategies, 46 percent of Bay Area companies strongly agreed—compared with just 19 percent of all companies—more than double the general population.

It may come as something of a surprise that companies in the Bay Area are no more likely to follow the Technology Drivers innovation model than are companies in general. But that only strengthens the argument: while Bay Area companies, like many top innovators, have found success in creating path-breaking new technologies, they are also almost twice as likely as companies in general to have developed the capabilities needed to provide a superior understanding of the stated and unstated needs of their end customers. It isn't just about how many transistors you can fit on a chip, but also about how such advances can lead to products and services that gain unprecedented traction in the marketplace through superior insight into customers, as well as the development of practical value propositions that will win those customers' business.

1 Introduction

This report is the product of a dual effort between Booz & Company and the Bay Area Council Economic Institute. As it has done for the past six years, Booz & Company conducted its annual Global Innovation 1000 study, concentrating in 2011 on the effect of culture on corporate innovation performance. In parallel, the Bay Area Council Economic Institute conducted a similar study, concentrating on a smaller set of companies in the Bay Area. Both studies included interviews of a number of innovation executives, both in and out of the Bay Area, in order to add color and depth to the empirical findings.

As always, the Booz & Company study began by identifying the 1,000 public companies around the world, for which public data on R&D spending was available, that spent the most on research and development in 2010. Then it analyzed key financial metrics for each of those companies from 2001 through 2010, including sales, gross profit, operating profit, net profit, R&D expenditures, and market capitalization. All foreign currency sales and R&D expenditure figures through 2010 were translated into U.S. dollars at 2010 daily average exchange rates. In addition, data on total shareholder return was gathered and adjusted for each company's corresponding local market.

Each company was coded into one of nine industry sectors (or "other"), and into one of five regional designations as determined by each company's reported headquarters location. To enable meaningful comparisons both within and across industries, the R&D spending levels and financial performance metrics for each company were indexed against the industry group's median values.

Separately, an online survey of nearly 600 innovation leaders in companies around the world was conducted in order to explore the role of corporate culture as it relates to innovation and financial performance. Survey respondents were also asked a series of questions to help classify their companies into one of three core profile models: "Need Seekers," "Market Readers" or "Technology Drivers." (See Chapter 4.) The characterization of each company according to one or another of the models was based on an objective analysis of their answers. Together, these results were analyzed to reveal the links between innovation strategy and culture.

This year, as part of the Global Innovation 1000 study, the Economic Institute encouraged Bay Area Council member companies both to participate in the Booz global survey and to make themselves available for focused interviews to help interpret the results. Then, as Booz & Company

conducted the analysis of the global survey results,* a separate analysis was conducted of the Bay Area-based respondents, and their results were compared and contrasted with the global survey population.

*For a more in-depth look at the results of the 2011 Global Innovation 1000 study, visit [booz.com](http://www.booz.com) or follow these links: <http://www.strategy-business.com/article/11404?gko=dfbfc> or http://www.booz.com/global/home/what_we_think/featured_content/innovation_1000_2011

2 Innovation in the Bay Area

Innovation lies at the heart of the Bay Area's economy, and the region is widely considered to be the world's leading center for innovative activity, particularly in technology. The region's ability to retain this distinction is a result not just of the many technological advances it has achieved, but also of the ongoing creation of new business paradigms that produce new companies and redefine entire industries. A large number of the Bay Area's leading companies have been created in the past 40 years. Many are quite young, and most were started by entrepreneurs.

Many of the largest and fastest growing companies in the U.S. are based in the Bay Area.

	US Fortune 500 2011 List		Global Fortune 500 2011 List		Inc. Fastest Growing 500 2011 List		Forbes Largest Private Companies 2010 List ¹	
	# HQ	Revenue \$ Billions	# HQ	Revenue \$ Billions	# HQ	Revenue \$ Millions	# HQ	Revenue \$ Billions
New York	45	1,234	18	955	24	376	16	102
Bay Area	30	920	10	774	26	547	5	41
Houston	22	500	6	378	6	48	4	15
Dallas	10	206	1	125	2	697	4	19
Atlanta	10	246	4	184	7	73	3	29
Minneapolis	9	156	2	88	0	N/A	2	112
Chicago	8	141	2	88	12	393	3	8
St. Louis	8	108	2	67	0	N/A	6	28
Charlotte	7	188	1	134	1	3	1	3
Cincinnati	6	204	3	187	1	17	0	N/A

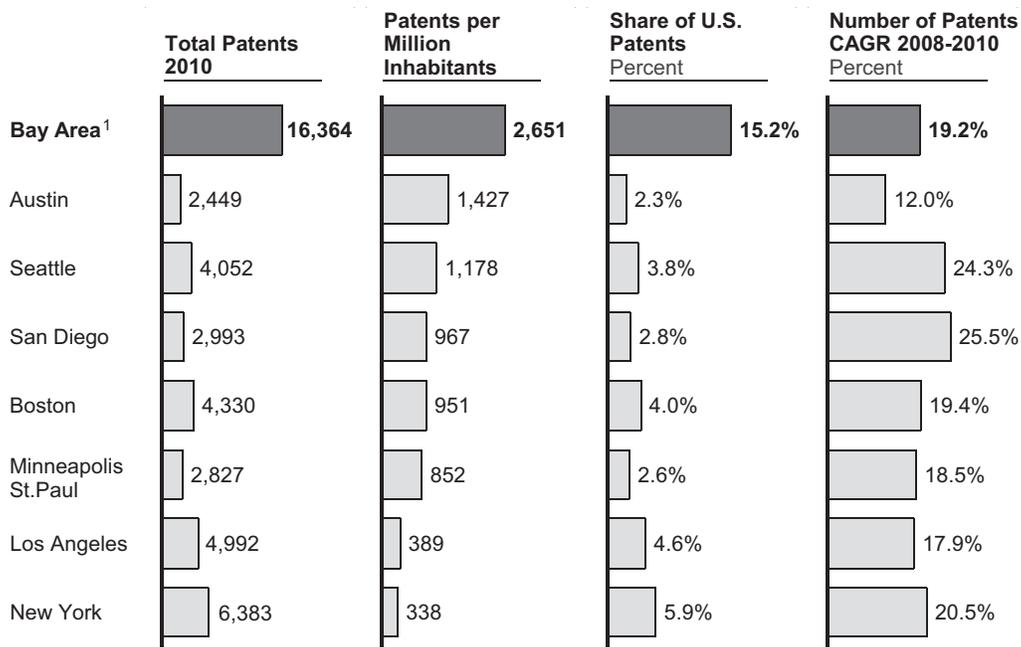
¹ Forbes largest private companies list comprises 223 companies; revenues for a number of Forbes largest private companies are calculated by using Forbes estimate or company provided estimate.

