

MY EXPERIENCES IN CREATING INDIGENOUS TECHNOLOGY ENTERPRISE IN INDIA



P S Deodhar

Friends of Aplab and my near and dear ones often wonder why the Rs 20 million Aplab Group has not grown to become a company worth a few thousand millions, despite its credibility for high quality products, its quest for innovation, its steady exports to Western countries, its mastery over power conversion technology, and its business integrity. My answer to them is simple; principally it's me and my upbringing. Second, it is our integrity and unfaltering resistance to compromise, while making deals with government buyers and inspectors. I must admit, before anyone else brings it up, that I am responsible for ruining in the growth of my own venture, though unintentionally. For the growth of a company, the founder has to be ambitious about getting rich, and he needs to invest time and imagination towards that goal. Further, to achieve that goal, one also has to be ready to make compromises of all sorts.

Basically, I lack that kind of commercial ambition since it needs one to make 'deals'. My ego gets a boost from our technological successes. My mental makeup is that of a craftsman, and my passion has always been technology and its ability to provide a well-crafted solution. Satisfied customers have always been my honourable salesmen. Principally, it is they who helped Aplab to grow. My domain knowledge happens to be in electronics and engineering materials. I also had the benefit of coming from a 'Do-It-Yourself' (DIY) family. Aplab, therefore, restricted itself to high technology areas like instrumentation and efficient power electronics.

Big money could never be my goal

Chasing money never excited me nor was my ambition to be a businessman who would do any business that offers windfall profits. In fact, I prefer to keep away from those who would value me by my wealth or expensive lifestyle. However, there are those among the rich, whom I do hold in great esteem, for whom money has been a corollary of their great vision, extraordinary skill and wisdom. They wear their wealth very elegantly and conduct themselves in a gracefully simple manner. One would never find them brushing shoulders with the current money-centric elite class.

What really excited me was developing products that my customers wanted, and which other Indian companies could not deliver. My priority was always to put unrelenting efforts into manufacturing high-class products. My annual visits to Japan till the mid-70s, and then to Germany till the early 80s helped me understand and appreciate the meaning of technological excellence. Those visits were educative, and they challenged me to attempt the same technological approach in India.

Aplab grew horizontally rather than vertically

For the first two decades, our product development range covered a wide spectrum of industrial products, but no consumer product. The only exception was designing a 35.5cm (14-inch) black and white television for the rural Indian market, which was a great success. This happened during my tenure in Delhi as Rajiv Gandhi's advisor and as the chairman of the Electronics Commission. ET&T was a Central government enterprise. In 1986, I designed a 35.5cm B&W TV for it to market. It was an innovative concept where ET&T provided the

technology, the total materials kit and the ET&T brand name for free—the three aspects that prevent small scale units from competing with big companies. I was proud that ET&T could capture almost 40 per cent of the local market using my 35.5cm B&W TV design. I did the same to knock down the prices of personal computers to below Rs 10,000, forcing Wipro and HCL to halve their selling price. Aplab had a wide product range and five product divisions, thanks to my greed to accept design challenges. Aplab therefore grew horizontally rather than vertically. A big chunk of profits went into new product development. During all these

years of technological excitement, I gathered together many like-minded colleagues with a deep insight into the physics of power conversion, signal was on contemporary packaging design using appropriate materials. This had added to our abilities and our sense of excitement about what we enjoy doing. When I retired from Aplab in 2009, we had over 800 standard products for five market segments. Each vertical essentially had the potential to grow many times over, in size. While Aplab's market share was rather limited, the competition in each segment shows the scope we had to grow in size.

My sense of right and wrong often stood in the path of growth

Aplab has had good and capable marketing managers, but they were handicapped. I often stood in their path of growth because it either involved compromising on specifications or required greasing palms. These colleagues were clever in market development but in India one also needs to be 'flexible'. This was especially necessary since 80 per cent of our business was with the government or government-controlled organisations. For our government to function, it needs the oil of bribes. My men had an uphill task—there could be absolutely no unethical compromises on product quality or commercial integrity in order to offer a cheaper price. I must, however, admit that Aplab too had to provide monetary lubrication to get paid our legal dues from such institutions. In the early 60s and 70s, I was lucky and 'the system' then was far cleaner, especially in the south India. Being a technical entrepreneur who offered well engineered indigenous solutions helped me in the south. I enjoyed great benefits of being a pioneer. Till the early 70s, we grew rapidly, doubling our size every year. IIT Bombay, BARC, TIFR, etc, in Mumbai; and Bharat Electronics, Indian Telephone Industries, NAL and many others in the south were great admirers of Aplab. We were developing products for these companies, helping them to substitute imports with products delivering much more than their desired specifications. I recollect that, in 1967, Lt Gen AC Aiyappa, chairman of BEL, threw us a challenge to develop an AC voltage regulator to meet the K114E environmental endurance test. The product had to work at -40°C temperature in a moving military vehicle. Within four weeks, I went back to BEL with a sample that passed all the stringent tests. This helped BEL to replace a similar product from Siemens. Big orders followed from the Indian military for decades. The stories of developing solid state ringers and tones for the Indian Telephone Industries for telephone exchanges; or signal generators and microwave frequency counters for the military and DoT were very similar—we developed, got approval and supplied. Aplab had almost no competition from within India and imports were restricted. In 1975, we supported DoT's satellite earth stations with several high power UPS systems at each location. The story with DoT's Telecom Research Centre (TRC) was no different. All the DC power modules for India's first Digital Exchange of TRC were developed and supplied by Aplab.

