

## Reshaping Cisco

# The world according to Chambers

**Cisco's chairman and chief executive is stretching his company in all directions. Can it hold together?**

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JOHN CHAMBERS no longer travels much. That is not for want of energy, of which the boss of Cisco Systems has plenty. It is because he is a proud and enthusiastic user of his own company's technology. Since 2006 Cisco has been selling a system called TelePresence (pictured above, with Mr Chambers holding forth), which turns awkward videoconferences into pretty lifelike encounters. He pulls all-nighters to talk to customers and colleagues in Europe and Asia.



Cisco

Meet Mr Chambers in the flesh, and the small talk lasts for about five seconds, until he asks: “What do you expect from this conversation?” If he seems to have no time to waste, no wonder. He does not only have a huge company to run, but he is also reshaping it.

During the dotcom boom Cisco was hailed as the leading light of the “new economy”, being the supplier of most of the gear guiding data

through the internet. In early 2000, when its market capitalisation peaked at nearly \$550 billion, it was briefly the world's most valuable company. But a year later, like other technology giants, it was hit by what Mr Chambers calls the “hundred-year flood”. Cisco did not drown, but much of its stockmarket value was swept away (see chart 1). Since then it has been regarded for the most part as a lowly network plumber: necessary, but dull.

The company has not been immune from the world's latest bout of economic troubles. In the quarter that ended in July its profit, \$1.1 billion, was 45% lower than a year before. But Cisco, which had revenues of \$36 billion in its latest financial year and employs more than 66,000 people, has been making headlines again for different reasons as well. “Cisco plans big push into server market,” read one in January. Another, in March, declared: “Cisco pushes further into consumer territory.” More recently a third said: “Cisco: smart grid will eclipse the size of internet.”



In other words, the plumber is branching out. As well as making these unexpected forays away from selling network gear, Cisco is exploring other sidelines. From “virtual health care” to “cloud computing” and “safety and security” to “routers in space”, the company is tackling more than 30 “market adjacencies”, as new areas of growth are called in the corporate argot. Mr Chambers expects to keep adding more. He hopes that at least half will be successful and generate 25% of Cisco's revenues within five to ten years.

Some on Wall Street worry that Mr Chambers, who has been Cisco's boss for 14 years, is stretching his company so thinly that it could be ripped apart. Mr Chambers, not surprisingly, sees the expansion, seemingly in all directions at once, differently: as a bold attempt to

achieve two things. He wants Cisco to become the main supplier of the essential elements of an increasingly connected economy, and to be a shining corporate example of how to use them. It should provide not only the tools of the company of the future, but also its organisational model.

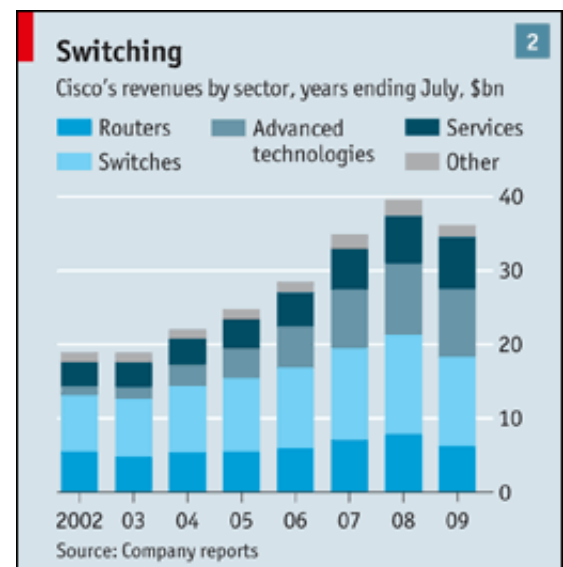
Even at the height of the dotcom boom, people had only the vaguest grasp of Cisco's business. Its physical incarnation was easy to picture: hardware such as routers and switches, which direct traffic through a network. But Cisco also made a lot of money from services, for instance by helping customers to maintain those networks. It was always a software firm as well, providing the dominating operating system for internet-type corporate networks. This mixture goes a long way towards Cisco's dominance in the networking market and its high gross margins (64% in the most recent quarter): firms have continued buying Cisco gear not least because it works best with IOS (originally Internetwork Operating System), as the software is called.