Source: Fortune Magazine, Inc. 500, Forbes; McKinsey & Company analysis; Bay Area Council Economic Institute

The Bay Area’s formula for success has been studied closely around the world. Much of it can be attributed to three critical factors: infrastructure (both hard and soft), finance, and culture. The first two can be acquired, while the third—the subject of this report—is more difficult to replicate.

The Bay Area hosts what is possibly the world’s greatest assembly of scientific research capacity. Five national laboratories call the region home: Lawrence Livermore, Lawrence Berkeley, Sandia, NASA Ames and the Stanford Linear Accelerator. The region is also home to five of the nation’s leading research universities: UC Berkeley, UC San Francisco, UC Davis, UC Santa Cruz and Stanford. These institutions are joined by an array of independent research laboratories, such as SRI, PARC, and the Buck Center on Aging. Many private sector companies maintain their own world-class research facilities, including Agilent, Apple, Genentech, Google, HP, IBM, Intel, Lockheed Martin, and many others.

The Bay Area remains at the head of its peers in terms of patents granted.

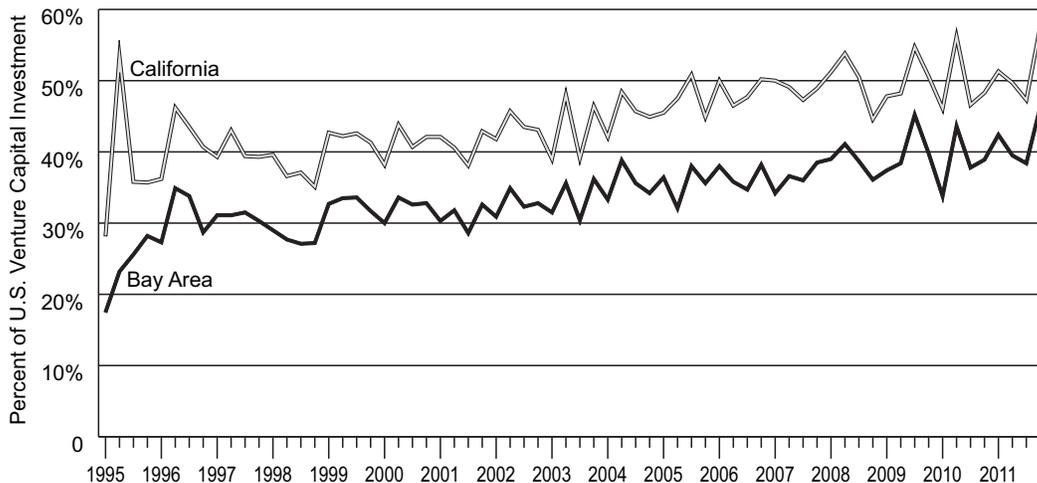


¹ Data for San Francisco and San Jose MSAs

Source: U.S. Patent and Trademark Office, U.S. Census Bureau; McKinsey & Company analysis; Bay Area Council Economic Institute

University and industry resources are brought together through two of the four California Institutes for Science and Innovation: QB3 (California Institute for Quantitative Biosciences), which focuses on the convergence of information and biotechnology, and CITRIS (Center for Information Technology Research in the Interest of Society). Other specialized research centers, such as JBEI (Joint Bio-Energy Institute), a collaboration of universities and national laboratories, have been created in recent years to focus on specific challenges, such as the conversion of plants to energy. The depth and diversity of all of the many research efforts in the region provide a core of basic science and technology, as well as a large pool of faculty, students, and scientific entrepreneurs who staff and build companies based on these technologies.

The Bay Area captures between 35 and 40 percent of U.S. venture capital investment.



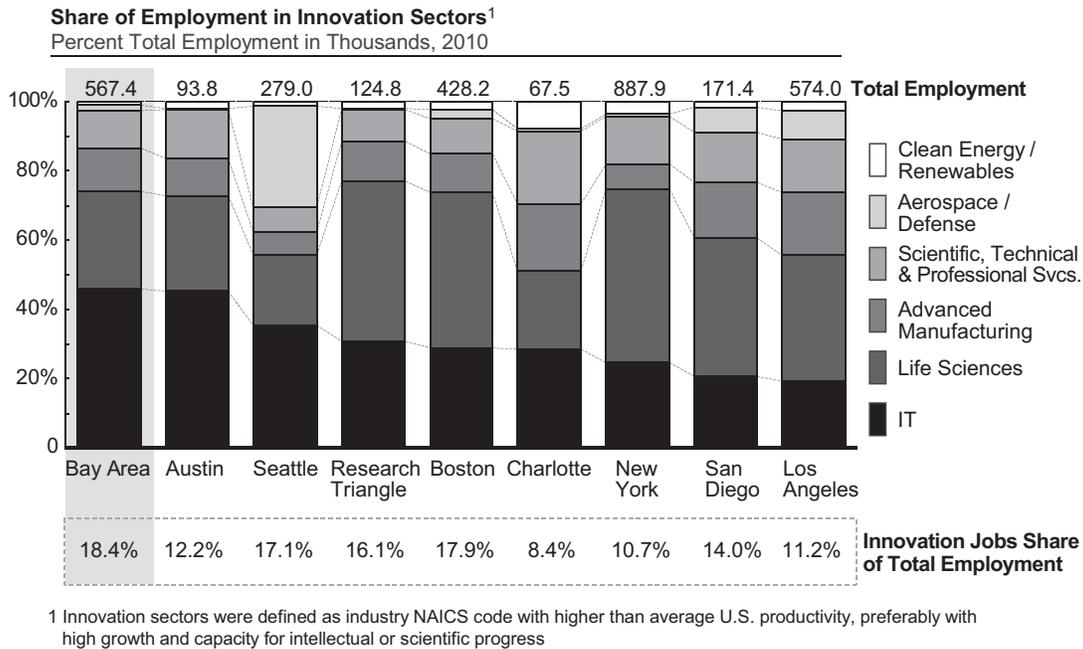
Source: PWC MoneyTree; Bay Area Council Economic Institute analysis

Another distinctive element of the Bay Area’s success is venture capital, an industry that was created in the Bay Area and continues to thrive here. The amount of venture capital money invested from year to year may vary, but between 35 and 40 percent of all venture funding in the U.S. is routinely invested in the Bay Area. At certain times and in particular industries, that percentage can be much higher. In mid-2010, 70 percent of all venture investment in clean technologies, and 50 percent of global investment in the sector, were targeted for California, primarily the Bay Area. Venture funding, as well as the funding of very young companies by angel investors, has fueled much of the technology commercialization in the region and many of its most successful companies.

