

TATA'S SHAPE

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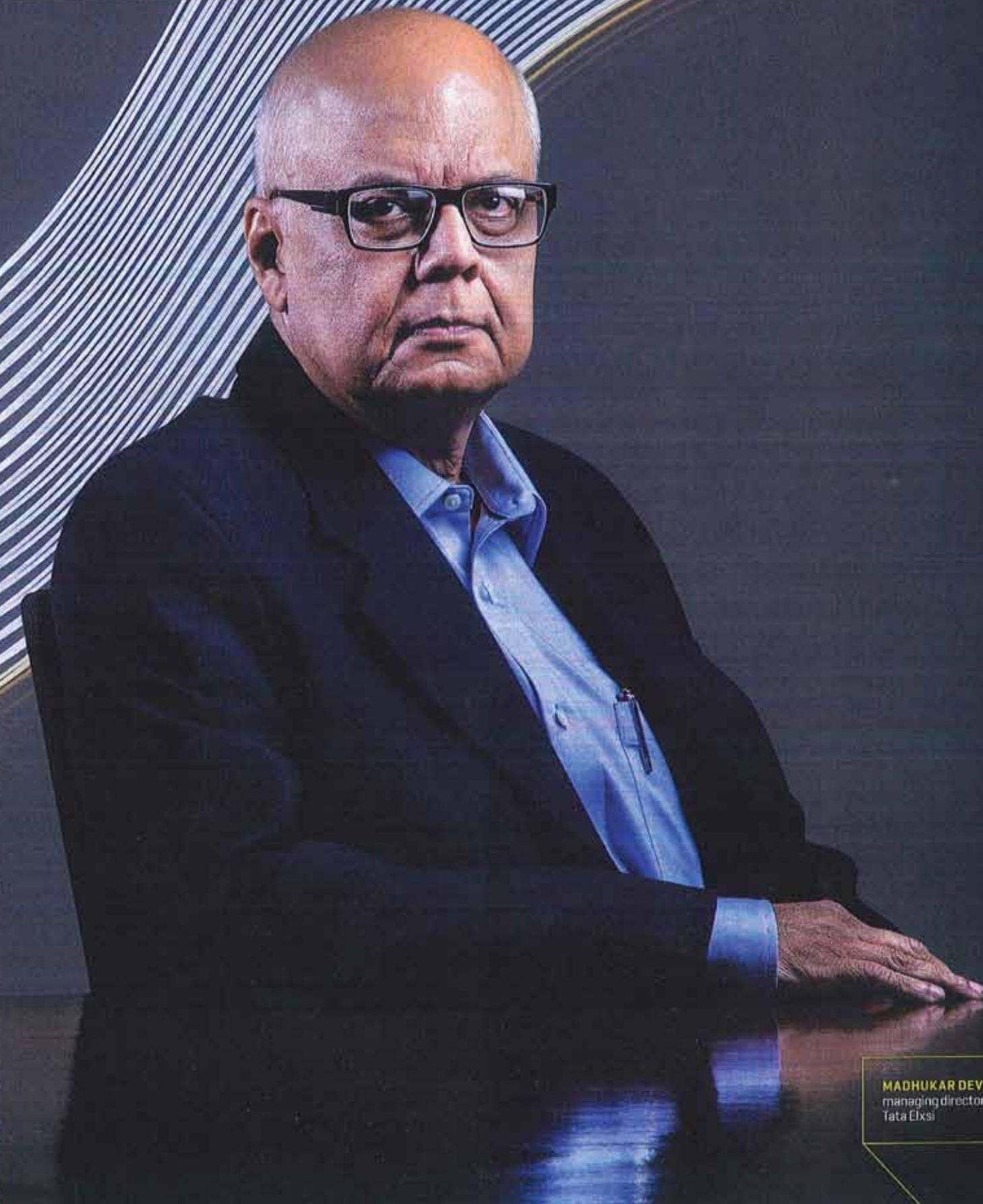
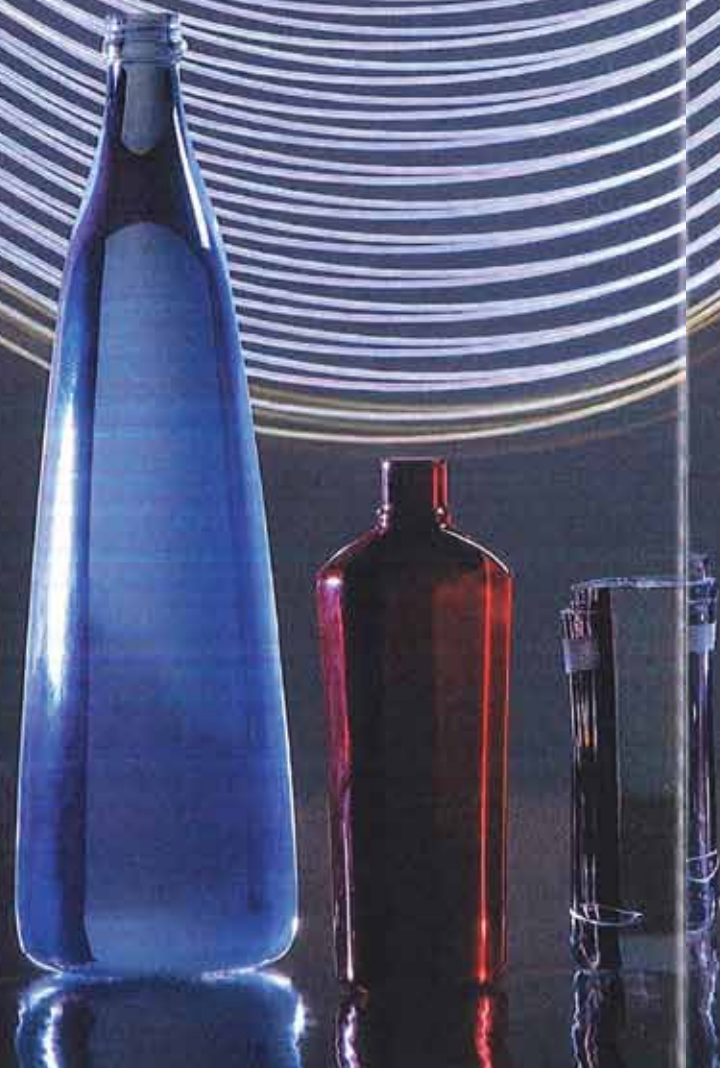
HOW TATA ELXSI
BATTLED AN
OBSCURE BUSINESS
AND A SERIES OF
ACCIDENTS TO
BECOME A DARLING
OF INVESTORS

