

India as a Source of Innovations

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The First Lalbahadur Shastri National Award for Excellence in
Public Administration and Management Sciences Lecture

New Delhi
September 30, 2000

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Introduction:

It is with great humility that I accept the Shri Lalbahadur Shastri National Award for Excellence in Public Administration and Management Sciences today. As the second Prime Minister of India, Shri Shastri made significant contributions. He understood the inadequacy of the Public Administrative system, a legacy of British rule. He created the Administrative Reforms Commission to make the system more responsive. It is his administration that created the “Green Revolution”. He understood the problem of population growth. He initiated grass root level family planning education. He won a decisive victory in the war against Pakistan and in victory had the foresight to negotiate a peace agreement. But the real lasting impact he made was in the nature of his leadership. A son of India, he understood her soul. He understood her values and what ordinary people of India cared for and responded to. He governed with honesty and humility. He was convincing because of his convictions. He was a transparent leader and Indians identified with him. He was also an innovator. The inspiration for my theme for today “India as a source of Innovations” is a reflection of his aspiration for India. Moreover, I will focus on the strategies for the bottom of the economic pyramid- the very people whom he cared for the most.

India can embark on the new millennium with a sense of confidence and accomplishment. India has demonstrated its commitment to democracy. Its politics today reflects the true nature of the Indian polity – a coalition. Significant economic progress in a wide variety of fields – from agriculture to custom software, professional services, and fine chemicals - has brought a new sense of optimism. The success of India in non - traditional industries around the world and especially the success of Indians abroad in business have created a new opportunity. The Indian Diaspora is becoming a conduit for new ideas in international relations and entrepreneurial growth within India. There is much to rejoice. But the India of the past – poverty, inequality, indifference, and inefficiency- has not loosened its grip. Inevitably, two distinct Indias are emerging – an enthusiastic, globally competitive India and an India of the very poor and the disenfranchised. As we present a positive picture of India, both internally and externally, we cannot ignore this increasing divide. It is my purpose today to present a perspective on how to bridge this divide. I will concentrate today on how we can develop *Strategies for the Bottom of the Economic Pyramid*. My starting point is: How do we conceive of a market built around the very poor? How do we embrace new approaches to innovation? Can we convert our apparently insurmountable problems of poverty into a global opportunity to serve 4.5 billion poor around the world - the India like markets - who have similar problems?

Escaping the Past to Create the Future:

In order for us to create a new India, we need to reexamine the basic assumptions that have guided our public and private policy for most of the last fifty years of independence. What is our “genetic code”? It is imperative we come to terms with these orthodoxies before we can break out of them and create new priorities and fresh approaches. We need to selectively forget the past. But what aspects of the past should we forget? Here are some:

1. *Distributive justice is more important than wealth creation.* Income inequalities are a major issue in the United States as it is in India or Brazil. However, we must focus on increasing the income of everyone as we maintain our concern over income redistribution.
2. *One model of development is appropriate for a country of the size and diversity as India.* Till recently, the room for local experimentation was very limited. Fortunately, today the states under different local governments are able to experiment with different approaches to development.
3. *The rural and urban divide is real.* Even as rural incomes increase and the numbers of rural rich equal the urban rich, the debate still assumes that the rural and urban problems are distinct. We must work towards creating a seamless Indian market that makes goods and services available to all. Increasing the access of rural producers to urban markets should be a priority.
4. *Market forces cannot be trusted to cope with the problems of the poor; neither can we trust private sector with infrastructure investments and capital -intensive industries.* Therefore, the government must take on that role. The lesson worldwide is the inappropriateness of a strong government role in running industries. Deregulation and privatization is increasingly a global phenomenon. Are we willing to shed our commitment to public sector fast enough? Can we trust a market mechanism that truly reflects the true economic costs of activities?
5. *Income inequities can be alleviated through a system of overt and implicit subsidies.* Subsidized electricity, food, water, housing, and other necessities reflect our commitment to a just society. In reality, subsidies have turned into entitlements. We have created a dependent and passive society. Further, neither the states nor the center can continue to finance these subsidies for long. Many subsidies today are maintained at the expense of growth.
6. *Development is about higher education not primary education; it is about advanced medicine not primary health care.* While we have some of the best institutions of higher education (IITs, IIMs, IISc), the scope, quality and universality of primary education is less than adequate. Why? Asian development- be it in Japan, Taiwan, China, SW. Korea or Malaysia – have

demonstrated the importance of universal and high-quality primary and secondary education coupled with sound primary health care.