As a result, the Bay Area is home to the world’s largest assembly of information technology, biotechnology, Internet, digital entertainment, and cleantech firms. The proximity of these companies to each other, and the fluidity with which people and ideas move between them, creates further opportunities for growth and development in every sector.

This leads to the region’s critical human element—the highly educated, motivated workforce that sustains its fast pace of technology development and commercialization. The Bay Area is closely identified with entrepreneurship and a strong culture of risk-taking. In its business environment, failure is not a bar to future success. Serial entrepreneurs, many from overseas, are common, and they regularly fund and mentor new generations of young companies. This spirit of acceptable risk, willingness to invest where technology and future markets intersect, and ongoing creation of new business paradigms, lies at the heart of the Bay Area’s innovation culture. It is the one element of the region’s success that has been the most difficult to export.

Innovation jobs represent a larger share of jobs in the Bay Area than anywhere else in the country.



Source: Moody’s Analytics, BLS; McKinsey & Company analysis; Bay Area Council Economic Institute

3 The 2011 Global Innovation 1000

This report, as noted, is a collaborative effort between the Bay Area Council Economic Institute and Booz & Company. It was developed based on Booz & Company's 2011 Global Innovation 1000 study, subtitled *Why Culture Is Key*, which focused on how culture informs and affects the innovation process.

Key Findings of the 2011 Global Innovation 1000 Study

Overall, corporate spending on innovation rose 9.3 percent in 2010, to a new high of \$550 billion. The increase, which followed the only decline in the seven years the Global Innovation 1000 study has been tracking R&D spending, is attributable largely to a major rebound in corporate revenues.

The top 20 global spenders averaged 10 percent R&D growth, representing \$142 billion in R&D on sales of \$1.6 trillion. Roche Holding AG led the global pack for the second year in a row, with an R&D outlay of \$9.6 billion of its \$45.7 billion in revenues; that works out to an R&D intensity rate (ratio of revenue to R&D expenditure) of more than 21 percent. Toyota Motor, the top R&D spender for several years prior to the recession, increased spending by less than 1 percent, falling from fourth place in the rankings to sixth. Pfizer (2nd), Novartis (3rd), Microsoft (4th) and Merck (5th) rounded out the top five spenders. Ford was the only company exiting the top 20, and 18th-ranked AstraZeneca was the sole newcomer.

Fully 68 percent of all companies Booz & Company tracked increased their R&D spending in 2010. Three industries accounted for \$36.1 billion, or 77 percent, of the total \$46.8 billion increase: computing and electronics, health, and automotive. Industries experiencing the greatest percentage increase in R&D spending were software and Internet (11 percent), health (9.1 percent) and industrials (8.5 percent).

- **The computing and electronics sector realized the biggest absolute increase in R&D spending and remained the #1 industry in innovation expenditures, accounting for 28 percent of the total.** With revenues up 14.2 percent, the sector increased innovation outlays by 6.1 percent, or \$16.9 billion. However, for the first time since the inception of the Global Innovation 1000 study, no high-technology company was ranked among the top three R&D spenders.
- **Health was second among industry sectors in its share of total R&D expenditures, at 22 percent.** The industry increased outlays by 9.1 percent, or \$10.4 billion, the highest rate of increase among the top three industries in 2010 and in line with the overall R&D increase of

9.3 percent across all sectors. The health sector, whose R&D expenditures are chiefly by pharmaceutical firms, captured four of the top five spots in spending among the Global Innovation 1000 and accounted for eight out of the top 20 firms in total R&D spending.

- **Automotive retained third place with a 15 percent share of total spending, due to a spending boost of 8 percent, or \$8.8 billion, in 2010, a significant change after cutting R&D outlays by 14 percent in 2009.** Revenues for the auto sector were up 16.5 percent over last year.

Globally, every region increased innovation spending in 2010, a significant turnaround compared to the previous year, when the three regions making up the lion's share—North America, Europe and Japan—all cut back. India- and China-based firms again increased their total R&D outlays at a far higher rate than companies in the three largest regions:

- The turnaround was cautious among companies headquartered in Europe and Japan, which increased R&D spending by an average 5.8 percent and 1.8 percent, respectively. North American companies, after cutting R&D by nearly 4 percent in 2009, increased R&D spending by 10.5 percent in 2010—beating the overall global growth rate of 9.3 percent.
- China and India—and to a lesser extent countries outside of North America, Europe, Japan, and Asia—continued to boom, albeit from a small base. Accounting for 2 percent of global R&D outlays in 2010, Chinese and Indian companies upped R&D investment by more than 38 percent, almost identical to the previous year's growth pace. Companies from other regions around the world boosted R&D spending almost 14 percent.

When it comes to innovation, spending doesn't correlate with success.

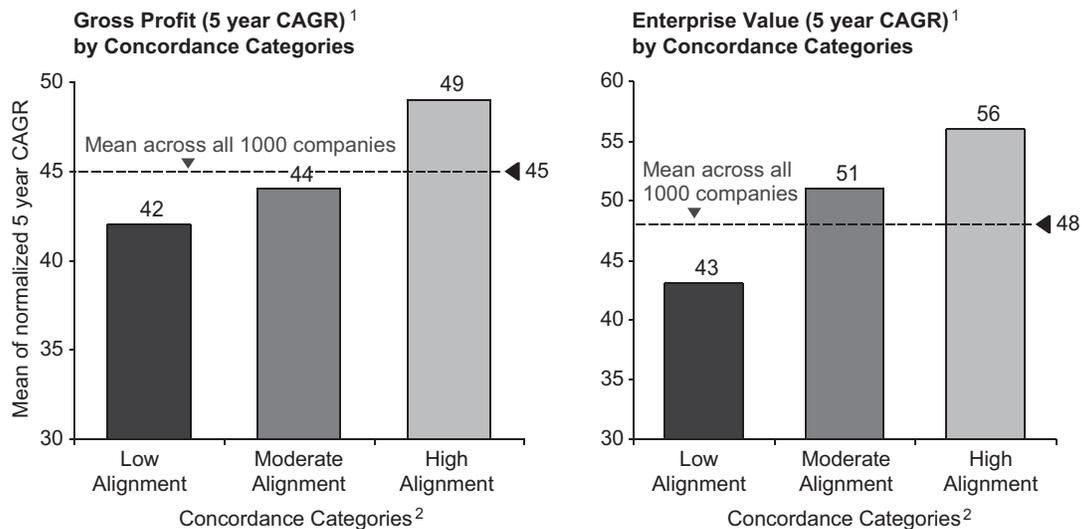
As part of its web-based survey of nearly 600 innovation executives from more than 400 leading companies in every major industry sector, Booz & Company asked innovation leaders to name the companies they considered to be the most innovative in the world. For the second year in a row, Apple led the top 10, followed by Google and 3M. In 2011, Facebook was named one of the world's most innovative companies for the first time, entering the list at number 10. The top 10 most innovative firms outperformed the top 10 R&D spenders across three key financial metrics over a five-year period—revenue growth, EBITDA (earnings before interest, taxes, depreciation and amortization) as a percentage of revenue, and market cap growth. This is consistent with the findings in the previous year's survey. Just three of the top 10 spenders also ranked among the top 10 innovators: Microsoft, Samsung and Toyota Motor.

