

'This book... distinguishes itself by its detailed focus on the thought processes which inspired the breakthroughs. This innovative approach in storytelling enhances the book's inspiration quotient for the reader and challenges her or him to set out on a similar journey.'

RATAN N. TATA

HOW

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INDIANS PULLED OFF
THE IMPOSSIBLE

MAKING

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ARAVIND EYE HOSPITAL

MAKING A DENT IN GLOBAL BLINDNESS

Steve Jobs of Apple often speaks about `making a dent in the Universe`. But what does it take to do so? To find out, you don't have to go to Cupertino, California. Just go to tiny Madurai in Tamil Nadu. There you will find a thirty-two-year-old institution that is truly, in jobs's words, denting the world.

Aravind Eye Hospital is internationally recognized as an institution best suited to make not just a dent, but a grand canyon in the world of blindness. There are nearly twenty-four million blind in the world. And nearly one-third of them are unnecessarily blind, which means that they don't have to stay blind; a medical intervention can treat them. But the intervention in many cases requires surgery. And there just aren't enough doctors to go around.

Instead of increasing the number of surgeons to cope with the problem of unnecessary blindness, Aravind decided to find ways to increase a surgeon's productivity. And it has perfected an assembly-line technique of surgery that increases this productivity by a factor of ten. It has also developed such a cost-effective revenue model that thousands of blind poor can be operated on for free or nearly free. Revenues are generated from a small percentage of paying patients.

What's remarkable about Aravind is that only 30 per cent of its patients pay. And that they pay less than what they would pay elsewhere. The remaining 70 per cent are treated free or almost free. The remarkable becomes astounding

when you realize that this is not a small mom-and-pop charity establishment. It's full-fledged business that makes a 35 per cent operating profit (all profit are ploughed back into expansion, as Aravind is a not-for-profit institution), treats 2.4 million outpatients and does 286,000 cataract surgeries every year. This makes it by far the largest ophthalmological institution in the world. It is also one of the most respected, with student from Harvard, John Hopkins, Yale et al coming to it for training and exposure.

Aravind follows a unique business model. It takes its inspiration from STD-booth owners and Xerox-machine operators. Both these small businesses make money on numbers while serving the community's need for such services. The unit profit margin is low. But this is made up through enormous volumes. Aravind's business feeds on a virtuous cycle. The more surgeries Aravind does, the more effective it becomes. And the more effective it becomes, the more effective becomes, the more its reputation grows, bringing in more patients-paying or otherwise.

How did a small-town hospital in one of the quietest corners of India become such a global lighthouse?

BEGINNING WITH A DREAM

It all began, as most world-changing projects do, with a dream: to eliminate unnecessary blindness in India. This was the dream of a frail, retired professor of ophthalmology at Madurai Medical College.

This was not the dream of a government body or of a large powerful organization. Somehow these entities rarely seem to have a dream ... they have targets and deliverables and strategies ... but no dream

Dr. Govindappa Venkataswamy, or Dr. V, as he is called, wanted to be a gynaecologist after three of his cousins died in childbirth at a young age. But just as he

was starting off his career, he fell ill and was bedridden for two years with crippling rheumatoid arthritis. Many thought he would never walk again, much less be a surgeon. But this remarkable man not only left his bed, he also slowly, inch by painful inch, taught himself surgery all over again.

As Dr V's fingers were crippled, the usual surgeon's instruments were no use to him. He had to devise instruments specially for himself so that he could hold them. He realized he couldn't do the heavy surgical work required in gynaecology but rather than give up and sink into despair, he took up ophthalmology and went back to medical school. After graduating, he joined government service and then went into teaching. Treating unnecessary blindness became a passion with him. As a professor, he, along with his students and colleagues, pioneered rural eye camps in India. His team would go into villages around Madurai and operated on people who had lost their sight due to cataract.

While engaged in this, Dr. V realized that he was doing more than just restoring sight. He was literally extending the lifespan of those he treated. In those days, a blind, elderly person was considered a mouth with no hand and was not looked after too well. As a result, life expectancy after blindness was only around two to three years. And cataract-induced blindness was literally a death sentence. With Dr V's surgeries and the restoration of sight, these people went on to live productive lives for many more years.



