

At the core of communications:

An interview with Broadcom's Scott McGregor

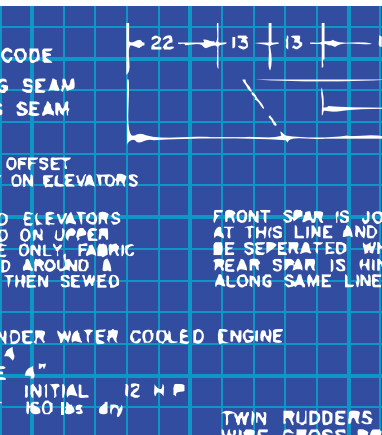
Scott McGregor, president and CEO of Broadcom, talks about the roles that M&A and talent management play in shaping the strategy-development process. He also discusses his vision for the future of the semiconductor industry and Broadcom.

Rajat Mishra and Nick Santhanam

Broadcom is the world's largest fabless semiconductor company. It offers the broadest range of system-on-a-chip (SOC) and software solutions in the industry and in just more than 20 years of existence, it has grown to be one of the top ten semiconductor companies in the world, as measured by revenues. The core of its portfolio is communications products, ranging from the guts of cable set-top boxes to femtocells, from cellular baseband chips to GPS processors and radio-frequency identification chips. Broadcom's offerings can also be found in corporate data centers and in cloud infrastructure. The company's intellectual property and product portfolio has attracted as customers some of the world's biggest names in computing and consumer electronics.

Broadcom's strategy has greatly contributed to the development of its impressive technology portfolio. Over the years, it has acquired nearly 50 companies, expanding its market footprint while soaking up technical expertise and innovative products along the way.

But as industry growth rates slow and the number of semiconductor start-ups dwindles, there are plenty of challenges that Broadcom's seasoned management team will face in the years ahead. McKinsey's Rajat Mishra and Nick Santhanam sat down with the CEO and president of Broadcom, Scott McGregor, to discuss the roles that strategy development and talent management play in today's business environment.



McKinsey on Semiconductors: *Let's start with a discussion of how you think about corporate strategy at Broadcom.*

Scott McGregor: We have a one-page corporate strategy at Broadcom. It helps us articulate what we are doing as a company, and it includes our goals, our competencies, and key metrics.

The philosophy at Broadcom is that everyone should have a voice in the company. We post the one-pager on the company's intranet and everyone in the company can comment on it. And we do get all sorts of suggestions—ranging from text edits to major shifts in company strategy. This level of participation gets everyone involved in the strategy-development process, and the finished strategy gets embedded deeply in the company's culture. The result isn't something a competitor can just copy—it's custom tailored to work well for Broadcom. At the same time, one must remember it is not a democracy. I hold the final pen when it comes to corporate strategy.

After the corporate strategy one-pager is finished, the individual business units use it to build their own one-pagers, and that is how the strategy gets percolated down through the organization.

McKinsey on Semiconductors: *Given all the groups providing input, from frontline employees to executive staff, how do you balance long-term vision with the strategy being actionable for the front line?*

Scott McGregor: The test is this: the one-pager should be useful in the boardroom and in small groups. We have lots of debates on how specific should it be. We have certain financial

goals that help there. For example, we have specific targets such as 20 to 22 percent operating income and a 50 to 52 percent gross margin. At the end of the day, the metrics we set become the core of our corporate annual bonus plan, which means that execution becomes an even greater responsibility.

McKinsey on Semiconductors: *Mergers and acquisitions seem to be a big part of your strategy. Furthermore, the company has been successful in this area. Can you say a few things about how Broadcom views and approaches M&A?*

Scott McGregor: We decided to build M&A as a core competency at Broadcom. It is not about how big the M&A team is; it is more about ownership and accountability in the M&A function. At Broadcom, I would say about two-thirds of the acquisitions we've done have created value. About 15 to 20 percent have been a push, financially, and the rest have destroyed value. That's a better track record than almost anyone else we're aware of, but it underscores the point that M&A isn't risk free.

McKinsey on Semiconductors: *That is a pretty good record for M&A in general and for the semiconductor industry in particular. How does Broadcom go about M&A?*

Scott McGregor: One of the things we do is to integrate rapidly. The day the deal is done, we parachute in. We almost always replace the old IT system with a new one. It takes too much time and energy in the long run to migrate IT, so we just replace it. We also move quickly on things like signage and accounting. And we put a lot of energy into welcoming the people of the acquired company to Broadcom.