4 The Need Seeker Approach to Innovation

For the first time, the 2011 Global Innovation 1000 study provided a deeper look into the impact of the intangible factor of corporate culture on the ability of companies to innovate successfully.

The key finding is that culture is key to innovation success, and its impact on performance is measurable.

Companies achieving high alignment on both innovation strategy and culture, enjoy superior financial performance.



¹ Normalized 5 year CAGR for gross profit and enterprise value were considered for analysis

² Concordance measures the statistical correlation of reliability and validity between variables; this analysis was used in this study to control for outlier variation in survey responses for cultural support and strategic alignment.

Source: Booz & Company analysis

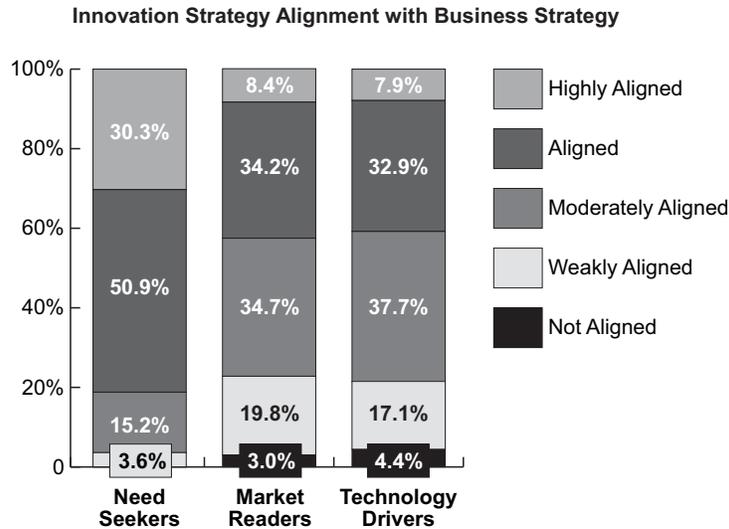
The 44 percent of companies who reported that their innovation strategies are clearly aligned with their business goals—and that their cultures strongly support those innovation goals—delivered 33 percent higher enterprise value growth and 17 percent higher profit growth on five-year measures than those lacking such tight alignment.

The analysis of the survey conducted as part of the Global Innovation 1000 study utilizes three core profiles that characterize a company's approach to incremental versus breakthrough innovation and the role that end customers play in defining future product needs:

- **Need Seekers** adopt a first-mover strategy. They actively and directly engage both current and potential customers to help shape new products and services based on superior end-user understanding. These companies often address unarticulated needs and then work to be first to market with the resulting new products and services.
- **Market Readers** adopt a second-mover strategy. They closely monitor both their customers and competitors, but they maintain a more cautious approach. They focus largely on creating value through incremental innovations to their products and being "fast followers" in the marketplace.
- **Technology Drivers** follow the direction suggested by their technological capabilities, leveraging their sustained investments in R&D to drive both breakthrough innovation and incremental change. They are the least proactive of the three approaches in directly contacting customers. They often seek to solve the unarticulated needs of their customers through leading-edge new technology.

The study found that one profile, Need Seekers, stood out for facilitating the strongest alignment of innovation and business strategies with corporate culture and achieving superior financial performance over time.

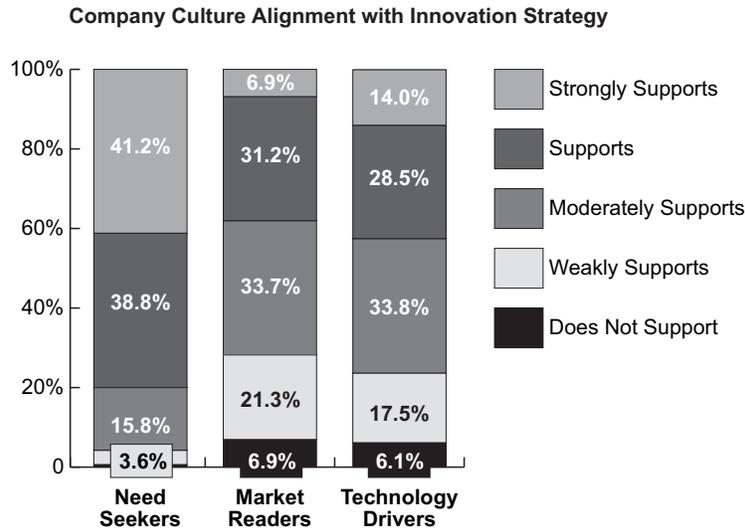
Survey respondents from Need Seeker companies are three times more likely to say that their company’s innovation strategy supports its business strategy.



Source: Booz & Company analysis

The survey respondents from Need Seeker companies were three times more likely than respondents in the average company to report strong alignment of their company’s innovation strategy with its overall corporate strategy. Fred Palensky, executive vice president of research and development and CTO at 3M, a Need Seeker, affirmed, “Our goal is to get the voice of the customer all the way back to the basic research level and the product development level, to make sure our technical people actually see how their technologies work in various market conditions.”