Most of us are limited not by adversity but by accepting adversity as a permanent entity. Orbit shifters like Dr. V actively combat adversity and bend the situation to their will. They refuse to accept 'reality' was that he could never be a surgeon again because his fingers were twisted out of shape. But when a person refuses to accept 'reality', magic happens. And that's what happened with Dr V.



When Dr V retired in 1976 at the age of fifty-six, rather than seeing it as the end of his working life, he saw it as a beginning. He decided to set up a hospital to treat unnecessary Blindness and asked his sister, Dr. Natchiar, and her husband, Dr. Nam both ophthalmologists, to join him. They were then at Harvard, and were very persuasive. He was also Dr. Natchiar's elder brother, had raised her after passed away, was also her teacher in medical school and someone both she and Dr. Nam respected enormously. Saying no wasn't easy. Also, the couple were concerned about Dr. V. what would he do after retirement? He was a man of strong will, very disciplined, very restless. How would he stay occupied?

They decided to go along with Dr. V on the journey he was proposing: to build an alternate eye care model to the government's, one that supported the government yet was not dependent on it, and one that reached the common villager. It would be community-oriented, cost-effective and world-class in quality. As Dr. Natchiar says, 'we came back, but reluctantly. We through then we were making a great sacrifice'.

They decided to start in Madurai, where Dr. V had and worked for fifteen years. Also, Madurai was an old town with many village nearby, and they wanted to make a difference in rural India. And the aspiration was to eliminate unnecessary blindness in India.



If there's one thing that differentiates radical innovators who put dent in the universe vis-à-vis the rest of us, it's that they dream big. They dream on a scale that's simple beyond the comprehension of most other. And this scale leads them on to making a dent in the world. The sad part is that the ability to dream big is available to all of us. It's just that we choose not to use it.



FOLLOWING THE DREAM

The trio needed funding to bring this dream project. People had been telling them that there would be many who would come forward for such a good cause. Indeed, they thought that it wouldn't be too difficult to raise the money. But they were mistaken. And they were embarrassed. Nobody helped, and potential lenders were not willing to give them even a hearing. The last straw came when a bank clerk told Dr. V, 'you are already retired. Why do you want to burden the young people who work with you as they would be responsible for paying back the loan in anything happened to you'. They decided then that they would never ask anyone for a loan again.

They began with an eleven-bed hospital in the house of Dr. V and Dr. Natchiar's brother, G.Srinivasan, after mortgaging jewellery to buy equipment. The initial years were hard. As Dr. Natchiar says, 'We had problems raising the money and felt we had made a mistake in coming back. Compared to the US, where we had a car, a house and an easier life, here we had nothing and worked eighteen hours a day'. Each case was important. The paid ones netted them between Rs 2,000 and Rs 3,000 and they needed this money to sustain their eye camps.

The difficulties in embarking on a new initiative are often so great and the initial rewards so poor that there is always the temptation to fall back upon the status quo. It needs a radical challenge or an impossible aspiration to keep people going. People persist when they believe they're making the impossible happen or doing something that's 'insanely great'.

In a few years, Dr. Nam's sister and her husband joined Drs V, Natchiar and Nam. And the pool of doctors grew to five. They began to construct a hospital. Each day's earnings were ploughed back into the hospital to pay for construction or salaries. Dr. V's brother, G. Srinivasan, ran the finances. He ran a tight ship, juggling

payments and earning as they came in. and Aravind began its journey of constant growth, achieving the following milestones along the way:

- 1977: built a building with thirty beds;
- 1978: built a low-cost hospital with a hundred beds;
- 1980: moved into its present facility at Madurai (only Partially completed then);
- 1982: present facility expanded to 200 beds and three operating rooms;
- 1984: free hospital set up with 400 beds and three operating rooms;
- 1985: Aravind Hospital at Theni set up;
- 1988: Aravind Hospital at Tirunelveli set for 135 paying and 400 free patients;
- 1991: facility at Madurai expanded to accommodate 280 paying and 1100 free patients;
- 1992: Aurolab set up;
- 1996: Lions Aravind Institute of Community Ophthalmology (LAICO) set up;
- 1997: Aravind, Coimbatore, set up;
- 1999: hostel for PG doctors set up;
- 2001: nurses' residential quarters set up;
- 2003: Aravind, Pondicherry, set up;
- 2004: outpatient clinic at Melur in Madurai district started, now expanded to four Outpatient clinic at Thirumangalam, Tuticorin and Tirupur;
- 2005: Vision centre serving a rural population of 50,000 piloted, this has grown to thirty Vision centres at present;
- 2007: Aravind Manage Eye Care Service (AMECS) Division started to manage eye hospital in other parts of the country; (Aravind works with other eye hospitals in association with selected partners. They currently have four hospitals: two in Uttar Pradesh, one in Kolkata and one in Gujarat).
- 2008: Dr.G. Venkataswamy Eye Research Institute, a new state of-the-art research facility, inaugurated to conduct research in molecular biology, genetic disorder in eyes and proteomic (the protein component in genes) studies.