Cisco also has a record of being willing to reorganise itself. It was an early outsourcer of manufacturing, for instance. Many of its products are never touched by a Cisco employee, but built by a contract manufacturer, tested remotely and then shipped directly to the customer. Cisco was also one of the first big IT companies to let others do much of its R&D. To plug holes in its product portfolio or react to market demand, it bought dozens of other networking firms and perfected the difficult process of integrating them.

The once-a-century flood, however, did not just wash away nearly a third of Cisco's revenues in a single quarter. It also laid bare the limits of the firm's business model. Its core markets, routing and switching, had matured: they would never again boast the annual average growth rates of more than 50% that drove Cisco's revenues from \$1.2 billion in 1994 to \$18.9 billion in 2002. The firm was also running up against the law of large numbers, which makes it more difficult for big companies to grow rapidly. And however efficient the supply chain, networking gear is bound to become a commodity eventually.

The obvious remedy was to move quickly into new businesses promising more value. Some companies would have begun gently, with one or two; Cisco went for half a dozen, including optical networks, wireless equipment and internet telephony. Today these “advanced technologies”, as they are called internally, bring in 25% of Cisco's revenues (see chart 2). This branching out has been institutionalised and expanded. Hence the 30 market adjacencies.

These are best seen as a portfolio of business bets, much like those of diversified companies such as 3M and General Electric (GE). Yet Mr Chambers is keen to point out how Cisco's collection is different. “GE's is comprised of individual pieces. The light-bulb group doesn't tie into the jet-engine group,” he explains. “Our pieces are all tied to the network.”



This gives Cisco a huge and growing field to play on. The world is getting more and more connected. Sensors and chips, for instance, are being embedded in everything from cars to appliances, pipelines and even livestock. But there is a clear danger with such a grand vision, of rushing into anything and everything. So Cisco feeds putative projects through a series of filters. Is this something customers want Cisco to do? Is the opportunity big enough and does it create demand for Cisco's hardware? Can Cisco offer something that is really different and become number one or two in this market?

Just as important is the question of whether a new project fits in with the way Cisco sees the network, be it within a company or at home: as a platform for all kinds of applications. “Their long-term strategy is essentially to become the Microsoft of the internet,” says Richard Windsor, an analyst at Nomura International, an investment bank. Just like the vendor of Windows, Cisco has a family of interlinked operating

systems and platforms. In much the same way as IOS, these are supposed to drive demand for Cisco gear and make the firm a dominant force in new markets. Many of Cisco's moves are thus about building beachheads for platforms, says James Staten of Forrester Research, a firm of consultants.

Another way of looking at Cisco's stretching exercises is what Jeff Evenson, an analyst at Bernstein Research, calls “application-specific networking”. The firm is betting that it can make a lot of money by combining networking gear with software and hardware specific to an industry, for instance electric utilities. “Cisco wants to offer similar services to IBM and HP—but with fewer people,” says Mr Evenson.

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The prime example of all this is video, which Cisco believes will in the long run account for a lot of communication among both businesses and individuals. The company estimates that the amount of internet traffic accounted for by video communication will increase tenfold by 2013, twice as fast as traffic overall. This deluge of data can only be managed with more and bigger routers and switches, such as Cisco's Nexus 7000, which can handle 15 trillion bits, the equivalent of 1,350 feature-length films, every second.

To get an even bigger slice of the video pie, Cisco developed TelePresence, the first unit of which was sold in December 2006. It combines big, high-definition screens, spatially sensitive microphones, custom video-processing technology and networking equipment. What is more, setting up a TelePresence meeting is as easy as making a telephone call. Facilitators are no longer needed.

