AFTER MANY YEARS of poor performance and mounting losses, Chrysler, the number three U.S. carmaker, has been experiencing a turnaround in the 1990s. Its new car models such as the Dodge Viper, the Stratus, and the cab-forward LH cars have been attracting many customers back to the company and away from Japanese imports. The company's profits and stock price have surged upward as a result. How has Chrysler achieved this turnaround? Chrysler's top management attributes its success to its new product-team structure, which uses cross-functional teams.

Like other U.S. car companies, Chrysler used to have a functional approach to designing and producing its cars. In the functional approach, the responsibility for the design of a new car was allocated to many different design departments, each of which was responsible for the design of one component, such as the engine or the body. Managers further up the hierarchy were responsible for coordinating the activities of the different design departments in order to ensure that the components were compatible with one another. Top managers were also responsible for coordinating the activities of support functions, such as purchasing, marketing, and accounting, with the design process as their contributions were needed. When the design process was finished, the new car was then turned over to the manufacturing department, which decided how best to produce it.

Chrysler's functional approach slowed down the product-development process and made cross-functional communication difficult and slow. Each function pursued its activities in isolation from other functions, and it was left to top management to provide the integration necessary to coordinate functional activities. As a result, it took Chrysler an average of five years to bring a new car to market, a figure that was well behind the record of the Japanese, who took two to three years. Chrysler's structure was raising its costs, slowing innovation, and making the company less responsive to the needs of its customers. The company's top managers began to search for a new way of organizing its value creation activities to turn the company around. To begin this process, top management looked at the way Japanese companies were organized, particularly at the way Honda structured its value creation activities. Chrysler sent fourteen of its managers to study Honda's system and report back on its operation.50 Honda had pioneered the Honda Way concept of organizing its activities. It created small teams, comprising members from various functions, and gave them the responsibility and authority to manage a project from its conception through all design activities to final manufacture and sale. Honda had found that when it used these cross-functional teams, product development time dropped dramatically because functional communication and coordination were much easier in teams. Moreover, design costs were much lower when different functions worked together to solve problems as they emerged, because to change a design later (for example, to add a second air bag) could cost millions of dollars. Honda had also found that its policy of decentralizing authority to the team kept the organization flexible, innovative, and able to take advantage of emerging technical opportunities.
Chrysler decided to imitate Honda’s structure and took the opportunity to do so when it chose to build an expensive luxury car called the Viper. To manage the development of this new car, Chrysler created a cross-functional product team consisting of eighty-five people. It established the team in a huge new research and development center it had built in Auburn Hills, Michigan, and gave it the authority and responsibility to bring the car to market. The outcome was dramatic. Within one year, top management could see that the team had achieved what would have taken three years under Chrysler’s old system. In fact, the team brought the car to market in just thirty-six months at a development cost of $75 million, results that compared favorably with those obtained by Japanese companies.

With this success in hand, Chrysler’s top management moved to restructure the whole company according to the product-team concept. Top management divided up functional personnel and assigned them to work in product teams charged with developing new cars, such as those with the cab-forward design. The number of levels in Chrysler’s hierarchy decreased since authority was decentralized to managers in the product teams, who were responsible for all aspects of new-car development. Instead of having to integrate the activities of different functions, top managers could concentrate on allocating resources among projects, deciding future product developments, and continually challenging the teams to improve their efforts. Chrysler’s efforts brought the reward of a dramatic drop in costs and an increase in quality and customer responsiveness. The price of the firm’s shares soared during the 1990s as customers rushed to buy its cars.