Through all this, the Aravind philosophy and model were maturing. In order to grow, stretching mentally, physically and materially to the maximum became a way of life at Aravind. Camps were conducted on shoestring budgets; the operated for ten hours at a stretch.

With money so tight, as Dr. Natchiar explains, they were constantly reducing costs, and standardization was the way to do this. They standardized everything—systems, departments, equipment, service and processes, which means a higher interchangeability and easier maintenance. When machines break down, parts can be transferred from one hospital. Even nurses can be transferred anywhere and fit right in because everything is standardization. The impact of this standardization and relentless focus on costs is that Aravind, according to Dr. Natchiar, is run at one-fifth the cost of similar hospitals.

Elaborating, Dr. Natchiar says, ‘We developed the philosophy that the content is more important than the container. Don’t focus on the packaging. Remove all unnecessary trims’. And yet, this didn’t mean a compromise on quality. The quality would be truly world-class. They used the best lenses, equipment and instruments. But anything else was pared down. Rooms were functional ... nothing that could add to expense. As Dr. Natchiar puts it, we learnt that money is not very important in building an institution. If we had waited for the money, it might never have come. Instead, we just began and the money followed’.

How often do we say ‘if only’? If only we had the money or the resources or the people or the opportunity or the freedom ... The shocking fact is that much less of all this is needed than we think. Some of the biggest breakthroughs come about simply because the innovators faced a lack of resources—and that forced them to think differently. The lack of resources forced them to ask ‘what if’ instead of ‘if only’.

In our experience, one of the prime differentiators of orbit shifters is that they just begin. They are more action oriented than planning oriented. This doesn’t mean that they don’t plan; it’s just that they don’t spend too much time waiting for ‘favourable conditions’. They begin and the favourable condition follow. The right time is right now and the best team is the one you already have. Everything else is an excuse to put off the important.

When Dr. Natchiar says that the quality is world-class, she means it. Aravind goes beyond the tyranny of the 'or'. For them it is never quality or low price, this or that, price or performance. There is never an inherent compromise. It must be both: quality and low price. They come from a non-compromise or value-additive mindset that constantly focuses on asking what they can do for their 'customers' that's world-class. And they find ways of making that happen.

Take the case of the Intraocular Lens (IOL). When this lens first appeared, Dr. V wanted it for his patients in keeping with his commitment to provide world-class eye care. IOLs cut down on postoperative recovery time and also gave infinitely better sight to cataract patients as compared to the traditional lens.

The lenses were prohibitively expensive, through. At \$100 each, they were way out of most Aravind Patients 'budgets. Dr V and his team decided to manufacture them in-house. They had no idea about the technology, the equipment or the process. But they decided to go ahead anyway! And Aurolab was conceived.

They roped in partners to make this happen and a number of voluntary eye care institutions came in-the Seva Foundation, the Sight Savers International, and the Combat Blindness Foundation, to name a few. It became a cause. The technology was obtained from an American company with a non-time fee for technology transfer. Aravind now manufactures around 1.2 million lenses a year. Non-profit organizations receive the lenses at \$4 a lens and for-profit organizations pay \$8. Since its inception in 1992, Aurolab has supplied more than 6 million lenses to non-profit users in India and eighty-five other countries. Today. One in ten users of IOL across the global uses Aurolab's lenses. Prices of IOL have crashed worldwide thanks to Aravind.