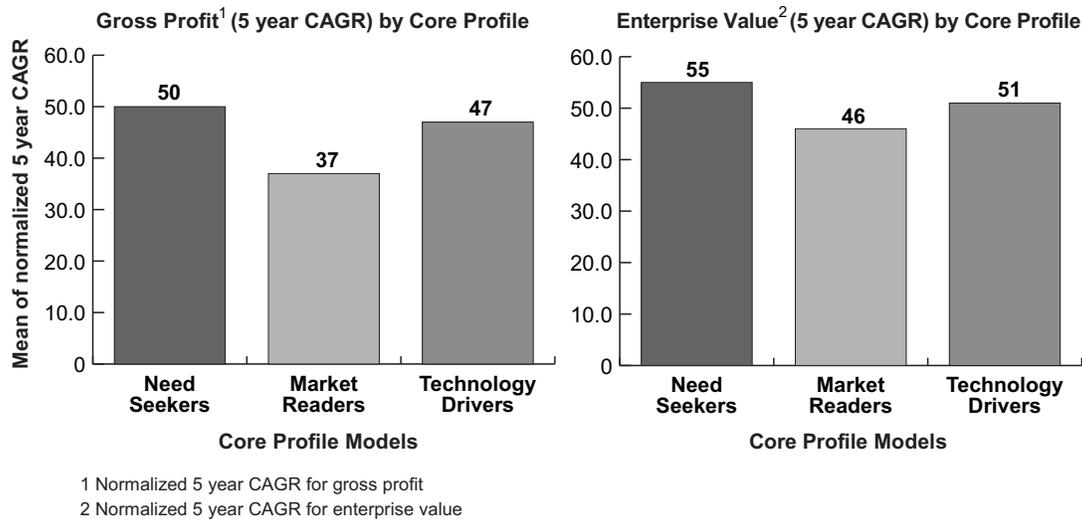
Survey respondents from Need Seeker companies are twice as likely to say their corporate cultures support their company's innovation strategy.



Source: Booz & Company analysis

Over 40 percent of survey respondents from Need Seeker companies say that their company's culture strongly supports its innovation strategy, as compared to 14 percent at Technology Driver companies that stress technology achievement and both incremental and breakthrough change, and just under 7 percent at Market Reader companies that adopt a second-mover strategy and emphasize incremental change.

Need Seekers outperform their peers in both profitability and enterprise value.



Source: Booz & Company analysis

The critical differences in corporate culture and business strategy alignment with innovation strategy help explain why Need Seekers, on average, consistently outperform the other two profiles in terms of long-term profitability and enterprise value. Culture is key, as Agilent CTO Darlene Solomon notes: "There's a very strong innovation culture throughout the company, and a culture of teamwork, and Agilent really encourages that. Innovation is not just R&D here," she says. "We've really tried to make clear that it's about everybody questioning the status quo and looking to do something better than what's been done before."

Companies following the Need Seeker model succeed because of the particular innovation goals and cultural attributes they depend on in their pursuit of innovation. These goals include superior product performance and quality, giving them a distinct advantage in the marketplace; their common cultural attributes involve strong identification with their customers and a true passion for and pride in the products and services they offer. This combination of elements gives them the ability to get to market first with products that address unarticulated customer needs through superior customer understanding.

It is critical to understand, however, that not all companies should therefore aim to follow the Need Seeker model. "You can succeed with any of the three approaches," says John Loehr, a partner at Booz & Company. "For example, Google is a Technology Driver, and Samsung is a Market Reader, and both are winning in their markets. If you properly align your innovation strategy and culture to your business model, build the right capabilities, and execute well, you can prevail no matter which approach you follow."

Still, it's hard to argue with success. As part of the Global Innovation 1000 study, survey respondents were asked to name their picks for top three most innovative companies. From these results, we compiled a list of the top ten most innovative. Of those, 60 percent were Need Seekers, including #1 ranked Apple, the prototypical Need Seeker. By contrast, just two of the top ten spenders on innovation follow a Need Seeker approach—demonstrating once again that innovation prowess isn't a matter of how much money a company spends, but of how it spends it.

5 How the Bay Area Is Different

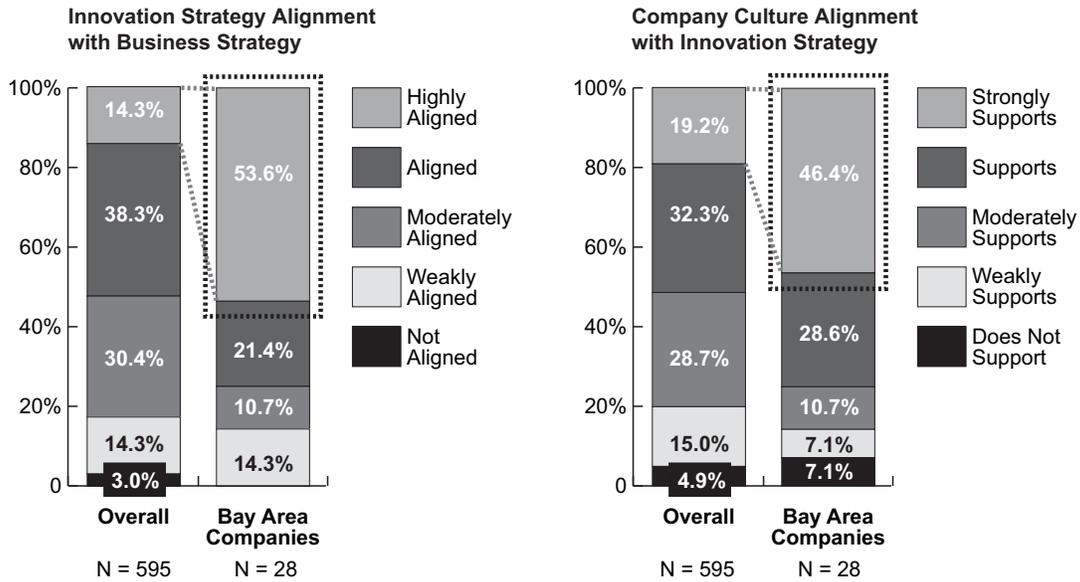
The Bay Area offers many advantages as a place to start and conduct business: a strong educational and research infrastructure, a long tradition of venture capital funding, and an overarching culture that prizes technological talent, innovation, and networking. That, in turn, has led to the creation of many highly successful businesses, first in the high-technology and IT sectors, and more recently in biotechnology, Internet, digital entertainment and clean technologies.

Yet these advantages alone cannot fully explain the region's remarkable ability to create and sustain such innovative companies. The goal of this report is to understand specifically what makes these companies different, through an empirical study of the strategies and cultures that have long allowed them to innovate so consistently and successfully.