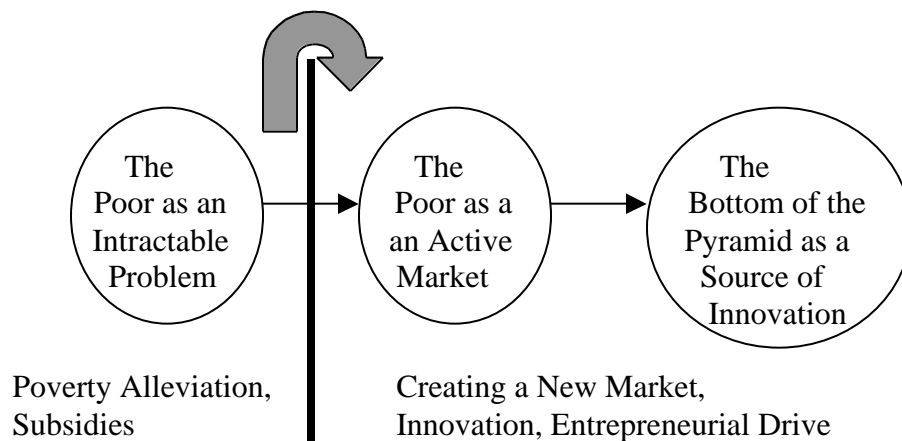
We can add to this list. The goal is not to develop an exhaustive list but an indicative one. We need to examine afresh all these assumptions.

The Basic Shift in Mindset:

India can become a source of innovations if the mindset of managers and public policy makers undergoes a significant shift. For example, if we conceptualize the problem of India as the problem of poverty then we have a set of standard prescriptions. But if we ask ourselves the question: “how do we convert the poor into active consumers”, we will develop a new and interesting set of innovative solutions. I see the need for two significant transitions as shown below:

The point of departure is that we have to come to terms with the fact that 50 years of effort to alleviate poverty using the tested tools - subsidies and governmental programs - have failed. Five hundred million Indians still subsist on less than \$1 per day. The income disparities are still large and increasing. We have to adopt a new approach. The biggest transition for policy makers is that they have to come to the conclusion that converting the poor into a vibrant market is more likely to succeed.

The Shift in Mindset Needed:

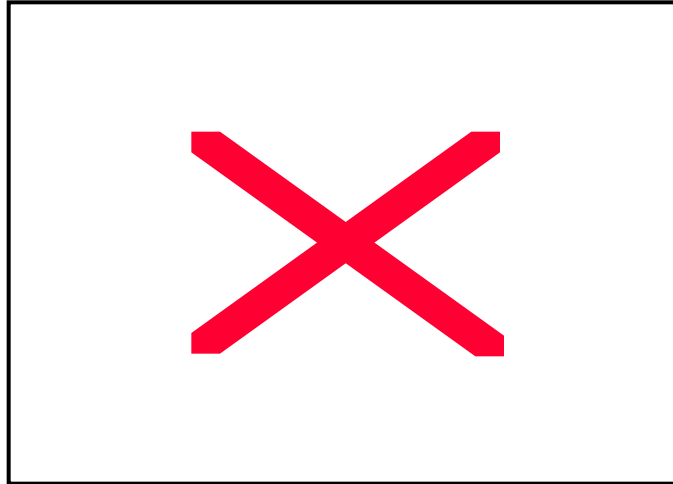


There has been a very significant debate on “globalization” and the alienation of the poor and the disenfranchised. The argument is that globalization will further accentuate the problems of income and opportunity disparity. We have to challenge this assumption as well. Simply stated, creating new markets to include the poor and the disadvantaged, and innovations related to that effort, can be the

real benefit of globalization. Managers and public policy makers must create the incentives for this to happen.