In addition to lenses, Aurolab also manufactures sutures used in cataract and eye surgery. Its cost is one-fourth the price of imported sutures. A pharmaceutical division has also been set up that manufactures the medicines required in surgery and other eye-related needs at a low cost. It currently manufactures twenty six types of ophthalmic drops. Further, unbreakable lightweight plastic spectacle lenses are now finished at Aurolab. Aravind's



Every time Aravind wanted to do something, they went for the maximum. Intent drove strategy. The intent was always to provide world-class services nearly free. Beyond a broad idea of what they wanted to do, they had no idea how to do it. Yet they just began. The most exceptional people we know are the ones who kept going when the others quit; the ones who found ways to do what everyone else thought couldn't be done. They don't just hold down a job or do a business. They reach deep inside and find something more. They always make a difference.



Patient were denied the benefits of these earlier because of the higher cost of plastic lenses. Aurolab is now an independent profit centre that provides nearly 200 per cent return on capital employed.

Aravind spends a great deal of time and effort in ensuring that its people are the best. Dr. Natchiar heads HR at Aravind and, she says, there is little supervision there. 'When a person is hired, giving them an orientation and putting them in the right group is our responsibility. We hire very carefully. And I personally recruit everyone-from a doctor to a sweeper. And we spent a lot of time on selection'.

For example, Aravind's paramedical staff are key to the success of its business model. The girls are recruited from villages and just need to have passed the tenth standard. They are trained intensively for two years and then placed as nurses. They multitask from patient preparation to nursing to patient counseling. The girls are also placed in Aurolab and produce IOL lenses, sutures, needles, medicines

and dyes for surgery. Initially, the salary is quite low at Rs 2000 per month but they get tremendous satisfaction from helping people regain their sight and earn respect and recognition in the community.

This is one of Aravind's breakthrough innovations. It's a win-win arrangement- Aravind gets affordable, dedicated manpower, and the nurses get a good job as well as tremendous respect in society, Aravind has also challenges the establishment in doing this. All India nurses have to be graduates and have to have passed a nursing examination. Aravind decided to set up its own syllabus and training and to recruit those who have passed the tenth standard.

The Screening and selection of paramedical staff thus becomes very important. And Drs Natchiar and Usha spend a lot of time on this. They meet the girls along with their parents to understand the family. They talk about the organization as extended family.

As Dr. Natchiar says, 'We don't look for intelligence; we look for common sense'. They don't general knowledge questions like 'who 's the prime minister, ' etc. instead, if the girl is from s farming family, they ask her questions like how much water an acre of the crop they grow requires, or what the ploughing time for an acre is. If she is able to answer these questions, it shows that she has been interested in and engaged with the family business. And this is the kind of engaged, involved person they want.

After she is selected, she is put through an orientation programme for a month. Everyone from doctors to non-clinical workers go through this programme, which highlights the heritage, the value

Aravind hires paramedical staff with lower educational qualifications than those in other institutes, hires them from rural and backward areas and yet gives them far more responsibility than the other institutions do. And the paramedical staff deliver. It's not the education that counts... it's the attitude, the training and the trust you put in.

system and the culture of Aravind. During this time, they are partnered with mentors-exceptional performers at a similar job-who act as inspiration and inculcate the Aravind way of life into them. And, as Dr. Natchiar says, ‘you can see it happening. The discipline happening without anything being said-seven a.m. in, seven p.m. out. No supervision required. Every day we see about three thousand people, operate on nearly three hundred, but there’s no chaos, no rush nothing. There’s an all-pervasive calmness. No yelling. This is not difficult if a system exists. But we need to mould and inspire people to stick to the system and its purpose. We don’t allow them to do any task until this one-month period is over’.

The nursing or paramedical staff literally forms the backbone of Aravind as they take up a lot of what would be doctors’ responsibilities in other hospitals. They do refraction testing, counseling and help patients decide what kind of surgery/treatment to go in for, freeing the doctors’ time for more surgery and medical consultation.

All the doctors at Aravind work full-time. Private Practice is not allowed and there are no part-time consultants as in other hospitals. Aravind believes that this is essential to develop institutional loyalty and the work culture and necessary skills needed to make mass impact.

The training of doctor also following a similar process at Aravind, with the focus on the organization’s philosophy and way life. They too are partnered by ‘mentors’ who are role models who instill the Aravind way of life in them.