Questions:

1. Based on the case presented above, please explain the differences between a functional and a product-team structure. (25%)

2. What are the advantages of Chrysler’s new team structure, and what are some potential problems associated with it? (25%)

...
請閱讀此文後，儘量以條列方式扼要回答以下問題：

1. 你覺得廣達成為全球第一大 Notebook PC 製造商的成功因素為何? (8%)
2. 為什麼 The next trend is to be an intelligence-intensive rather than a
   labor-intensive company? 廣達有何具體計畫是朝此目標邁進? (6%)
3. 你認為 HP 與 Compaq 若合併對廣達的影響為何? (6%)
4. 你認為廣達將如何擺脫本國業者的競爭? (6%)
5. 你認為廣達應如何面對大陸的市場? (6%)
6. 你認為廣達觸角伸向 mobile phones, Internet Appliances, Servers and TFT-LCD
   的理由為何?你有哪些正反面的看法? (6%)
7. 你覺得廣達是否會走向自有品牌?你有哪些正反面的看法? (6%)
8. 廣達在台灣生產 Notebook PC 和在大陸生產各有哪些優缺點需考量? (6%)

**Laptop King**

In a year that's decimated high tech, Taiwan's unstoppable Quanta is posting
double-digit sales growth

When the U.S. halted air traffic for three days after
the September 11 terror attacks, one of the many
companies around the world caught in the
downdraft was Quanta Computer Inc. With U.S.
airspace closed, the Taiwan contract manufacturer
to Dell (DELL), Gateway (GTW), Hewlett-
Packard (HPQ), Apple (AAPL), Compaq (CPQ),
and others simply couldn't get its notebook
computers across the Pacific. Meantime,
components from suppliers in Taiwan, Japan, and
Korea were pouring in and finished computers
were piling up in Quanta's warehouse in Linkou, 20 kilometers from Taipei.
Making matters worse, just days after the U.S. reopened its airspace, a
devastating typhoon forced Quanta to halt production for 48 hours.
So with all this chaos, how did Quanta end up faring overall during Black
September? Sales rose 20% year-on-year, Quanta Chief Financial Officer Tim
Li reports. Such nimbleness has allowed Quanta to tough out over the past
year the worst crash in high-tech business history. Even as other computer
makers have suffered precipitous sales drops, Quanta has been on a roll,
posting double-digit sales increases. Far from laying off employees and
shuttering plants, Chairman Barry Lam, who founded the company in 1988,
has added 600 workers in recent months and is building up capacity. The
company this year sped past Toshiba Corp. (TOSBF) to become the world's
No. 1 producer of notebook PC.

Tim Ariowitsch, an analyst with Goldman, Sachs & Co. in Hong Kong. "It's definitely a world-class company." And given its relationship with Dell, he adds, Quanta is "hitched to the right wagon."

The Shanghai-born Lam has made Quanta what it is by building a supply-chain-management system that, in the notebook computer industry, is second to none. To be sure, superstar Dell, which accounts for half of Quanta's sales, is a global master of just-in-time manufacturing and has pushed Quanta to maintain a high standard. But Dell's mobile-PC business didn't take off until it started working with Quanta's design and manufacturing team, and today Dell relies on the Taiwanese company to produce 55% of its notebooks.

More and more Western and Japanese computer-notebook makers struggling to cut costs are shifting production to Quanta. As orders surge, Quanta estimates revenues for 2001 will jump as much as 50%, to $3.6 billion. Profits, according to Frank Lee, a Taipei-based Nomura Securities Co. analyst, should hit $310 million, up 25%.

PANTHEON. Quanta's rise comes at a time when Taiwan's economy is mired in its worst recession in modern history. Local industry's flight to the mainland is picking up speed. The computer hardware sector has been savaged, leading many Taiwanese to wonder whether the island's days as an information-technology powerhouse are numbered.

Barry Lam's Quanta has defied those trends. It's now in the rarefied pantheon of local companies that are global players—such as chipmakers Taiwan Semiconductor Manufacturing Co. (TSMC) and United Microelectronics Corp. (UMC) And by also investing in high-end manufacturing in Taiwan and planning a major expansion in research and development, Lam is giving the Taiwanese hope that they can still prevail in the high-tech game. "The next trend," says Lam, "is to be an intelligence-intensive rather than a labor-intensive company."