Prerequisites to Managing the Transition:

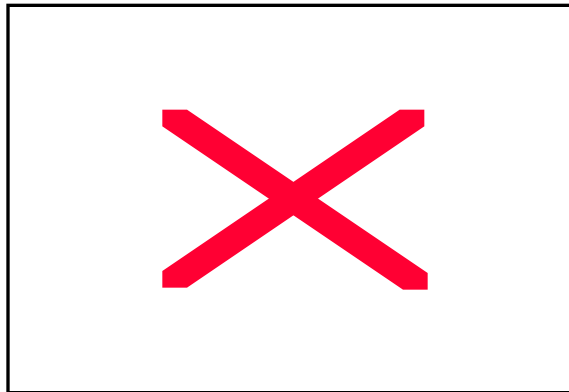
The prerequisites to managing the transition are clear. We have to recognize the nature of the opportunity. For example, the economic pyramid in India is shown below:



This model of income distribution is not peculiar to India. It is truly representative of other big emerging markets such as China and Brazil. The similarities of perspectives among managers in multinationals, large Indian firms, politicians, the bureaucracy and the NGOs are striking. All assume, either implicitly or explicitly that the tier # 3 and Tier # 4 and # 5 are the responsibility of the governments and NGOs. The organized sector- managers in large firms still focus primarily on Tier # 1 with few firms attempting to penetrate Tier # 2. The so- called emerging middle class in India is all about Tier # 2 and some of # 3. A prerequisite for transforming India is to recognize that we have to organize the unorganized sector. We have to create a market out of the abject poor. Tier # 3, #4 and #5 must become the focus of our attention.

However, the bottom of the economic pyramid imposes several new managerial demands. First, the *price-performance relationships* in all existing products and services must be dramatically altered. A Rs.25 ice cream cone or a Rs. 50 shampoo bottle will not do. Why not a good quality ice cream cone for Rs.1? Second, the model must *be scalable*. For example, NGOs do a phenomenal amount of service in India. However, their work and innovations are not easily scalable or transferable. We cannot serve 700 million Indians at the bottom of the pyramid, if we do not develop business models that are scalable. Third, the models must be *environmentally sustainable*. Resource intensive products and technologies as used in ‘mature’ markets will be unsustainable in the long term. For example, the use of water, energy, and materials must be drastically

curtailed. Given water shortages in both rural and urban India, water use and pollution of the existing water supply are serious problems. Production methods as well as products must consume as little of limited resources without sacrificing functionality. For example, we must focus on “cleanliness” and not on current formulations of detergents. Finally, we must focus on *harmonizing the most advanced technologies and local conditions* to create innovative solutions to address the opportunities at the bottom of the pyramid. Ironically, the bottom of the pyramid may be the springboard for the most creative use of advanced technologies. The specifications of the requirements for satisfying the needs of the bottom of the pyramid can be captured as follows:



In developing solutions to the bottom of the economic pyramid, we have to find solutions that satisfy all the four conditions stated above. In some types of businesses, we may need to satisfy only three out of the four conditions. For example, financial services industry need not focus their attention as much on the sustainable development dimension as the packaged goods industry. However, they have to focus on the other three dimensions.

Creating a Market: Five Innovations:

I will attempt to share with you five innovations that address the types of innovations that are critical for India like markets demonstrating that India can become the source of such Innovations for the world.

Ice Cream for the Poor:

I recognize that an ice cream cone is considered a “luxury item” by many in India. I am told that it is taxed. On the other hand, an ice cream on a hot summer day is a welcome relief. So why shouldn’t all Indian children have an ice cream cone when they feel like it? But a Rs. 20 ice cream cone (the price in New Delhi) is not the answer. However, an ice cream cone for Rs. 1 would make this dream for all of India’s children a reality.

A breakdown of the cost of ice cream suggests that about 40 %-50% of the cost of ice cream is the cost of refrigeration. Even when one pays the price for refrigeration, the chances of getting a good quality product is low in India. Ice cream should be stored at -18° C for retaining the best texture. In most parts of India, with significant brown/black outs, the probability of a steady -18° C is low. Further, in areas where access to electricity is not available, ice cream vending is unlikely. Is there a solution to this problem?