Booz & Company's ongoing Global Innovation 1000 study provides a useful empirical baseline for investigating why some companies consistently outperform their peers in the creation of new products and services. In short, the best innovators are those that can combine the right strategies with the right set of capabilities and the right cultural support to provide their customers with the strongly advantaged, differentiated products and services they want. How do Bay Area companies stack up in this regard?

Very well, it turns out.

Bay Area companies reported both stronger alignment on business and innovation strategies and cultural support for innovation strategy.



Source: Bay Area Council Economic Institute, Booz & Company analysis

The survey of Bay Area companies conducted in tandem with Booz & Company’s global innovation survey showed that Bay Area companies report far greater alignment between their innovation strategy and business strategy and much stronger cultural support for that innovation strategy than the average company. As discussed in Chapter 4, the analysis shows that such companies significantly outperform their peers in terms of both profitability and enterprise value.

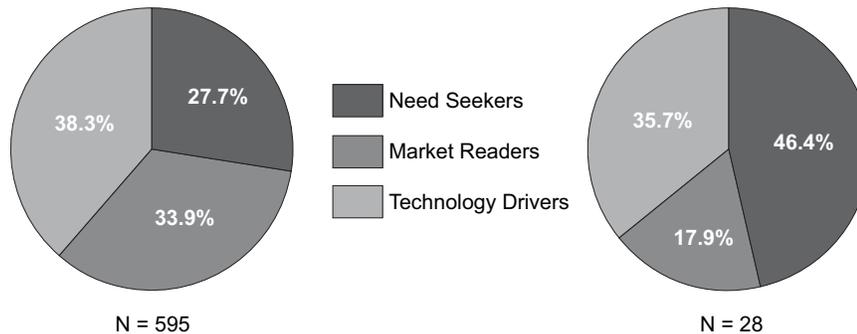
The most recent incarnation of PARC, Xerox’s storied Silicon Valley research facility, is an example. PARC is now a separate division of Xerox, with a mission to innovate not just for the benefit of the parent company, but also for other companies and the government—less than half of its revenues now come from work it does for Xerox. PARC Chief Executive Stephen Hoover says, “Our business is innovation, and the two are highly integrated.” To that end, Hoover works hard to link strategy and culture together so that each supports the other. “One of my focuses today is to have a more integrated and holistic strategy,” he notes, “and to make sure we don’t lose the elements that are great about the culture of innovation, but to add the elements of a culture of accountability for long-term business results. That’s our greatest challenge.”

But it is not just strategic alignment and cultural support that make Bay Area companies stand out. As a rule, these companies follow a Need Seeker approach, which, as noted, has a greater likelihood of success in innovation than either of the other two approaches (Market Readers or Technology Drivers).

Nearly half of Bay Area companies are Need Seekers, compared with less than a third of all companies surveyed in the 2011 Global Innovation 1000 study.

Strategy Distribution – Overall Survey Companies¹

Strategy Distribution – Bay Area HQ Companies²



1 Statistically Derived Strategy Segments
2 Booz & Company Industry Classification

Source: Bay Area Council Economic Institute, Booz & Company analysis

Of the Bay Area companies surveyed, nearly half are Need Seekers, compared with just 28 percent of all companies.

This is a critical finding, for several reasons.

Given the Bay Area’s longstanding tradition of technological expertise and innovation, it would be logical to assume that most of the companies in the region would follow a Technology Driver approach. Yet Need Seekers in the Bay Area outnumber Technology Drivers by a significant margin. Technology Drivers can, of course, be highly successful (Google is the obvious example) but they take a very different approach—one that depends more on technological inspiration. Need Seekers excel not just at technology but also at gaining insights into the needs and desires, both articulated and unarticulated, of their present and future customers.

Prith Banerjee, HP’s executive vice president and director of HP Labs, sees this link between his organization’s research efforts and the company’s customers as critical. “Each year, we bring in more than 500 customers from around the world to HP Labs and we show them the cool technology that

we're working on," he says. "Part of the reason, of course, is to enable HP sales. But we also ask them, 'What are your biggest problems? What do you see?' We actually engage with customers, and listen to the market. That helps drive our research agenda."

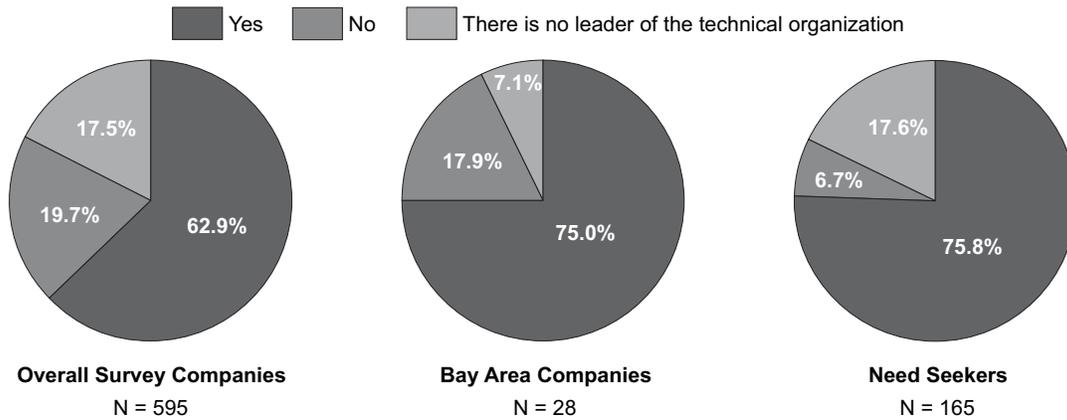
Using this approach, many Bay Area companies are succeeding in two critical areas, customer insight and product development. Apple is the prime example of this: it has succeeded spectacularly at developing an entire series of technologically impressive products and services—the iPod, iPhone, iPad, and the iTunes and the Music and App stores—that uncannily anticipate consumer demand.

Companies following a Need Seeker model depend on three key cultural attributes—a passion for the product, strong identification with the customer, and an openness to ideas from all manner of sources. Indeed, these attributes might, by extension, be said to characterize the overriding culture of the entire Bay Area.

Companies in the Bay Area aren't distinguished solely by their superior strategic alignment or highly innovative cultures. They also stand out in their proficiency along several organizational and operational dimensions.

Bay Area companies have a much higher proportion of their technical leads reporting to the CEO than average companies.