By Kunal N. Talgeri

Photograph by YASIR IQBAL

MID-2010. MADHUKAR DEV, managing director of Tata Elxsi, was hosting a bunch of investors and analysts at his Bengaluru headquarters. The mood over the past few quarters had been grim. The company had seen more than Rs 40 crore wiped off its FY09 revenue. Net profit had shrunk to Rs 32 crore from Rs 50 crore. The biggest blow had come from its Japanese electronics and auto customers. Squeezed by the recession, they had pulled out their business in a matter of weeks. "We had painstakingly built that relationship over a long period in the belief that Japanese customers are sticky," Dev recalls telling the analysts. "But when they came under pressure, they cut their R&D budgets brutally without bothering about contracts."

That was then. In the past six years the dark clouds of the recession have lifted. Clients are back to investing in product plans. That has spurred a turnaround at Dev's company, which helps clients across industries—from automotive to consumer goods—make future-ready products. Tata Elxsi's clients are quite the who's who of their respective sectors: Ford, Jaguar Land Rover, Mahindra, Nissan, Panasonic, Comcast, and Motorola, to name a few. Tata Elxsi



MADHUKAR DEV,
managing director,
Tata Elxsi

Rs 1,075 **CRORE**
Tata Elxsi's
revenue in FY16

Rs 154.8 **CRORE**
Tata Elxsi's profit
in FY16

helps them with prototyping and software development, drawing insights from consumer behaviour and industry trends. In the past five years, its cache has grown exponentially: Revenues are up from Rs 415.9 crore in FY11 to Rs 1,075 crore in FY16. In the same period, profit has grown nearly five times, from Rs 32.5 crore to Rs 154.8 crore.

Notwithstanding the recent heroics, Tata Elxsi is a blip in the gargantuan Tata empire. Its Rs 5,614 crore market capitalisation is less than 1% of the m-cap of 14 listed Tata companies. In its 27-year history it has mostly lived in the shadows. It often struggled to communicate what it *really* did, in a country where design thinking was an obscure pursuit and anything to do with technology was equated with IT or BPO. Analysts still ask Dev how Tata Elxsi will compete with Wipro and Infosys. His reply: "We do not do IT."