The scientists at the Hindustan Lever Laboratories in Bangalore may have found an interesting solution to this problem by inventing a safe, inexpensive and a sustainable technology solution¹. Current methods of vending have the following characteristics:

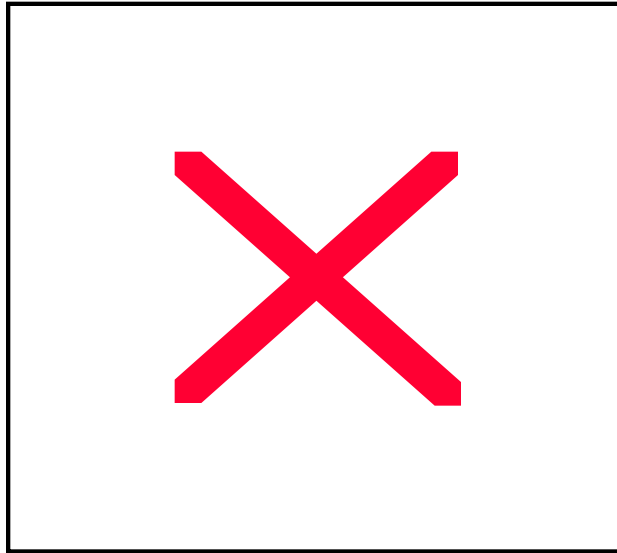
- > 1KWH /Kg of ice cream during inter city transport,
- > 4KWH /Kg of ice cream during in store vending operations,
- Risk of leakage of CFCs, a carcinogen and a toxic material, and
- The equipment to contain the eutectic is capital intensive.

It is not surprising that the cost of ice cream in India is too high for a mass market to develop. The consumption per capita is a meager 0.05 kg/person/year compared to 0.5kg/ person/year in Thailand and 10kg/person/year in the USA. Even if we reach the levels of consumption in Thailand, India will need an additional 2.5 billion KWH of electricity.

The innovation of HLL is focused on creating a non- toxic, non corrosive eutectic coolant system for safe, low cost and low weight mobile vending machines. The unique contributions are along the following dimensions:

- 1.The system uses eutectic coolants that are non- toxic and non- polluting. All the salts used in the system are edible. This approach eliminates the pollutants from the system. Further, by dramatically altering the energy requirements, it adds to sustainable development.
- 2.By creating a novel approach – a *heat shield* as contrasted to the traditional heat sink- this approach almost approximates to a “refrigerationless” vending system. Under trial, the ability to insulate and maintain temperature in vending carts was superior to current best practice. Most importantly, the capital costs of the “vending box” are considerably lower.
- 3.The system is totally scalable
- 4.The system has the capacity to dramatically alter the cost of ice cream. Work on developing the technology further to create a new refrigeration system from the factory to the end consumer is being actively pursued. This will further reduce the costs of refrigeration.

¹ I am grateful to Dr. M. Nataraj, CTO, HLL and Dr. Vijay Naik, senior scientist, HLL for generously sharing the data of the field trials with me.



5. This system fulfills the four criteria we set out for serving the bottom of the pyramid: a unique high technology solution, contributes to sustainable development, is scalable and dramatically alters the price-performance characteristics of a simple product such as ice cream.

6. While we still do not have an ice cream cone for Re. 1, we can get one for Rs. 3-5 today without degradation of quality.

Imagine the opportunities when this type of innovation is applied to develop a *refrigeration platform*, not just for ice cream, but for vegetables, dairy, fish, meat and more importantly medication. In addition to dramatically altering the “farm to plate” wastage (estimated at almost 10% in India), it could make many ordinary day-to-day products available to the poor at very affordable prices. More importantly, this system can be exported to other India like markets?

Access to Credit for the Poor:

Access to credit is critical for the poor to escape poverty. Caught between moneylenders and landlords, most poor in India cannot escape poverty. Several initiatives such as the Grameen Bank (in Bangladesh) have demonstrated that a well developed and a *carefully managed commercial system of micro-lending* can create the preconditions for moving people out of poverty. Can the organized banking sector create strategies for the bottom of the pyramid?

As part of my consulting with Mr. John Reed, CEO of Citibank we explored the benefits of extending the served market of commercial banks to include the poor. *Serving a billion consumers* became the short hand within Citi for a bold move to fundamentally challenge and change the assumptions behind banking and the price-performance levels in that business. The goal was not to become a conduit for disbursing ‘government sponsored subsidies’. It was an attempt to build