Leader of the Technical Organization Reports to the CEO

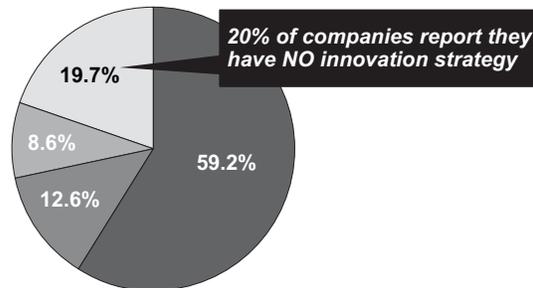


Source: Bay Area Council Economic Institute, Booz & Company analysis

An unusually high proportion of companies in the Bay Area ensure that their top technical executives report to the CEO—75 percent compared with 63 percent at the average company.

Bay Area companies have the highest proportion of their innovation agendas developed and communicated top-down.

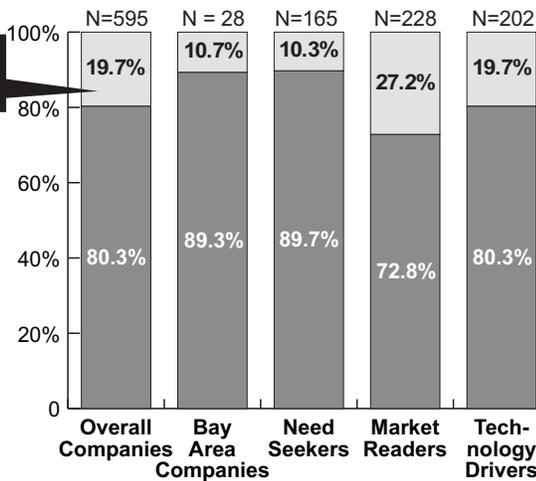
How an Organization's Innovation Strategy Agenda Is Developed and Communicated



Overall Survey Companies
N = 595

- From the senior levels of the organization
- From within the technical organization(s) (e.g. Product Development, Engineering, R&D)
- From within other functional organization(s) (e.g. Marketing, Sales)
- We do not have a clear innovation strategy

Presence of Innovation Strategy



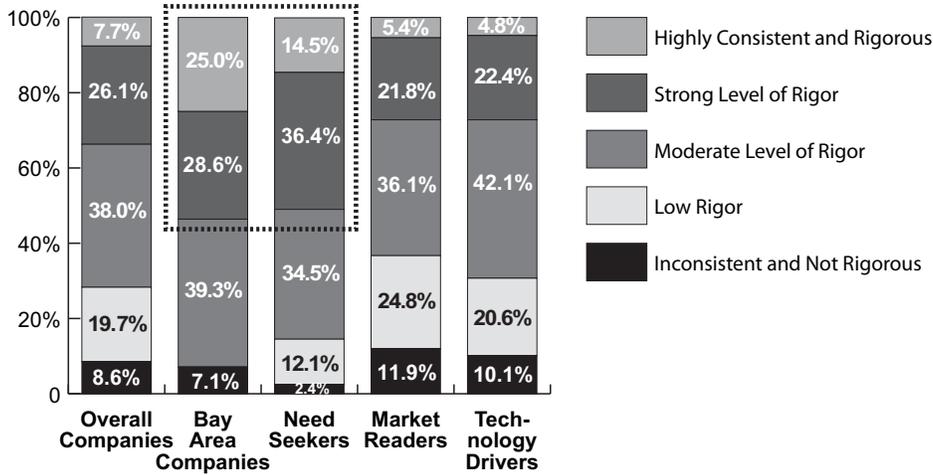
- We do not have a clear innovation strategy
- Innovation strategy present

Source: Bay Area Council Economic Institute, Booz & Company analysis

As a corollary, a higher proportion of Bay Area companies also developed their innovation strategies at the top levels of the companies and communicated those strategies from the top down. This is key to having a coherent innovation strategy that is designed to be in alignment with overall business strategy and is put into practice throughout the company.

A large majority of Bay Area companies gave their new-product portfolio management processes high ratings for consistency and rigor.

Level of Rigor and Consistency in Portfolio Management Process through the Product Life-Cycle

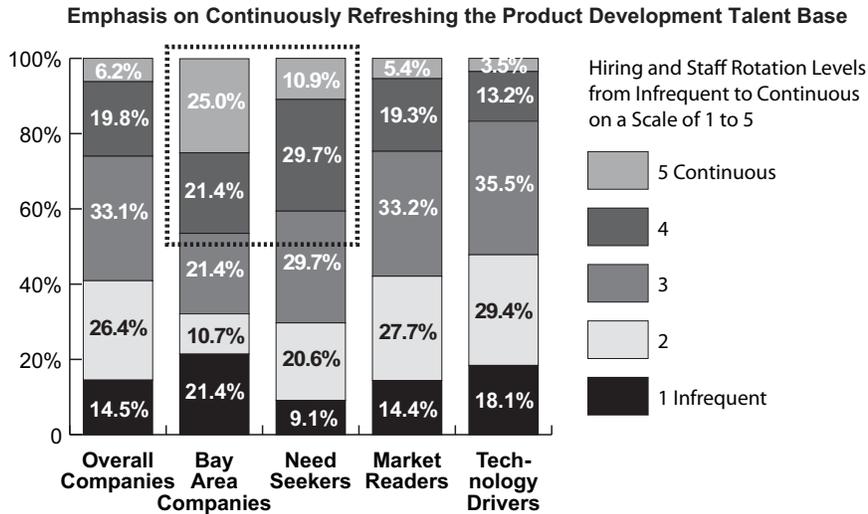


Source: Bay Area Council Economic Institute, Booz & Company analysis.

More than half of executives from Bay Area companies said their new-product portfolio management processes were both consistent and rigorous—well above the number of executives at the average company. This suggests that their top-down efforts to execute their chosen innovation strategy are succeeding, and that their cultures are supporting every aspect of those efforts.

Darlene Solomon, CTO at Agilent Technologies Inc., points out how a change at the top can affect that culture for the better. “Agilent’s roots are certainly in technology. But when William Sullivan took over as CEO in 2005, he made it very clear that we couldn’t just be technology-focused. We needed to be balanced in terms of focusing on the customer and on understanding the market. Since then, he has made sure that we really think about our market focus and customer focus as something that is just as pervasive as technology.”

Most Bay Area companies view continuous refreshment of their product development talent base as a critical advantage.



Source: Bay Area Council Economic Institute, Booz & Company analysis.