The street may be confused about what Tata Elxsi does, but it has had no trouble recognising the value of its stock. It's now one of the country's biggest wealth creators: From a low of Rs 275 in June 2010, it has caught fire on the Bombay Stock Exchange, reaching a peak of Rs 2,274.10 on February 2 this year. Between March 2013 and March 2016, the stock price jumped some nine times.

Even factoring in the street's customary irrational exuberance, what are investors seeing? For starters, the trends in Tata Elxsi's external environment. In the era of connected ecosystems and customised product development, design is core to the very existence of product companies. Dev, who turns 62 this year and has worked at Tata Elxsi for a quarter century, says, "Nobody wants to end up being the Nokia of the car industry or the home entertainment industry."

It would appear the market is rewarding Tata Elxsi for grinding it out, and helping build a culture of engineering and design (E&D) in India. According to consulting firm Zinnov, in 2014 independent E&D firms from India—as opposed to captive units in manufacturing companies—accounted for 27% (\$6.9 billion, or Rs 43,587.3 crore) of the offshored E&D market, worth \$26 billion globally. Investors also love that Tata Elxsi has managed to grow without bloating itself. In the quarter ending December 2015, it had 4,600 employees catering to around 200 clients. "We should be able to create the impact of 10,000 employees without having that many employees," says Dev.

The headroom for growth is massive (the total E&D spends globally, including what Fortune 500 companies do in-house, were \$170 billion in 2014.) Never before has E&D been so central to such an array of products, even those that were traditionally technology-dark. As evidence, Dev cites two humble household staples—bathroom showers and mattresses. Bathroom fittings manufacturers are now faced with digital homes. Showers can no longer be dumb

fixtures. Based on usage and room temperature data, they are expected to predict the mix of hot and cold water the homeowner wants. Similarly, mattress manufacturers can no longer ship out standard models in bulk. They have to fine-tune their products based on how warmth and support levels vary during the hours of sleep.

That is in fact the best way to understand how Tata Elxsi is different from Big IT: While billion-dollar companies such as TCS and Infosys build applications and offer back-end support to global enterprises, Tata Elxsi's work is closer to the minutiae of everyday life. "The clients' needs in design engineering are [highly] specialised," says Sid Pai, an enterprise client advisor. "Engineering shops cannot have a factory mindset because they are doing esoteric design."

One of Tata Elxsi's showpiece projects combines principles from telecommunications, electronic devices, and Big Data to transform health care. In three European countries the company is conducting trials with wearable devices for patients at home. The devices help medical practitioners remotely monitor blood pressure and sugar levels, but patients can also use them to call for an ambulance in an emergency. At another level, the devices generate a vast amount of data by tracking the patient's body functions, which doctors can use to improve future treatment regimes.

Companies within the Tata Group, which span from salt to steel, are an ideal platform to test out Tata Elxsi's competencies. Group chairman Cyrus Mistry was on Tata Elxsi's board till October 2009. While other group companies like TCS and Tata Motors demand more of his attention, Mistry has identified Tata Elxsi among a host of companies like Titan and Tata Global Beverages as being crucial for the group to understand customer centricity in the new era.

When Tata Motors launched the sedan Zest in August 2014, Tata Elxsi bought a model, deployed six engineers to dismantle it, and converted it into a car that could be

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—SID PAI,
ENTERPRISE CLIENT ADVISOR



SHAPE OF THINGS TO COME: Tata Elxsi team members discuss an idea (top); a showcase of Tata Elxsi's work

driven from the front left seat, instead of the customary right, using a keyboard. "We knew the car's electronics architecture [inside out]. We made it autonomous and took it to Pune, and showed it to Tata Motors. About 100 technical staff took a ride in it along a programmed path," Dev recalls. "The exercise was meant to establish that the architecture was good enough for the car to be autonomous."

For Tata Power, another group company engaged in power generation, transmission, and distribution, Tata Elxsi has developed a plug that connects wirelessly to the Internet and can be controlled remotely. "With an app, users can track how much energy each device in the house is consuming" without any need for rewiring, Dev says.