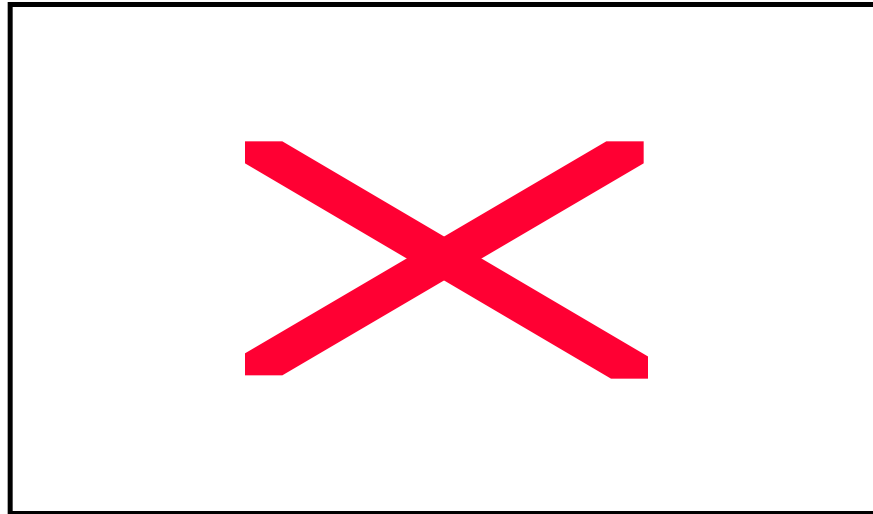
fundamentally new business models- in distribution, in price-performance levels, in features and functionality and in ease of access. That resulted in a commitment by Mr. Reed to build a totally different kind of a financial services company, which looked more like a branded consumer goods firm, a la Coke. Bangalore was chosen as a place to experiment, create and refine a new model. By developing a high technology and new distribution solution, Citi created “Suvidha” to attract a new kind of consumer- one who will be ATM oriented (rather than Branch oriented). A 24/7 solution was developed (that is better than a branch solution) and created flexibility by allowing customers to transact in any of the ATMs that are networked (so they are not stuck with one location). The experiment achieved break even three years ahead of time and the experiment exceeded all expectations. Today, “Suvidha” has more than 150,000 customers just in Bangalore. (The original concept of building a totally new business model appears to be somewhat distorted by changes brought in by the merger with Travellers). However, Citi is ready to launch its business model in Mumbai and the rest of India. ICICI and HDFC also offer similar services. Very soon no significant player in financial services will be able to ignore Tier # 3 and # 4 customers.

The strength of the business model is still plagued by the cost of building an ATM network and the literacy required for operating the ATM. What if an ATM network emerged as an independent service that a consortia of banks could own and participate in? What if identification became increasingly simple through an iris recognition engine attached to ATMs? (Recognition based on the iris in the eye has proven to be more accurate than fingerprints or other methods). What if we combine the capabilities of an ATM network with local credit checks by peers (as in Grameen Bank)? All that we have seen in the experiments by Citi, ICICI and HDFC are the beginning of a break through in thinking; the belief that the bottom of the pyramid could be a very attractive commercial opportunity and that the poor will pay for good and appropriate service. Can this innovation be leveraged in India like markets such as Brazil? Mexico? China? Citigroup can target a consumer group of 400-600 million around the world with this model. Why not ICICI? HDFC?

Building a low cost Logistics System:

While the whole country is focused on dot.coms, I would like to focus on the Dubbawallahs of Bombay². The facts surrounding the dubbawallahs, officially known as the Nutan Tiffin Box Suppliers Association (NTBSA) is an incredible success story. It is an elegant logistics system built on the public train service infrastructure. I give below some data on the scope and scale of what NTBSA does.

² I am grateful to Mrs. Rama Bijapurkar and Mr. Ashok Jain for their assistance in the research.



While there are several documentaries and newspaper articles about the NTBSA, there is very little general appreciation of the accomplishment that this group represents. For example:

1. What is the coding system that allows 5000 “semi – literate” (7th class level of education is a prerequisite to be dubbawallah) to transport 175,000 boxes in a three hour period, through 25 km of public transportation involving multiple transfer points at 6 sigma level of quality? At a minimum they have to aggregate and sort twice – at the point (train station) of origin and the point of destination.
2. How are they organized to deliver such high performance? What is the internal governance structure?
3. What are the economics of the system? (or to ask a currently popular question: What is their business model?)
4. Is the model scalable? Can they double their capacity and deliver, for example 350,000 boxes a day?