Cisco intends to push TelePresence into the home. This is the main reason why it bought Scientific Atlanta, a maker of set-top boxes, for \$6.9 billion and, more recently, spent \$590m on Pure Digital Technologies, maker of Flip, a range of hand-held camcorders. TelePresence at home will soon be combined with another project: sports

and entertainment. The firm intends to turn stadiums into multimedia temples—and eventually to pump the match-day experience into living-rooms. Mr Chambers hopes one day to watch North Carolina against Duke, archrivals in American college basketball, with his sister while they are linked by TelePresence.

Such scenarios will be possible only because all Cisco's video products are based on the same platform, called Medianet, says Tony Bates, one of the executives overseeing the firm's video strategy. Thanks to Medianet, for instance, the network can reformat a video so that pictures taken by a small camera can be seen in high definition on a computer or television screen. This, says Mr Bates, will happen in real time. “You could take your Flip camera and stream that directly to a friend's TV.”

Cisco's other market adjacencies can be analysed in the same way. Another big one is consumer electronics, perhaps the most surprising new territory. Here too, Cisco can add a lot of value, says Ned Hooper, who heads the firm's consumer group. More and more devices come with a connection to the internet, but their content—pictures, videos, music—is mostly still tied to one device, he argues. Cisco's new digital stereo system, for instance, allows music to move wirelessly around the home. Again, Cisco's consumer products have a common platform.

In the case of servers, souped-up computers that dish up data, the market shift Cisco intends to ride is virtualisation. In essence this means that the servers in a data centre are turned into a pool of computing power to be tapped into as needed rather than being used individually. Virtualisation creates a lot of complexity, to which Cisco has found an answer, says Robert Lloyd, who heads the group that has developed what Cisco calls the “unified computing system”. Its parts—servers, storage disks, memory—are held together and managed by a powerful switch running Nx-OS, one of Cisco's operating systems.

Finally, with its “smart grid” initiative, Cisco wants to repeat for electrical power grids what it has done for corporate networks: unify the ways in which the parts of the grid talk to each other and then add

intelligence. Home appliances, meters, transformers and generators could all share data and work together to make the power grid more efficient, for example by lowering the peak load.

For all the energy Cisco is devoting to seeking new markets, the changes it is making to its institutional structure are equally important. Whether they turn out well or badly, they are likely to be instructive to other companies too.

Cisco has already altered its organisational structure once, after the dotcom bubble burst. The firm had been comprised of three lines of businesses: gear for telecom operators, large enterprises and smaller businesses. This had become wasteful: the lines of business duplicated a lot of work, for instance by developing similar routers. Having to cut costs, Cisco centralised the functions of each line. Employees were no longer mainly organised around customer segments but on functional principles: engineering, manufacturing, marketing and so forth.

A functional structure is more efficient, but it also has big drawbacks. It often leads organisations to be too cost-conscious, to create standardised products and to ignore the needs of different types of customer. Co-operation between functions can be limited. To overcome these flaws, explains Jay Galbraith, a noted management consultant, most big companies move back and forth between a decentralised organisation along lines of business and a centralised functional structure.

### **The plumber's new pipework**

Cisco took a different tack. Instead of going back to a structure based on lines of business, it has developed an elaborate system of committees made up of managers from different functions. The job of most of these groups is to tackle new markets. “Councils” are in charge of markets that could reach \$10 billion. For “boards” the number is \$1 billion. Both are supported by “working groups”, which are created as needed. There are about 50 boards and councils, with some 750 members. Cisco has given up counting the working groups, because they come and go so quickly.

Such attempts to combine a functional structure with cross-functional groups, called a “matrix”, have mostly failed, says Mr Galbraith, who recently published a book on matrix organisations. They often produce gridlock: managers representing the functions and those having an eye on markets cannot agree. But Cisco seems to have avoided such blockages.