A lot of what Tata Elxsi does involves slow, incremental improvement in clients' products. For, say, a Mercedes-Benz to become a large client, Tata Elxsi has to build a relationship over many years by investing its resources in a number of small projects. "Some part of it is driven by regulation—for instance,

RISE OF A MULTIBAGGER

The stock price has grown more than nine times in three years, outperforming market indices.



\$ 170

BILLION

The size of the global engineering and design market

4%

The share of independent firms from India in the global engineering and design market

Source: Zinnov

when there are laws that all vehicles pulling trailers need to have certain safety systems," says Nitin Pai, the company's senior vice president of marketing and strategy. Once it has a foot in the door, it can vie for other projects like pedestrian detection or collision detection. Then there's business from genuine innovation—say, when Mercedes-Benz wants to differentiate itself from other luxury automakers through a new parking assist feature. "Those are the first-to-market kind of moves, when clients decide to accelerate the cycle of [innovation]," says Pai.

Not everyone is convinced that this can be a recipe for breakout growth. A report in business daily *Mint* says: "Investors are enthused ... that [Tata Elxsi] is investing in areas such as cloud [and] Internet of Things. But honestly, which software development company worth its salt isn't?" Dev, known for his dour, no-nonsense temperament, doesn't try to put a spin to counter this. "A lot of [our] engagements are not so large as to be of strategic interest to large companies," he told Nishit Shah of Ambika Finance during an analyst call in January. "We use [them] to attract better manpower, and eventually we win business against our competitors because of the quality of [our] manpower." To those who feel Tata Elxsi needs to do more to justify its galloping stock, Dev has a simple riposte: "We will not try something out of the ordinary."

WHILE TATA ELXSI'S run on the bourses has triggered a lot of commentary and upped expectations, most of it misses one detail: This is a company that almost wasn't.

The 'Elxsi' in Tata Elxsi comes from a supercomputer startup born in Stanford University in the 1970s. The Elxsi supercomputer architecture was based on the ECL (emitter-coupled logic) semiconductor technology. But maintaining Elxsi's hardware called for stringent ambient conditions, meaning costs were

Rs 14 Tata Elxsi's dividend per share in FY16

ON A ROLL

IN SIX YEARS, TATA ELXSI GREW REVENUE 2.6 TIMES...



...AND NET PROFIT 4.8 TIMES



FY16 values are annualised standalone for four quarters. Source: Prowess

200

Number of Tata Elxsi clients across the world

high. Serendipitously, Elxsi had two early adopters in India, Tata Motors and TCS. The Tatas wanted to bring Elxsi to India and applied for a government licence in the 1980s. That's how Tata Elxsi was born.