THE ARAVIND WAY OF LIFE

So what is the Aravind way life? According to Dr. Nam, ‘when you do something, your people will do it too and it will become a part of their lives. If they are asked to do something that you don’t do, they will do it, but will forget it soon after. Therefore, always lead by example’.

The senior doctors are so hands-on that leading by example has become a way at Aravind. As Dr Nam says, ‘people don’t need to be told to come in early. They see us doing it day after day and they follow. When we see something dusty or dropped on the floor, we clean it or pick it up. They see us doing it and do the same themselves’. Of course, the Aravind way of life is also about constantly stretching oneself and going after the next horizon.

It is this way of life and philosophy that makes the Aravind model quite hard to replicate. Aravind is very open and transfers its knowledge of hospital management systems across the world. But as Dr. Natchiar says, ‘the difficulty lies in transferring the inner spirit and attitude. We can show them the cost measures, the systems, the administration details, the marketing, the standardization ... everything but the inner spirit’. People pick up the processes, the methods, the structures but not the ‘inner spirit’ or the Aravind way of life. The tangible ‘hardware’ is picked up but not the intangible ‘software’. And in an organization of low supervision yet high impact, it’s this software that is critical.

Orbit shifters like the Aravind team are paradoxes in many ways: gentle people, but slave drives who motivate by example. They care deeply for team members yet push them to the limits ... and then push them further. They tend to stretch people and enable them to achieve impossible goals.

What do your people believe they are doing? Drop dead boring work or something that makes a real difference? What are they doing that’s insanely great? what can you do to cause that feeling?

THE FAMOUS ASSEMBLY LINE

In the 1950s and 60s, Dr. V was grappling with the issue of scale as he realized just how monumental the task of eradicating needless blindness was. In 1961, he started his eye camps. He and his team of doctors would travel hundreds of kilometres deep into rural Tamil Nadu and diagnose patients and conduct cataract surgeries there. But the impact seemed very small. If they had to eliminate cataract as a cause for blindness, doctors had to do many more operations than they were currently doing. Around this time, he went to the US and encountered McDonald's restaurants with their assembly line operations and standardizations. Here, he realized, was a breakthrough proposition. He was convinced that this technique could make a radical difference to blindness if he could find a way to marry the two – surgery and McDonald's. He did. And if the figures are anything to go by, it did make a radical difference. An average ophthalmologist operates on 250 to 400 patients a year. An Aravind ophthalmologist using the McDonald's – inspired assembly line technique operates on 2000 patients a year.

At Aravind, the day starts at 7a.m. for doctors. Nurses come in at 6.30a.m. and prepare the patients for the day.

Patients are scheduled for each doctor. By 7.15 a.m., two patients are on two adjacent operating tables. One operation theatre has four operating tables laid side by side and two surgeons handle these four tables.

In many hospitals, keeping two patients in the operating theatre is not allowed because of the risk of infection. But Aravind challenged this as its patients are mostly healthy and come in only for eye surgery. Therefore, the risk of infection is low. Its low rates of postoperative complications bear this out. Based on research

In our experience, the ability to marry principles and ideas from two diverse fields is one of the unique characteristics of radical innovators. They constantly trawl the world for ideas and look across diverse fields to see what can be applied back at work. What ideas and techniques are you consciously trawling the world for? Are you fixated only on your own industry?

by the Royal College of Ophthalmologists, Aravind's postoperative complications are lower on many comparable parameters than for hospitals in the UK.

Each patient has two nurses. One assists the doctor, and the other, called a running nurse, brings surgical instruments from a sterilization area about twenty – five meters away. Each doctor operates with two assisting nurses and two running nurses. This comparatively large team is one key reason why doctors perform so many more surgeries at Aravind than anywhere else in the world.

By the time the surgeon finishes with one patient, the other one on the adjacent table is ready with the microscope focused on the eye to be operated on. The operated patient is moved out and the third one is brought in and kept in operational readiness. The moment the surgeon finishes with the second patient, he swivels to the third with minimal loss of time and effort. He constantly moves between the tables with barely a five to thirty surgeries between 7a.m. and 1 p.m. There are no operations in the afternoon and the theatre is scrubbed and kept ready for the next day's surgeries. The surgeons spend the rest of the day in either outpatient work or research.