We can ask a host of similar questions. The NTBSA is a model of managerial and organizational simplicity. The basic unit of organization is the individual who is responsible for 30 customers (30 standard dubbas make up a basic load/person). Each individual is part of a team. A team consists of 20-25 individuals. If the business expands, they create new teams. The team leader (a role that the senior most person in the team typically assumes) is responsible for the efficient functioning of the team. Each month the group’s total earnings are pooled and divided equally among all team members including the team leader. Each dubbawallah is a businessman in his own right.

These teams (200 of them currently) elect an Executive Committee of five that govern the entire cooperative. *There are no intermediate layers between the team leader (part of the team) and the Executive Committee.* The Executive Committee is primarily involved in conflict resolution, setting the social agenda

and administering the welfare activities associated with the cooperative. The teams are, therefore, self - administered work units who share a common agenda with other teams. The entire system is self-regulating and totally scalable.

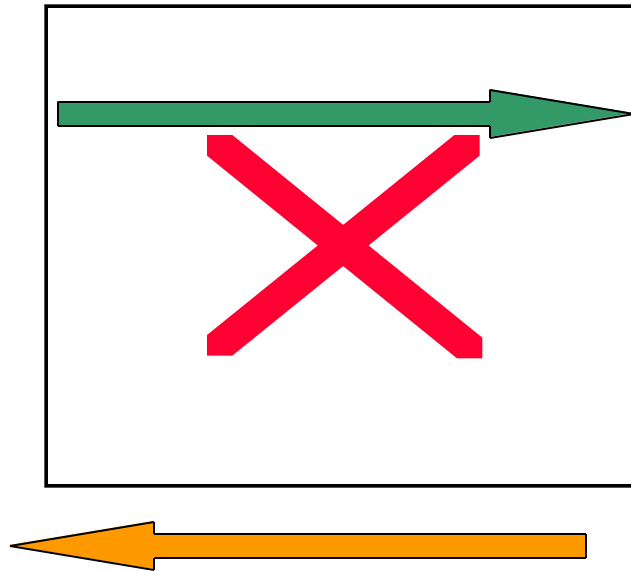
All the team members hail from the same villages around Pune district. They have a strong social bond, common language, and pride in what they do. Each new recruit has to pay up to 7 months income to become a member of the team. Each one makes a conscious choice to belong. This amount is distributed to all the members of the team which the new recruit wants to join. The strength of the system depends *on common protocols, disciplines, and a shared agenda*. There is no organizational structure, managerial layers, or explicit control mechanisms.

The coding system is extremely logical and simple as well. The top of the box becomes the place where the coding system is outlined. The *logic of the coding system is universal*. However, each team has the freedom to choose the symbols that is consistent with the logic – characters in any language, symbols and/or numbers. Because of this freedom to personalize the choice of symbols for each team, the team members also develop a sense of pride and ownership. (Needless to say it is thoroughly confusing to any outsiders and looks mystical). The symbols shown in the example given below can be decoded as:

Point of Origin:	Khandville (station)	} <i>can personalize</i>
	<i>Carrier # 8</i>	
	<i>Rakesh Apartments</i>	
	<i>Floor # 2</i>	
Destination		
Station	: Churchgate	
	Zone # 2	
Destination		
Point	: M. Building	
	Floor # 12	

In its simplicity, it is like the Internet. Team members have to follow simple protocols to be part of the system. The system is highly decentralized.

The system is undergoing several changes. Now they have an express service where they can pick up the box at 11.30 AM (rather than at 9:00 AM) for a premium. There is a new business evolving around entrepreneurial women cooking for a large number of customers and using the NTBSA as the delivery mechanism.



If the system is so efficient why just use it for food? What if we marry this logistics system with secure courier service (Angadias of Gujarat and Bombay) and the Internet? Can we not create a new low cost, very high quality, highly decentralized system of logistics to rival Fed Ex and DHL? Can this system be replicated in other parts of the world where a good public infrastructure exists for grafting on a logistics system as in Mumbai?

Rationalize Indian Retailing?

The cornerstone of Indian retailing is the local store; small, often dusty and noisy, cramped for space, with clearly defined local peak hours, and operated by local entrepreneurs. Just in the grocery sector, it is estimated that there are more than 200,000 such stores. Can and should the retailing sector get the benefits of a low cost, high technology application such as a point of sale (POS) system? Can the fragmented grocery retailing sector benefit from the application of modern tools of inventory management? What level of working capital can be released in the entire system, if we applied modern tools of system wide stock management? It is estimated that the working capital currently employed in India is equivalent to an entire year's GDP.