Most of our deals focus on early-revenue companies that are too mature for the venture-capital model. We focus on three questions when we look at potential targets. Are they accretive to growth? Is the team high quality, with a similar approach to engineering, innovation, and culture? And are the financials sound?

McKinsey on Semiconductors: *As the number of start-ups has been declining in the industry, don't you find this stance increasingly difficult?*

Scott McGregor: I agree that the number of companies has been decreasing as the costs to get them up and running have rapidly increased. But this is more of a phenomenon in the United States, as start-ups in the rest of the world have increased. So, the start-up decline is not broad based. And good talent is always around. For us, acquisitions are a way of acquiring talent.

McKinsey on Semiconductors: *Can you give us an example of how you thought through, and acted upon, an acquisition?*

Scott McGregor: Well, long ago we realized that GPS would be an important growth space to get into for various reasons. So we started looking at a number of start-ups in this space, internationally. In parallel, we started our own GPS

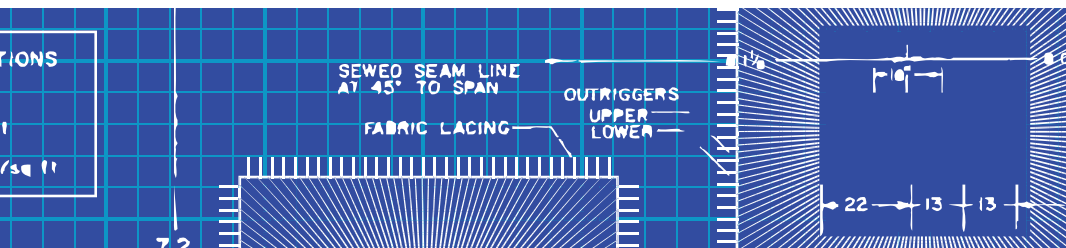
group within Broadcom, the rationale being that we wanted to know what we were getting into; we also wanted to be able to test the start-ups when it came time for evaluation.

We did not go with the industry leader. When we looked at its business plan, we saw that the company had faulty assumptions on average-selling-price trends, which led to unrealistic revenue targets and hence unrealistic valuation. After our search, we acquired Global Locate. It was not the largest or most successful start-up around, but we felt it had the best technology, the best team, and a robust and realistic business plan, in comparison with others. We acquired it, and as you know, GPS is integrated into our chips and we're now a leader in the space.

McKinsey on Semiconductors: *Do you think other semiconductor companies will do more M&A in the future?*

Scott McGregor: Either you have M&A in your DNA or you don't. I think most companies make few bids because if one doesn't work out, it creates a sense of hesitation to do another one, and yet that's the only way to build M&A capability.

We pick some of our best people to run M&A projects. We also look for people who have done it



If we find talented individuals, we help them do what they are good at and customize the role for them.

before. In fact, the talent of our teams eventually makes a lot of these bids successful.

McKinsey on Semiconductors: *This is a good segue into the talent discussion. Talent has been a thorny issue in the semiconductor industry lately. Can you tell us about the talent-management system at Broadcom?*

Scott McGregor: We have a 4 to 6 percent attrition rate at Broadcom. And, of the acquired companies, roughly 85 percent of the talent has been retained over the last five years.

On the M&A side, we find people that fit with our culture and give them important roles. If we don't think there is a fit, we don't pick them up. With acquired start-ups, we give them the incremental resources they need to be successful. We also give them access to our intellectual property. Broadcom is an "R&D candy store" for the companies we acquire.

We give engineers all the tools they need, but then we hold them accountable. There is a lot of false economics when it comes to cost cutting for engineers. I believe we need to give them the best equipment and resources and then hold them accountable. A few years ago, we hired consultants to tell us how to reduce our sales, general, and administrative expenses, and all

they could tell us was that we needed to buy cheaper laptops for our engineers. I am not going to save a few hundred dollars (at best) and let my engineers wait five minutes every time they need to turn the computer on.

One way to think of Broadcom is that on the continuum of military regime to artists' colony we are more on the artists' colony side. More freedom, fewer rules. We tend to create jobs around individuals. If we find talented individuals, we help them do what they are good at and customize the role for them. The downside is that Broadcom can be a hard-to-navigate organization, and if you don't know people, it is tough to get things done. One of the things I tell new employees is get to know the organization, get to know the people, and create your own network.