This process has ensured that Aravind's surgeons do many, many more surgeries than any eye surgeon across the globe. The elite medical schools of the globe come to Aravind to study its methods.

THE DYNAMIC OF NEXT-HORIZON THINKING

What is striking about Aravind is that everyone there from Dr. V to Drs. Natchiar, Nam, Usha to Dr. Aravind, the administrator, all talk about the next horizon.

Aravind Eye Hospital is currently doing 286,000 surgeries a year. Dr. Aravind talk about scaling this to one million by 2015. Dr. Nam talk about eradicating diabetic-related blindness in another ten years, despite the fact that India,

according to Dr. Aravind, has around 42 million diabetic, of which about 20 per cent tend to suffer from diabetes-related blindness, that's about eight million people requiring intervention ! Dr. V talk about using IT and rural internet connectivity to bring in more patients. Both Dr. V and Dr. Nam talk about the fact that only 7 per cent of those requiring eye care see a doctor. What's happening to the other 93 per cent? The doctors are constantly focused on way of getting this vast number into the treatment loop.

The entire organization is obsessed with the next horizon. The ambition now is to reach a billion people.

The Lions Aravind Institute of Community Ophthalmology (LAICO) is an offshoot of Aravind's next-horizon thinking. As part of its crusade to eradicate needless blindness globally, Aravind shares its processes and methods with anyone who wants to learn. In 1992, in collaboration with Lions International, it set up LAICO. Groups and institutions from across the world come to LAICO to learn Aravind's replicable model of mass eye care.

The objective of LAICO is to improve the planning, efficiency and effectiveness of eye hospitals across the world with a special focus on developing countries. It teaches, trains, researches and consults. It has worked with over 150 hospitals across India, Southeast Asia and Africa. LAICO offer long-term courses in hospital management and short-term courses in community outreach, social marketing and instruments maintenance. That's fission-spreading your model into every corner of the world!

What causes this next-horizon thinking?

First, the size of the mission itself. According to Dr. Aravind, 'Next-horizon thinking comes from our mission –eradicating needless blindness. It's a large

mission. We don't say eradicate one disease in this or that geographical region. It's broader-unnecessary blindness anywhere'.

Second, they think mission back rather than resource forward. As Dr. Aravind says, 'We go behind the issue of blindness and not behind resources. We've always striven to reach people no matter what the constraints. And doing that, we found, brings in resources rather than the other way around'. According to Dr. Natchiar, 'money is not very important in building an institution. If we really go after purpose, the money will always follow'.

This uncannily echoes Goethe: 'Concerning all acts initiative and creation ... The moment one definitely commits oneself, then providence moves too. All sorts of things occur to help one that would never otherwise have occurred ... Boldness genius, power and magic in it. Begin it now'.

Third, there is a mindset of fluidity and expansion at Aravind. Dr. V is an inspiration with his energy, his constant stretch for more, and his sharing of practice with hospitals across the globe. There's no hoarding of knowledge or information. It's all freely shared. The thrust for contacting more and more patients comes from Dr. V who created a paradigm shift by refusing to wait for patient to come to him and instead actively 'sold' free services to those most in need of them.

At Aravind, everything is measured not by how much has been done but by how much remains to be done. Their aspirations have kept rising-from eliminating unnecessary blindness in India to eliminating unnecessary blindness globally. It's an aspiration like this that has placed it firmly on the global eye map. And today



So what's your excuse? If the dream of a frail old man can make a dent in the world, what's your excuse for not dreaming? Too old to do anything much? Too young to do much? Retired? Just joined? Too powerless? Too high in the hierarchy? Too low in the hierarchy? Physically incapable? Spiritually? Mentally? These are just some of the rationalizations that we dish out to others and ourselves for not maximizing our skills and talents. But look at this man ... he set up the world-famous Aravind Eye Hospital at the age of fifty-six after retiring from government service. Most of us would have sat back and 'retired'.



they are in the position to make a truly global impact. To make a difference to a billion lives!

If there is a key lesson to draw from the Aravind story, it is that it's always possible to make a dent in the universe. It all begins with a dream-and an irreverent mindset that challenge everything and refuses to accept any situation as a given.