A POS system that is unique in that it combines high tech features at low cost and customized for small retailers is being tested by TVSE³. Some of the interesting features of this system are:

³ I am thankful to Mr. Gopal Srinivasan, Managing Director TVSE and Mr. P. Parthasarathy and his "tireless and imaginative gang" of developers for the data regarding the innovative POS system

1. Stock management with prompt and alarm for low stock items
2. Calculation of slow moving items
3. Sales return handling
4. Payments – cash, credit card (can accept but not verify)
5. Bill printing in multiple languages to suit local needs. Today it can print English and 11 other Indian languages.
6. Pricing and ability to change prices
7. Handling petty cash
8. Power backup
9. Hand held bar code reader
10. Internet enabled

and a host of other features. The system will be priced below \$ 1000, an order of magnitude improvement compared to anything available in the rest of the world. The system will be deployed widely in a large number of installations, starting from Karnataka and Tamil Nadu.

What does this mean? A robust POS for a fragmented grocery retailing system that can exploit the benefits of the Internet (therefore, networked) and creating the capacity at the local level to manage stocks. Essentially, this approach enables the fragmented system to reap the benefits of the integrated grocery chains of the West, without destroying entrepreneurial and low cost local operators.

Can such a system have applications in other areas- such as Pharmaceutical retailing (where entrepreneurs have to keep detailed records in addition to stock data and bill printing etc.) or in the textile trade? Can such a system have a market outside India such as Brazil, Mexico or China ?

Revolutionize Health Care?

The quality of health care available to the poor in India is appalling. Take for example, eye care. Out of the 30 million blind people in the world, 6 million of them are in India. An additional 12.5 million are estimated to suffer from poor eye sight. Most of them cannot afford to go to an urban hospital. Eye camps are great but the quality wildly varies. More importantly, access depends on when and where the camps are held. Can we develop a less than Rs. 500 cataract operation that includes the implantation of an intra-ocular lens?

Aravind Hospital, head - quartered in Madurai, Tamil Nadu, has developed a system of eye care that is quite unique. The elements of the system are:

1. Access to the patient through free eye camps. They hold more than 1000 eye camps a year
2. Transporting patients to hospitals (to ensure quality) and providing them boarding and lodging

3. Creation of a work flow (which resembles a fast food chain) –a consistent but repetitive work pattern by a team of one doctor and two nurses to operate about 50 patients/day)
4. Social workers to teach the patients and the family on good eye care in local language.

The Aravind model has been very successful. They operate over 200,000 patients per year (making it the world's largest eye care operation). The entire operation is commercially run ***and is highly profitable***. More than 60 % of the very poor get free care and 40% pay about \$ 10. 00 compared to \$ 1,600 for Medicare in the USA.

Can this model be franchised to other parts of India? Can the Aravind model be used in other countries with similar problems- very poor patients living in geographical areas that are not easy to access? In fact, the Aravind model is very relevant to most parts of Asia, all of Africa and most of Latin America.

Health care issues in India present a major opportunity for innovation. Consider for example:

Consider the spread of HIV and AIDs in India⁴. There are probably more than 4 million infected in India and the number is growing. This represents more than 12% of the global infected population. The intensity incidence is very pronounced in Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu. HIV in India is primarily spread through heterosexual contact. Not surprisingly, the truck routes are major conduits for the spread of the disease. The economic consequences of the disease to India are significant. Dr. Lalit Nath, Director, All India Institute of Medical Sciences, New Delhi, estimates that ‘the AIDS virus.... is costing the country about \$ 13,8 billion a year’. Estimates vary. Life- time costs of care per person may be two years wages- Rs. 24,000/ person⁵.

While NGOs labor diligently to help educate, track and treat the disease, there is yet no public debate. Why cannot India pioneer methods to systematically monitor the spread of the disease? Why can't we develop inexpensive and totally reliable testing methods (say Rs. 5/test)? Why can't we track the infected individuals through the course of their disease? Why can't we commit to treatment modalities that do not cost more than Rs. 10/day?

I recognize that the immediate response of professional researchers is likely to be: “You do not understand HIV. It is not possible”. Yes, I see this as no different from a Re. 1 ice cream cone, a Rs. 1000 banking deposit, a Rs. 200 logistics service /month, or a Rs. 500 cataract surgery. As managers and public policy makers we have to commit to providing *commercially viable solutions to the*

⁴ I am grateful to Dr. Amita Bhatt of John Hopkins University for valuable assistance.