Lam has the good fortune of being in the only hot segment of the computer business. According to International Data Corp., total PC sales in 2001 will shrink 10%. But notebooks are bucking the trend, with IDC projecting sales growth of 9% this year as companies and consumers continue to move away from clunky desktops. And when any customer anywhere buys a notebook, chances are he or she is buying a made-in-Taiwan product. Taiwan makes 60% of the world's notebook PCs, up from 32% in 1997. Worldwide, one out of every seven notebooks comes from Quanta's factories.
But the next few months will probably test Quanta as never before. Notebook sales cannot defy gravity forever, and other Taiwan manufacturers are copying Quanta's innovations in managing production and logistics. Quanta's operating margins, which are now about 10%, compared with 18% a few years ago, may take a new hit, thanks to the proposed merger of Hewlett-Packard Co. with Compaq. That deal promises to shift the balance of power even more toward the brand-name players and allow them to demand price cuts from such suppliers as Quanta.

Moreover, other Taiwanese companies have thrived as contract manufacturers, only to lose their footing as they reached for the next level. Troubled computer maker Acer Inc. (ACEHF), once a top contract manufacturer on the island, offers an object lesson in how hard it is to stay on top. Ominously, Quanta's own diversification strategy is looking shaky. The company's forays into mobile phones and Internet devices have yielded little profit. And the global technology recession has dampened demand for LCD screens just when Quanta has invested $153 million in a 31%-owned affiliate that makes those components.

DO-IT-ALL. Branching out into new businesses is a big departure for Quanta, which has grown thanks to Lam's zealous focus on notebook computers. After working for a few Taiwanese computer makers, Lam started Quanta with less than $900,000 in capital. Quanta's first home was a cramped sixth-floor office-factory located in an old industrial district in Taipei. At the time, almost nobody else in Taiwan was paying attention to notebooks. But Lam produced his own prototype, an awkward, briefcase-size machine that he lugged to trade shows. His big break came in the early 1990s in Germany, where he won his first orders. Within a few years, Quanta had snagged Apple and Gateway Inc. as customers. In 1996, Quanta landed its big fish, Dell. Two years later, it went public. As a result, Lam is worth at least $680 million. Today, major customers who visit his Linkou offices get special treatment, with Lam ushering them into his private art gallery, complete with traditional Chinese paintings, Taiwanese teaware, and a Zen-inspired garden.

Lam doesn't spend much time enjoying his collection: He's too busy trying to stay on top. To remain competitive, Quanta is selling itself as the contract manufacturer that does it all. By using Quanta's manufacturing and logistics system, dubbed the Taiwan Direct Shipment model, customers can farm out the whole messy process of production and delivery without getting their hands dirty. Companies such as Dell still keep some of the customizing work in-house. But others are willing to let the likes of Quanta handle that, too. Many clients "don't even see the computer," says production chief Fang. "They just sell their brand and collect the money."
One of those is Hewlett-Packard Co. In 1999, it was on the verge of shutting down its notebook division when it decided to try Quanta. Now the Taiwan company does just about everything for HP notebook operations, from putting together the hardware to installing the software to testing the final product and shipping to the customer—all in less than 48 hours. Outsourcing to Quanta "saved our business," says HP worldwide supply-chain director Jim Burns. "It was the biggest turnaround in HP's history." HP still does basic design and takes the orders.

It's easy to see why companies want to increase their outsourcing. The technology bust has left behind a mountain of unsold computers, cell phones, and PDAs. By doing more outsourcing and shortening the amount of time it takes to deliver a product, the brand-name companies at the top to focus on their core competency, which is design and marketing."

The dynamics of e-commerce are also forcing changes. Traditionally, brand-name computer companies placed a few big orders for thousands of one-of-a-kind PCs with Taiwan contractors, who assembled and delivered them over the course of weeks. The advent of Internet communications dramatically crunched that time frame, allowing orders to flow faster and giving consumers the freedom to customize as never before. Nowadays, Internet orders for individually customized machines stream into Quanta 24-7. "We used to have one purchase order for 1,500 computers," explains Ted Wang, a deputy director on Fang's team. "Now, we have one purchase order for each machine." And Quanta is expected to deliver those computers faster. A year ago, it promised to ship a computer within 72 hours of getting an order. Today, that's down to 48 hours.