McKinsey on Semiconductors: *Building on the people theme, how do you measure and reward employees at Broadcom?*

Scott McGregor: Alpha is a big part of our bonus plan. Our target alpha is 35 percent more or faster than the overall market-growth rates. So, we have to go faster than our peers in order to get rewarded. It does not matter how fast or slow the market grows—our metric is relative. If the market grows at 10 percent, our target is at least 13.5 percent.

The coming war for talent in semiconductors

Aaron Aboagye,
Rajat Mishra, and
Mohan Rajagopalan

Research and development is the lifeblood of the semiconductor industry. R&D spending as a percentage of overall industry revenue has grown significantly, from 8 percent at the 1971 debut of the Intel 4004 microprocessor, through the bursting of the Internet bubble in 2001–02, to reach 16 percent today. The increase in the productivity and capabilities of semiconductor chips, measured by transistor count, has been noteworthy. The number of transistors in a DRAM chip has risen 45 percent a year since the mid-1970s; Intel's microprocessors increased 40 percent a year over the same period, and those on flash chips rose at a 74 percent rate. A deep well of engineering talent has made these achievements possible. However, in 2012, the pool of available semiconductor talent is shrinking.

We believe that the competition for talent will intensify in the coming years, yet most semiconductor companies seem ill prepared for that battle. And the vicious development cycles in the industry leave little time for optimizing talent management. Furthermore, skill in talent management correlates strongly with the overall performance of a company (exhibit), so executives will need to explore strategies that cover all aspects of talent management, from attraction and utilization to motivation and cultivation of the workforce.

As we see it, there are three major challenges that cloud the talent picture for semiconductor companies. First, the industry offers limited “step-out” innovation, focusing instead on incremental improvements to products and services. Next, the industry's growth rate is slowing as the market for semiconductors matures. And last, the supply of incoming semiconductor workers is insufficient, leading to a battle for finite talent resources. These three factors together create a perfect storm for semiconductor companies.

To start, most recent innovations in the semiconductor sector have been incremental. They involve upgrading products, adding new features, or enhancing end-user experiences

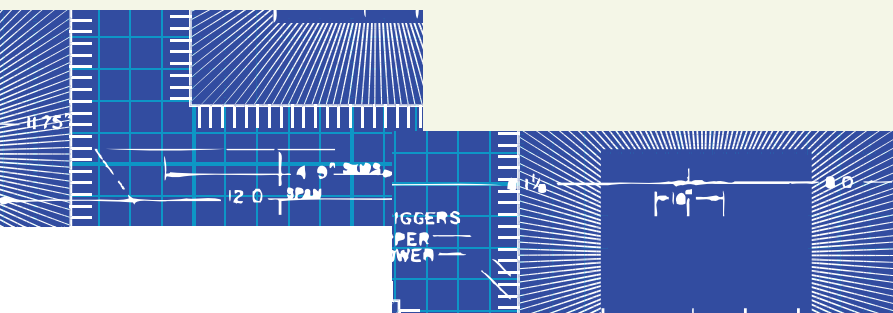
rather than developing breakthroughs in, say, process technology. The most highly funded semiconductor start-up since 2000, INSIDE Secure, for instance, has developed a range of contact and contactless chips, near-field-communications chips, and reader solutions—all based on open standards. The second most highly funded start-up was Tabula, which makes 3-D programmable logic devices. These are cheaper, smaller, and a bit faster than existing field-programmable-gate-array chips, but they are still an incremental improvement. As a result, fewer engineering graduates are looking to work for major semiconductor companies.

To complicate matters, the compound annual growth rate of the semiconductor industry is slowing and beginning to mirror GDP growth rates. The industry's annual growth rate was 7 percent in the 2000s, and it is expected to average 5 to 6 percent a year in the current decade. That's significantly slower than the 13 percent annual growth rate the industry enjoyed in the 1990s.

Venture-capital funding for semiconductor start-ups is slowing as well. The number of semiconductor investments as a share of overall venture-capital activity fell to 1.7 percent in 2009 from 4.8 percent in 2004. A total of 48 semiconductor start-up investments were made in 2009, compared with 151 in 2005. With regard to public offerings, the deal value of semiconductor-company IPOs in comparison with the broader IPO pool has fallen by 12 percent each year since 2003.

Making matters worse, the number of graduates who pursue degrees in electrical engineering has been shrinking at a rate of roughly 7 percent a year since 2005. They made up only 0.73 percent of graduates in 2009, whereas they accounted for 0.99 percent four years earlier.