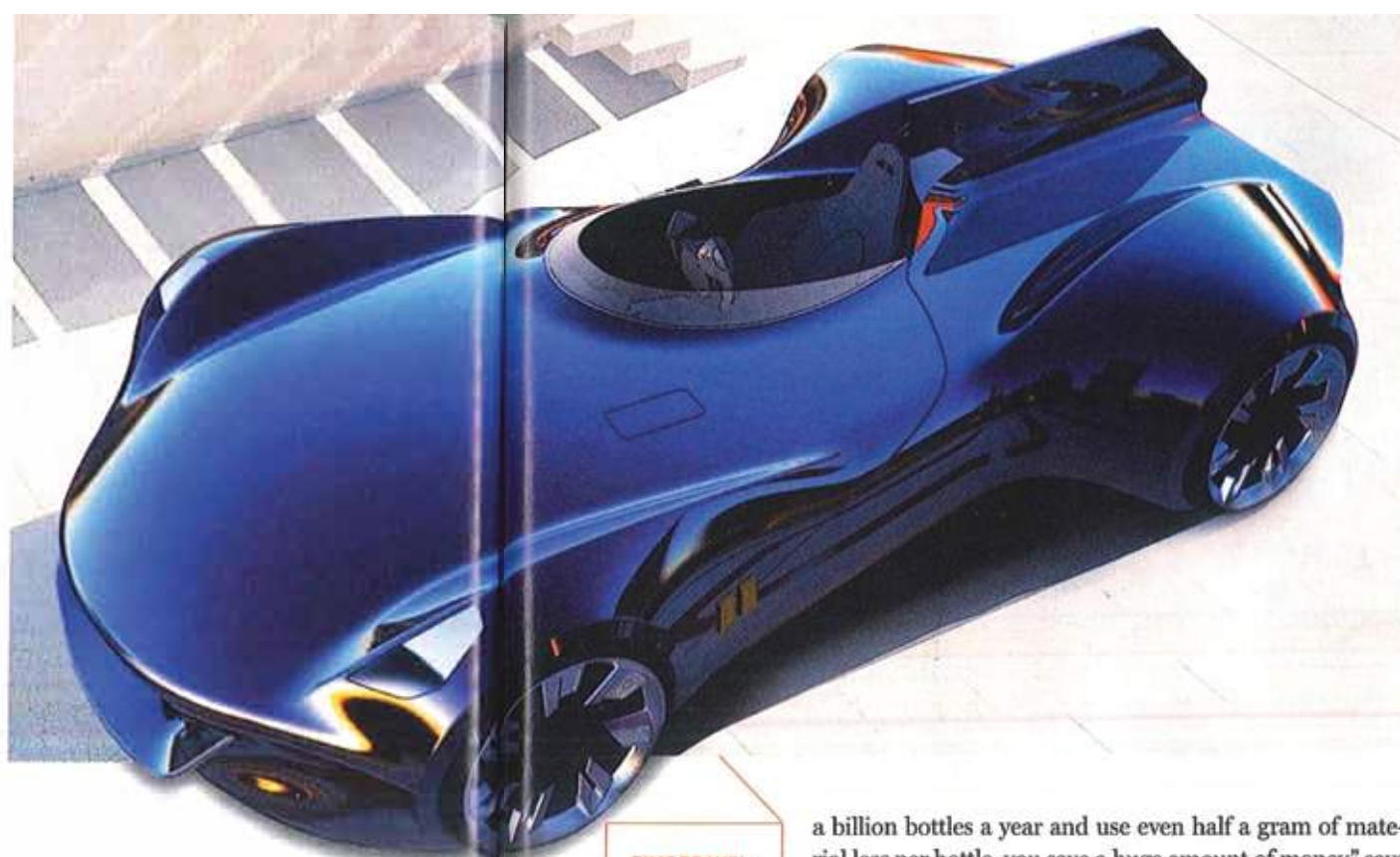
But India's notorious licence raj meant approvals took eight years, by which time supercomputers running on CMOS (complementary metal-oxide semiconductor) technology had made ECL redundant. In the U.S., Elxsi became defunct. In India, Tata Elxsi had high-profile clients, such as the Oil and Natural Gas Corporation and the Defence Research and Development Organisation. Making the best of a bad situation, Tata Elxsi took on the job of servicing Elxsi's existing clients.

In 1991, the company signed a technology transfer deal with California-based high-performance computing hardware maker Silicon Graphics (SG). Again, Indian regulations threw a spanner in the works. The partnership had to be indigenised in a phased manner, and Tata Elxsi started building a local engineering talent pool.

Back then, Tata Elxsi was sustaining itself as an SG distributor and value-added reseller worldwide. Calamity struck when computers started sporting inbuilt 3D graphics capabilities, making SG irrelevant in its home market. It filed for bankruptcy and sold its assets to Rackable Systems, a server and storage products company also based in California. But Tata Elxsi's jinx wasn't over. By the time SG had wound up, the recession had set in, and Tata Elxsi, by now a 3,000-employee firm, was left high and dry with a client exodus.

Even during this unfortunate sequence of events, Tata Elxsi was shaping its DNA: an E&D core capable of servicing companies across sectors. That's bearing fruit now, as clients look for partners who can draw upon insights from disparate areas.

NICK TALBOT, WHOM DEV HIRED in July 2011 to head design and innovation, is credited with building a holistic design ethic at the company. Talbot, 50, came from Seymourpowell, a design agency in London. Born in West Asia, he had studied industrial design in Scotland and London, and worked with clients in China, Japan, and South Korea. Over the years, Tata Elxsi's various divisions had been operating in silos. "In some places, there was a strong culture of hierarchy," says Talbot. His first task was to instill a new ethos: There are no walls between industries anymore; wireless communication is making human behaviour seamless. "If somebody, be it a designer or a coder, had a good idea, we wouldn't be afraid to build on it. That was the transition. Now, there is cross-functional conversation and



TIME TRAVEL:
A mock-up of a car of the future

thinking happening," Talbot says.

He also drew people from various areas of expertise. "The head of the insights team has a Ph.D. in anthropology," he told *Fortune India* in an earlier meeting. "Then there are people trained at design institutes such as Domus Academy in Milan."