Aplab learnt right engineering practices by selling in Germany

In 1972, I felt that Aplab was ready to offer its products to German customers. So we displayed our products at the Hannover Fair in Germany in 1972. We were probably the first Indian company to do so. Europeans passing by threw curious glances at me. It probably was as foolish as attempting to sell coal to Newcastle. But we did find some venturesome German buyers. The first supply to a customer in Munich turned out to be a disaster. The buyer said that our products worked well but could not be sold in the German market. But he did help us to redo the packaging and compliance testing by showing us what his customers wanted.

My eight years stint with the Govt was painful and frustrating

In 1982, I was sucked away from Aplab into New Delhi by Rajiv Gandhi, a close friend since

1974. His brother, Sanjay, had died in an air crash in 1980, and gradually, I began spending more time in Delhi with Rajiv at Akbar Road. In 1984, I left the management of Aplab in the able hands of my staff, well-groomed in the Aplab culture. I was away for over eight years but I did hinder Aplab's growth by advising them not to participate in any government business in which I was even remotely involved; one more instance of how my ethics were

stunting the company's development. Aplab got hurt but I had no option. I had decided to work for the government, but had pledged to myself that I would not indulge in any unethical actions. I even refused a government salary by accepting a token that I had to. It gave me a nice feeling. I was free to call a spade a spade. I don't think Rajiv Gandhi was ever told about his mistakes, as bluntly as I did. But then there is another face of Delhi that is now a common knowledge; its ugly face of corruption. Let me share, my own encounter with the corruption. In 1985, I advised the government to float a tender for the bulk purchase of colour television tubes to save foreign exchange. India was importing these at US\$ 76 a piece. My idea of tendering for five hundred thousand television tubes created fierce international competition. The lowest bid was US\$ 64 and ET&T, of which I was the chairman, negotiated it down to US\$ 63. We saved US\$ 6.5 million for the country in one stroke and we went on doing the same till 1989. Companies in Japan, S Korea and France were the suppliers. What followed came as a surprise. One amongst those suppliers came to meet me and surreptitiously told me that he had set aside a dollar per TV tube, and wanted to know how and where he should give it to me as my share. He was offering bribe after the supply was made. I called ET&T's then financial director Mr Patro and told him that he should see how ET&T could accept the \$50,000 he was offering. The supplier called to apologise and told me that this had been the prevalent practice. After this incident, I got labelled as 'clean'. People were warned to keep their hands off this guy. Indeed, it is obvious that such a reputation is no good for any ambitious businessman. Fortunately my ingrained values stopped me from stooping that low.

The eight years in Delhi were a sad and painful experience for me. I found almost no one amongst the politicians or top bureaucrats, who was interested in nation building; something that demanded sustained well-planned efforts. We had remarkably brilliant bureaucrats and very sharp, cunning and street-smart politicians. I found that the former were more concerned with their careers than the nation. Those among them heading the ministries barely had a year before they would be retired so the only future thoughts they had were about themselves and not the country. Most of the politicians had no vision for India. Their vision was limited to themselves, their region, their electorate and their caste. The liberalisation of the 1990s had added further to our woes as a nation. Manufacturing had almost died. Commercial globalisation brought about an overwhelming change since it altered the social behaviour of people. Our society too had become totally money-centric. Nobility, sacrifice, selfless service and wisdom were no more the measures of a respectable personality—instead, it was the wealth.