Finally, like Need Seekers, Bay Area companies place a high premium on ensuring the constant refreshment of their product development talent—46 percent compared with just 26 percent of average companies. Certainly, their being in the Bay Area helps, given the huge pool of talent they have to pick from. Yet this is also a strategic choice. Just 17 percent of Technology Drivers say they constantly refresh their product development talent, clearly indicating that they prefer the continuity that comes with maintaining a longstanding technical staff.

The relationship between the overall environment of the Bay Area and the companies that have been launched and thrive in the region is highly symbiotic. Large numbers of entrepreneurs are attracted to the region for its intellectual and financial resources. As they start and build their companies, enormous positive network effects come into play, providing them with a constantly refreshed pool of ideas and talent. And the innovative culture needed to grow into international powerhouses appears to be in the very air they breathe.

6 Implications for the Bay Area and Beyond

The interrelated combination of factors that have driven the success of the Bay Area business environment—research, talent, investment, and openness to new ideas—are notoriously hard to replicate. Yet there is much to learn from the strategies, cultures, and practices of the companies located in the Bay Area—both for executives at other firms looking to boost their own innovation efforts and for leaders in other regions hoping to jumpstart new paths to economic development and faster growth.

Certainly, every company needs a clear, specific strategy—one informed by and aligned with customer needs—for how it intends to generate new product ideas, develop them, and bring them to market. And its culture should support its chosen innovation strategy at every stage of its efforts to execute it. The strategy needs to be clearly articulated, and communicated throughout the organization, from the top all the way to the product development teams, the salespeople, and the marketers. The technical community needs to be fully aligned with top management, and technical leaders should report directly to the highest levels of the company. The more tightly a company's innovation strategy, business strategy, and culture are interwoven, the more its innovation efforts will likely translate into superior marketplace results and long-term financial performance.

The larger economic lesson to be learned from the success of the Bay Area experience is that the ability to innovate is a competitive advantage not just for companies but for entire nations. Nurturing and developing innovative companies is a product not just of proximity to excellent universities and government research facilities, modern physical infrastructure, or access to capital, as important as they may be. Just as we have seen in private companies, it stems from a culture that values openness to new ideas, and a networked environment in which ideas and people can flow back and forth, interacting fluidly. And it stems from finding and developing people who themselves understand the value of low barriers to the open exchange of technology and people between universities, government, and business, a premium on entrepreneurship, openness to talent from any source, and rewards commensurate with people's willingness to assume risk. While any one element in isolation can produce positive results in terms of growth and economic development, it is their combination and interaction that is critical to truly competitive innovation and a self-sustaining cycle of economic success.

Resources

Bay Area Council Economic Institute. *Benchmarking the Bay Area's Environment for Entrepreneur-Led Start-Ups*. (October 2011). <http://www.bayareaeconomy.org/key-issues-competitiveness>.

Bay Area Council Economic Institute. *Innovation and Investment: Building Tomorrow's Economy in the Bay Area. Bay Area Economic Profile 2012*. (March 2012). <http://www.bayareaeconomy.org/key-issues-competitiveness>.

Bay Area Science and Innovation Consortium. *Bay Area Innovation Network Roundtable: Identifying Emerging Patterns of the Next Wave of Innovation*. (April 2007). <http://www.bayareaeconomy.org/publications-list>.

Dutta, Soumitra. "The Global Innovation Index 2011: Accelerating Growth and Development." *INSEAD* (2011). <http://www.globalinnovationindex.org/gii>.
A report on the conditions and qualities that allow innovation to thrive and the role innovation can play in a nation's economic and social development.

Jaruzelski, Barry and Kevin Dehoff. "The Global Innovation 1000: How the Top Innovators Keep Winning" *strategy+business* (Winter 2010). <http://www.strategy-business.com>.

The 2011 study showed how highly innovative companies outperform by focusing on critical capabilities and aligning them with their overall business strategy.

Jaruzelski, Barry and Kevin Dehoff. "The Customer Connection: The Global Innovation 1000." *strategy+business* (Winter 2007). <http://www.strategy-business.com>.

This study identified the three distinct innovation strategies: Need Seeker, Market Reader, and Technology Driver.

Kahn, Zia and Jon Katzenbach. "Are You Killing Enough Ideas?" *strategy+business*, (Autumn, 2009). <http://www.strategy-business.com>.

How companies can improve their innovation performance by getting their formal and informal organizations in sync.

Le Merle, Matthew and Jamie Campbell. "Building an External Innovation Capability." (July 2009).

http://www.booz.com/global/home/what_we_think/reports_and_white_papers/ic-display/49635335.

This study describes how to expand a company's innovation capacity through leveraging external sources of innovation.

Leinwand, Paul and Cesare Mainardi. *The Essential Advantage: How to Win with a Capabilities-Driven Strategy*. Harvard Business Review Press, 2011.

Why the most successful firms have a coherence premium—a tight match between their strategic direction and the capabilities that make them unique.

Stross, Randall. "The Auteur vs. the Committee." *New York Times*, July 23, 2011.

Why Apple's leadership structure, with decisions reflecting the sensibility of Steve Jobs, is more conducive to innovation than the conventional approach of companies like Google.



The Bay Area Council Economic Institute is a partnership of business with labor, government, higher education and philanthropy, that works to support the economic vitality and competitiveness of the Bay Area and California. The Association of Bay Area Governments is a founder and key institutional partner. The Economic Institute also supports and manages the Bay Area Science and Innovation Consortium (BASIC), a partnership of Northern California's leading scientific research universities and federal and private research laboratories. Through its economic and policy research and its many partnerships, the Economic Institute addresses key issues impacting the competitiveness, economic development and quality of life of the region and the state, including infrastructure, globalization, science and innovation, energy, and governance. A public-private Board of Trustees oversees the development of its products and initiatives.

booz&co.

Booz & Company is a leading global management consulting firm, helping the world's top businesses, governments, and organizations. Founder Edwin Booz defined the profession when he established the first management consulting firm in 1914. Today, with more than 3,500 people in 61 offices around the world, Booz & Company brings foresight and knowledge, deep functional expertise, and a practical approach to building capabilities and delivering real impact. Booz & Company works closely with our clients to create and deliver essential advantage. The independent White Space report ranked Booz & Company #1 among consulting firms for "the best thought leadership" in 2011. Visit www.booz.com to learn more about Booz & Company and www.strategy-business.com for its management magazine, *strategy+business*.



201 California Street, Suite 1450
San Francisco, California 94111
P 415.981.7117 F 415.981.6408
www.bayareaeconomy.org
bacei@bayareacouncil.org