Talbot's other silo-breaking pitch was to clients—convincing them that the new design paradigm made business sense: Incorporating features drawn from various industries gives products a better chance to succeed in a fast-changing market. Say, a car that would be compliant with a mobile phone, or a wearable device whose data would also reside on the user's laptop. "Nick kept stressing on design and electronics coming together ... that these are not separate businesses. They use different skills, but the impact is much stronger when they come together," Dev recalls.

Talbot also fostered a culture of attention to detail. While a well-designed product must look good and stand out on shelves, it also has to meet a banal need—to be made with minimum stuff. "When you gross up

a billion bottles a year and use even half a gram of material less per bottle, you save a huge amount of money," says Talbot. "The ergonomics of a shampoo bottle matters." For clients with such demands (Tata Elxsi's packaging clients include Unilever's Clinic Plus shampoo, GSK's Horlicks, and Indian Oil's Servo lubricants), the company gets involved with the whole supply chain—where the raw materials come from, how much is used, and how the factory is configured.

One of the new frontiers of design that excites Talbot is shape-shifting materials, formed by subjecting metals and plastics to specific temperatures and currents. Some General Motors vehicles use shape-shifting materials for functions like latching and unlatching the trunk and the fuel tank cap, and in the interiors, but such applications are far from scale. "We haven't seen sexy applications of these materials yet, but there is evidence that's going to happen in two or three years, maybe first in mobile handsets," says Talbot. Tata Elxsi's work in shape-shifting materials is in the investment mode. There are few details, but such forays resonate Dev's credo: "Design for Tata Elxsi is not about looks. We visualise products that don't exist."

IN SEPTEMBER 2012, I met Dev with Kailas Shastry, former technical editor of *PC World India*. Smartphone sales and the app ecosystem were beginning to take off in the country. Won't the Android and open-systems wave impact Tata Elxsi's very reason of existence, Shastry asked Dev. In an era when developers anywhere in the world could create new features for devices on open and connected platforms, why would clients come to Tata Elxsi?

Where Shastry saw threat, Dev found opportunity. "What a developer does on Android or iOS depends on capability and experience. With the skills and knowledge we have, there is room for us to design interesting products [by co-opting the developers]," he said. Tata Elxsi's core competence, knowledge, and relationships in consumer electronics help it connect developers with clients. Say, a developer creates apps for smart TVs. Tata Elxsi can help TV manufacturers design menus or set-top boxes that are compatible with those apps.

Dev's approach over the past five years has been much like a portfolio manag-

er's, investing in electronics, broadcast, auto, and telecommunications even as sectors such as consumer goods, health care, or now the Internet of Things, pick up. "The world that we live in now, even prospective clients don't really know what they should be doing with their businesses, or how they should be applying technology in the right way," says Talbot. "They are expecting us to conceptually develop solutions for them."

That said, the reality of this business is that it won't become a billion-dollar juggernaut. "Many engineering services firms are small because manufacturing companies [such as GE, Bosch, and Siemens] get much of their work done by their own captive units," says Sid Pai, an enterprise client advisor in Bengaluru. Media reports have also pointed out that Tata Elxsi is too dependent on a handful of clients, led by its largest client Jaguar Land Rover. Tata Elxsi has done business with JLR since 2000, before Tata Motors acquired it. Including other Tata Motors engagements, Dev told analysts in January 2016 that nearly 25% of revenues come from JLR and Tata Motors. This kind of revenue accretion from one client is built into Tata Elxsi's business model. It grows client relationships over long periods and makes money on a project basis—not through annual contracts that guarantee large tranches of money for three or five years, like in Big IT.

"A few years ago we had a very large number of customers who gave us very small revenues. We took a decision to keep only those engagements that were growing significantly," says Dev. "While we want our revenue from each of the top customers to grow, we are constantly developing other accounts."

The biggest threat to Tata Elxsi lies elsewhere. Every time original equipment manufacturers curtail their product plans because of a downturn, companies like Tata Elxsi are vulnerable. That's what happened with its Japanese clients around the previous recession. But then again, this is a company with an astonishing knack for survival and a culture of realism shaped by adversity. Dev, who has steered the company through a substantial part of its journey, isn't too bothered by what could go wrong, just as he doesn't get carried away by the current bull run. "When the stock was at Rs 70, it was unfairly low," he says. "Now, it's erring on the other side." ■