Of those who do graduate with relevant skills, fewer are choosing to work for semiconductor companies. Social-media and other Web 2.0 companies—such as Facebook,

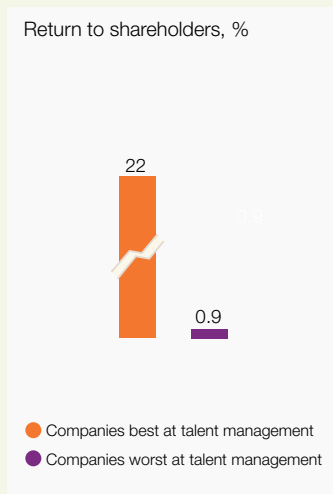


Exhibit

Across industries, talent is a key driver of performance.

- Bottom-quartile companies (revenue, n = 494 appraisals)
- Top-quartile companies (revenue, n = 343 appraisals)

Talent management correlates with performance



Talent in top-performing companies scored higher in all competencies



Source: Global-forces executive opinion survey, 2005; next-generation talent research, 2006

Twitter, and Zynga—attract top engineering talent the way Google and Yahoo! did years ago. The shift can also be seen in *Fortune* magazine's "100 Best Companies to Work For" list. The number of semiconductor companies in that ranking went from eight in 2004 to just three in 2010.

But industry players can use an enhanced talent strategy to expand the search for talent and to extend the tenure of the engineers they do attract. Companies that look after the lifestyle and the longevity of their engineers will find themselves better placed to win in the competitive years ahead.

The shortage of engineering talent will remain a cloud on the semiconductor industry's horizon for the foreseeable future.

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Scott McGregor



Vital statistics

Married, with 3 children
Lives in Orange County,
California

Education

Graduated from Stanford
University with a BA in
psychology and an MS
in computer science and
computer engineering

Career highlights

Broadcom

(2005–present)
CEO

Philips

Semiconductors

(1998–2004)
Served as president and
CEO after joining Philips
as head of its emerging-
business unit

Microsoft

(1983–85)
Led the original
Microsoft Windows group

Xerox PARC

(1977–83)
Worked on research
programs

Fast facts

Is responsible for guiding
the vision and direction for
Broadcom's growth strategy

Enjoys electric cars and
drives a Tesla

People sometimes ask me to forecast the market. But it is impossible to do. My view is, no matter what, we will grow at least 35 percent more or higher than the market. And when that happens, we gain share, even if the overall market is slowing down.

McKinsey on Semiconductors: *Let's talk about the semiconductor industry a little bit. There are smaller players with valuations in the \$1 billion to \$2 billion range, and then there are Intel and the others. How do you view these different parts of the industry?*

Scott McGregor: I feel that companies in the \$1 billion to \$2 billion range are stuck. There is an R&D arms race in semiconductors, and the smaller

companies chronically underinvest in R&D. There is a game of Pac-Man under way in the industry. As companies gobble up niches on the socket where you play, you might just disappear.

As for Intel, I don't think people will overvalue processor speed in the future. People will buy SOCs. The processor is good enough now, and having the best of one piece is not enough anymore. The processor of tomorrow will be just a component, like a resistor or capacitor of today.

McKinsey on Semiconductors: *Where do you expect growth for the industry to come from?*

Scott McGregor: I am bullish about the industry and think value capture will increase. As the

industry consolidates, it will rise from its current flatline performance.

Software will be one of the vectors of growth. It will no longer be given away for free, or as a percent of the silicon's price, as the bill of materials grows. Software is one thing that will bring value to the industry. I also think the industry will move to charging for value. Switching costs for our customers are increasing, and the industry should use this trend to capture a bigger portion of value.

McKinsey on Semiconductors: *Let's talk about your personal aspirations and the things that keep you up at night.*

Scott McGregor: I am not happy with our shareholder returns, and I think we have

pumped a lot more dollars into the long run and areas that have yet to come to market, rather than having a short-term focus on earnings. I think we will outpace the market and grow, and Wall Street will eventually recognize that.

Five years from now, I would like to see Broadcom recognized as the clear leader in both wired and wireless communications. We are in the business of encoding, transmitting, and decoding data, and that translates into both wired and wireless.

It is a privilege to work at Broadcom. I think a lot of technologies—for example, locational intelligence and user interfaces—are still in their infancy. And I look forward to the future with excitement.○