Our govt does not respect technology

In the 60 years of my engineering career, I have come across innumerable bright technical entrepreneurs who, in spite of their handicap of limited means and resources, have developed very innovative products and processes with unique features and performance. They have established credible technology businesses but I have seen them struggling to grow. The government has not shown any interest in identifying them and giving them special attention even though any developing nation, in its own interests, must do so. In my early years, I was lucky to get such recognition from BEL, ISRO and other institutions. I did assist them with my solutions and indigenously developed products. But there is no formal mechanism to utilise such innovators in our country, like in the US, Israel and even China. Our government is either not interested or is not sensitive towards them and in the process, our country loses a chance to advance technologically. We have a Science Congress for our scientists to announce their work, but no Technology Congress where our technical entrepreneurs can present their work. I feel sad that those who govern this country do not know how to make use of technical entrepreneurs to drive national technological progress. Let me illustrate this point by recounting our experiences in two areas -- smart card-based

public pay phones and automated teller machines. Both products were needed in huge numbers by India. What happened in both the cases still haunts me and makes me wonder what role corruption might have played in denying that business to us. Aplab was the first to offer India-made world class ATMs and smart card phones. In another country, we would have been recognised as pioneers. We would have got a priority in government purchase programmes. But, sadly, both DoT and the nationalised banks, used a commercial trick to disqualify Aplab, preventing it from even quoting a price against their public tenders for these products. We were thrown out for not being an 'experienced' supplier.

A 'smart card industry pioneer'

We at Aplab were quick in understanding the importance of smart cards in late 1989 after I saw on the streets in Paris, smart card-operated public pay phones. I knew that Semiconductor Complex Ltd (SCL) in Chandigarh had the technology to make EEPROM chips



which I could use for making smart cards. Aplab paid a big fee to SCL and got such a programmable chip made, and developed the technology to embed this chip on to a plastic credit card. Soon we developed a public payphone with a microcontroller. A unique communications protocol was developed to debit the card, depending on the rate applicable to the destination called. It was then put on trial by DoT in Mumbai for over six months. This established that our smart card public telephone worked fine. MTNL then allowed us to install hundreds of them all over Delhi, including several in the Parliament House. Thanks to my technology-savvy friends in MTNL, this happened without a bribe. MTNL did not buy our phones, but we put them up on the basis of a revenue-sharing formula. The International Conference on Smart Cards held in India

honoured me as a 'smart card industry pioneer'. After successfully running them for 18 months, MTNL announced its plans to float a tender for 10,000 card-operated telephones. Everyone at Aplab was excited since Aplab had the pioneer's edge with a field-proven product. It amounted to Rs 2 billion worth of business. I was called to meet the minister. I introduced myself to then minister (of telecom) Sukhram. He treated me well and I told him our smart card story. DoT, however, knew that Aplab could not be their milking cow. So when the tender notice was released, DoT put in one qualifying condition about the vendor needing to have at least 50,000 smart card pay phones functioning anywhere in the world. With one stroke, Aplab was thrown out. The Government of India thus gave Aplab its first 'reward' for its pioneering work. Strangely enough, Aplab's smart card pay phones got approved in Europe by Belgium Telephones, but they wanted international credit from India and this I did not know how to organise.

Our next pioneering product, ATM machines, was also shelved

Next, I became excited by bank automation solutions. In 1996, I saw an automated teller machine in HSBC, which made me wonder why Aplab shouldn't make ATMs. By then, Aplab had a good grip over computing techniques and our IT team was very excited about having a go at ATMs. The heart of the ATM machine is the cash handling mechanism. De La Rue was the prime source of bank note dispensers to global ATM manufacturers like NCR and Diebold, but they lost both these customers since they started making their own dispensers. So De La Rue readily agreed to support us with their long proven cash dispensers.

The rest of the job involved designing a customer-friendly interface with a CRT screen, secure handling of the ATM card and writing secure networking software. In a year, Aplab had the ATM machines ready. Again, it was a pioneering effort on the part of our design group. We sold over hundred machines over the next 12 months. We also had two unique design features. First, our machines were interactive with the user and guided the users in their own language. The second feature was the ability to take a picture of the person withdrawing cash from the machine. Both were not provided by our competitors, NCR and Diebold. With over 200 ATMs in the field, we were looking forward to banks buying our



product. But the Indian bankers were no different than DoT or MTNL. Tenders released by our nationalised banks included a condition that the tenderer must have at least 2000 ATMs installed and functional. In a clean sweep, Aplab was debarred by Indian banks from the ATM business. What a tragedy for our country! I met the finance and commerce ministers at the centre, who I thought would understand the merit of supporting an Indian company's pioneering efforts. After all it was the Congress that was ruling, and I had served it in the 80s. But, I just got a smile and a cup of tea from them besides of course a promise to 'look into it'.

No Regrets at all

There are many more instances for me to quote, but I gave you the two instances that could have made Aplab at least a Rs 20 billion enterprise, if not bigger. Well, this is the cost one pays for being upright and not falling in line with the business practices in India. I must, however, conclude by saying that I consider the loss was India's and not mine. I feel very proud that we, in India, could do what others in the world were doing, and that too in a small Rs 1.5 billion midsized public limited company. I have no regrets today as I have my good reputation intact, which allows me to live with pride and contentment.