⁵ Partnerships for Health, Wednesday, June 7, 2000, Washington, D.C.

bottom of the pyramid. Needless to say there is a global market for any viable method of HIV detection and treatment.

India represents a great opportunity for innovation in health care. India has a large incidence not just of infectious diseases but high rates of diabetes, cardiac problems and stress. These present opportunities for innovation.

Abundant Opportunities but Limited Imagination:

The most intriguing thing about India is its sheer size and the nature of problems facing the bottom of the pyramid. Each one of the problems can be turned into a major test bed for innovation. One can imagine a long list of opportunities such as water usage, quality and conservation, pollution and waste management. Moreover, India's poor have demonstrated that they are ready to adapt new technological solutions, if they are in their self-interest. The potato farmers of UP and Bihar are willing to use satellite images of plant stress downloaded to them on the Internet to develop their unique version of "precision farming". The fishermen and women of coastal Tamil Nadu are willing to use satellite images of schools of fish in the ocean to develop their fishing strategies. No one has difficulty accepting the use of cell phones. *Should we still believe that it is the poor at the bottom of the pyramid that are not ready or the elites of India who are unwilling to change their beliefs about the opportunity?*

India is not opportunity or resource starved but starved of imagination. We have to start with that assumption we have to create a global laboratory for innovations for the world's poor – a potential market of 4.5 billion people. I also firmly believe that these innovations – especially ones that are focused on sustainable development – will become standard practices in the developed markets as well.

Moving Forward:

I believe that moving forward requires a significant shift in mind set not just of managers and entrepreneurs, but of politicians, NGOs, and bureaucrats. The focus should be on experimentation and not further refinement of models and solutions that have not worked. We need to move from the "zone of comfort" to the "zone of opportunity". *Generating* new ideas, and experimenting are important but I would place a much higher value on the ability to *generalize*. The capacity to generalize (or building a theory of why something works) is basic for scaling up. Scaling up demands that we know 'not just how but why'. Transporting business practices across regions and across the world cannot be done without a capacity to generalize. This also means that we *celebrate innovations*, and give them *visibility* such that others can extract the principles and apply them elsewhere.

None of the examples I have given here have become a global opportunity yet. They are all in various stages of development. Most of them are new initiatives (except the Dubbawallahs). All of them will undergo a transformation and morph

into something different from what I have described. But all of them are examples from India. They all focus on the bottom of the pyramid. And all of them have the potential to be global opportunities. All examples point to some common themes. Let us examine the nature of the mindset change that these examples demand of us:

<u>From</u>	<u>To</u>
Poor as a problem	Poor as an opportunity to Innovate, a global market of 4.5 Billion
Poor as wards of the State	Poor as an active market/consumers
Old technologies	Creative bundling of the most advanced technology with a local flavor
Follow the West	Selectively “leap frog” and innovate
Focus on Resources and Constraints	Focus on Creativity and Entrepreneurship
Capital Limitations	Limitations to Information and Access
Efficiency in a known model	Innovation of a new model

None of these changes are easy or obvious. I am realistic enough to know that these shifts in mindset will not happen overnight. My hope is that we will start the debate and the experimentation. If enough entrepreneurs experiment and succeed, it will give the country the confidence that is needed to move forward. The success of the software industry is a good example. A few entrepreneurs broke the mold and challenged the status quo with spectacular results. I expect to see the same in the area of serving the poor of India and the world.

The challenge of the less fortunate has been with us since the nation was founded. I think Nehru eloquently reminded India of her most basic task in his famous speech at Independence: “...the service of India means the service of the millions who suffer. It means the ending of poverty and ignorance and disease and inequality of opportunity. The ambition of the greatest man of our generation has been to wipe every tear from every eye. That may be beyond us, but as long as there are tears and suffering, so long our work shall not be over.”

The sheer mass and the resilience of the poor must give us confidence that they do not want to be left behind and that they will do their best. It is my hope and dream that someday soon all the people of India and the world will have access to a minimum quality of life. That is the obligation of all of us here today - the privileged few. I would like to end by posing the same question Nehru so prophetically posed more than 53 years ago: “are we brave enough and wise enough to grasp this opportunity and accept the challenge of the future?”