For one, the firm developed what Mr Galbraith calls a “culture of collaboration” from the top down. Mr Chambers cultivates a co-operative management style. Some councils do without a formal leader and function more like a sports team. Many managers have leading roles both in a function and on a council or board, which fosters co-operation. How well managers do in teams determines 30% of their bonuses. There have been casualties: whereas those who work well with others have been promoted, lone fighters have been pushed out. As a result, a fifth of Cisco's leadership has left the company.

Second, Cisco has given itself a kind of constitution. There are “replicable processes”—jargon for rules covering how the groups are set up, how their work is evaluated and how decisions are taken. There is also a “common language” in which groups must describe their work. Each has to come up with a statement that includes a five-year vision, a two-year strategy and a ten-point execution plan. This not only imposes discipline but also makes decisions transparent.

Third, the firm—to borrow a choice Silicon Valley expression—eats a lot of its own dog food: digital tools that allow cheap and efficient communication. These include wikis, social networking and web-based collaboration services, of course. But the most important tool is TelePresence, so that nuances such as body language and tone of voice, essential ingredients of face-to-face meetings, are no longer lost. The number of TelePresence meetings at Cisco averages 5,500 a week. This has also helped the firm to cut its annual travel budget by \$290m, or more than half.

“It has taken us seven years, but now it is a machine,” says Mr Chambers. What could still go wrong? “Lots of things.” One of his main



worries is that Cisco does not have sufficiently replicable processes in place to keep things on track. What about the seemingly clear risk that the company could spread itself too thinly? “My gut-feel is actually that I’m not spreading us thin enough,” Mr Chambers says. If people have “aggressive stretch goals”, he believes, they will think more broadly.

Outsiders, however, do fret that Cisco may stretch itself too far. Its internal workings could get too complex, argues Mr Galbraith, and the firm could suffer from matrix migraine after all. The structure, he says, is still a work in progress; Cisco still has to work out, for instance, how best to assemble and disassemble teams. What is more, the set-up may make the company move too far from its origins as a network plumber. A case in point, some say, is Cisco's line of consumer products, whose creators clearly were engineers, not designers. To make them successful, the firm may have to create a separate line of business.



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Even if the system works as billed, it has been costly in one important respect: the loss of many talented people. And with all those groups and endless meetings, burnout is still a real danger, points out Geoffrey Moore of TCG Advisors, a management consultancy that has worked with Cisco. Senior executives are members of three to five groups on average and some of many more. This is on top of the regular job and means TelePresence meetings at all hours.

Why then has Cisco's boss taken his company into uncharted organisational waters? For one, because he believes he has no choice. It is not just that Cisco needs a structure that can help the firm to react quickly to new opportunities. The matrix also makes it much easier to come up with entire solutions rather than stand-alone products. This is what many customers, particularly governments, now demand. And the structure helps Cisco to become a globally integrated company by

making it easier for executives from all around the world to weigh in.

At the same time, implementing such an unusual structure is a huge opportunity. It allows the firm to be a showcase for its own products. Some think it could even become a model for the corporation of the future. Rosabeth Moss Kanter, a professor at Harvard Business School, regards Cisco as an example of a “supercorp”, a coinage that is also the title of her new book. It has avoided the fate of many other companies as they grow: becoming a lumbering and bloated giant. Tom Malone, a professor at the MIT Sloan School of Management, sees Cisco as a pioneer for a larger trend. Traditionally, he says, management was about “command and control”. Now, as technology makes communication much cheaper, bosses should move to a more flexible view, best described as “co-ordinate and cultivate”.

Given its track record with other institutional innovations such as acquisitions and outsourcing, Cisco has a good chance of coming to exemplify a new world of “co-ordinate and cultivate” in the same way that GE stood for “command and control”. If this does not come to pass, it will not have been for want of ambition. After all, Mr Chambers's goal, as he recently put it, is nothing less than for Cisco to become “the best company in the world”.

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