**JUST IN TIME.** Tracking all the orders in time requires constant updating of Quanta's supply-management technology. A year ago, it took almost one working day for Quanta's production engineers to determine whether they had enough components on hand to fill all the orders they had received. Now, it's a one-computer job and takes two and a half hours. Relying on forecasts from customers, as well as in-house estimates, Quanta puts out a 13-week schedule for its suppliers that it updates daily on its extranet. But sometimes even the best forecasts are off. "If any supplier has a problem," says Danny Lin, one of Quanta's top production managers, "it will destroy your plan." Then Quanta's managers have to make urgent phone calls to vendors demanding that they rush over parts that afternoon.
The pressure is relentless. Just ask Danis Yang. The salesman at Taipei-based Acbel Polytech Inc. provides Quanta with memory chips and other types of semiconductors made by U.S. manufacturer Fairchild Semiconductor International Inc. (FCS) Quanta used to buy directly from South Portland (Me.)-based Fairchild, but that meant the Taiwan outfit had to commit 30 days in advance and assume the risk of carrying the inventory. So recently, Quanta started buying from Acbel. That allows it to demand favorable terms, including emergency delivery. "They can just order anytime," says Yang. When the call comes in from Quanta, Acbel must deliver the same day. "If I want to get the customer," Yang says with a sigh, "I have to follow the rules. It's very hard."

Large multinational vendors are not immune from the pressure. In July, Panasonic Industrial Sales (Taiwan) Co., which supplies Quanta with LCD screens, DVD drives, batteries, and capacitors, connected the inventory-tracking systems in its Osaka factory to its Taipei office and to Quanta's system. For every product Panasonic sends Quanta, it can now compare the number it has in stock with the sales forecast Quanta issues. The new system has cut inventory levels in half, to 15 days. But if Quanta gets its forecasts wrong, Panasonic gets stuck with the leftovers, says Richard Shiao, general manager for info-tech systems at Panasonic Taiwan.

Can Quanta keep leading a charmed corporate life? Laptop sales are brisk now, but there's no guarantee for next year. And there is limited room for Quanta to grow by finding new customers. "The company already has all the major clients," says Tony Tseng, an analyst with Merrill Lynch in Taipei. Investors are getting concerned. Nomura's Lee, for instance, recently downgraded Quanta's stock.

In the longer term, Quanta faces a challenge from China. So far, Legend Holdings Ltd. (LGHLF) and other Chinese computer makers have thrived in desktops but not notebooks. Now, with notebooks becoming easier to make, that will change. In response, Quanta is building up an R&D team in Taiwan so that big U.S. and Japanese customers can outsource more of their design work to the Taiwanese. Quanta has 750 R&D engineers in Taiwan; Lam says he'll increase that number to 2,000 within three years.
Another answer to the China question, Quanta executives say, is to take the just-in-time model to the mainland. Right now, the Taiwan government prohibits notebook companies from doing full assembly work across the Strait. But once Taipei lifts the ban—which is expected to happen soon—Quanta "will be very, very quick" to set up a Chinese production base, says CFO Li. That could lower costs by 3%, a significant savings in an atmosphere of shrinking margins.

Chairman Lam knows that he has no time to rest. He sees Quanta moving from its current 48-hour turnaround to 24. Getting there may involve distinguishing between ordinary orders and rush orders, says HP's Burns, who is pushing Quanta to achieve one-day turnaround by yearend. "Customers who need 24-hour [turnaround time] will get it," Burns says. So far, Quanta has fought off the effects of the worst tech downturn in history. What happens next will determine whether Quanta retains its title as Laptop King.

By Bruce Einhorn in Linkou, Taiwan

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