

# Lecture Text

## V. Kasturi Rangan: Business at the Base of the Pyramid

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*(edited for clarity)*

### Base of the Pyramid Defined

My name is Kash Rangan and this session is about business at the base of the pyramid. Let me give you a little bit of the background of where we are at, and then I'll dive into the matter itself. My colleague, Michael Chu and I teach this course in the MBA program. Michael Chu comes from the same world that Chris comes from, the microfinance world. Let me give you a little bit of a background as to why we do it. First of all, there's a typo which I just recognized, which is that the world is about 6.5 billion people, not 42.5 billion people. It's not growing exponentially that fast. But the whole idea is that most of what we do in any business school, including the Harvard Business School, really pertains to the top 2.5 billion people, in the sense that these are the markets of developed economies. It might be Western Europe, in North America, or even in the emerging countries. It's the top three or four cities and it's aimed at the top 2.5 billion consumers of the world. And that's most of what business focuses on because capitalists rule work, free markets rule work, and all those things, the good things we learn here, work there.

What the business at the base of the pyramid is about is the markets that exist for the bottom four billion people. There are four billion people, who operate in markets that do not look like the markets at the top of the pyramid so we call it base of the pyramid rather than calling it purely bottom of the pyramid. And why is this important? Why should we in the Harvard Business School care about these four billion people? We should care simply for our own economic reasons. The top of the pyramid was about 80 percent of the GDP of the world about two decades ago, 80/20. The world's GDP is about 35 trillion dollars, 80 percent came from the top, 20 percent from the bottom.

Today it's about 65/35 because India and China have been growing at 8 to 9 percent a year. The top of the pyramid is growing at 2 to 3 percent a year. By 2030, it's going to be 50/50. By 2030, if you aggregate the world GDP, 50 percent of it will come from those countries and emerging countries which are at the bottom. So it's important for us just economically because these are the markets where we make products, and where we sell products. These are the markets that are growing at 8, 9, and 10 percent. Our market is growing 2 to 3 percent. It is important for businesses to participate and understand what's going on here. And these markets don't look like the markets which are at the top of the pyramid. That's why Michael and I created this course.

### Three Tiers of Markets

Let's do a little bit of refinement around what this market looks like. Here, the numbers are accurate and you can see that the number of people living at \$2,000 a year and above is at about 2.1 billion. There is a whole range of cutoffs when you go to the bottom four billion, and this is how it works. We like to call this the real bottom of the pyramid; the bottom 1.2 billion people who are at less than \$1 a day. This is what the World Bank defines as the poverty line. There are a whole bunch of people who are not below \$1 a day, but are instead at about \$5 a day. There are about three billion people in what we call the submerged market.

And so the question is, can businesses operate in the middle of the pyramid and at the bottom of the pyramid? Can private enterprises create economic value for investors, and social value for the poor? Is it possible? And can you survive as a business and sustain it? That's the question we answer in the course.

I want to share some of our thinking with you. What we've learned is the following: Many businesses can survive very well by just focusing on top of the pyramid. But our premise by and large is that most businesses, because of economic pressures and the way the world is developing both through globalization and the kind of responsibilities that corporations have taken on, have to focus on the middle and the bottom of the pyramid if they are to survive and grow. This is number one.

Number two: The bottom of the pyramid is a very segmented, nuanced, and refined market. It's not as though the top of the pyramid is one, and the bottom of the pyramid is another, it doesn't work that way. The bottom of the pyramid is very nuanced. I'm sure that many of you, through experience would have a tendency to say, "This is Africa." But Africa is very different - South Africa is very different from Nigeria, which is very different from Ghana and very different from Kenya. Similar to emerging countries such as India, China, Brazil, South Africa, Turkey, the list keeps going. But people know that Brazil is very different from India, and India is very different from China and that China is very different from Turkey. So there are very segmented markets and we have to be very careful in terms of what we learn.

Number three: I'm going to share with you some examples of firms who have been able to develop business propositions in these markets, earn sustained income and provide a win/win; a win for the investors and shareholders, and a win for the customers and the poor people. And they've managed to do it for long periods of time. Now, people like me are sort of observing folks who are actually doing it and bringing this to you, and there is Chris who's actually done it. There is a practitioner sitting right there, from the microfinance world. Here, right here, Chris sitting here, smiling modestly. So they've actually done it.

Our other conclusion is that many businesses and enterprises, both global and regional, are there muddling around, but they don't seem to know how to do it right. And for every one firm that does it right, there are four firms that are muddling around. They don't know how to do it, and many times they do it out of a sense of corporate social responsibility, but they don't know how to scale it, they don't know how to sustain it, and we think that that's not good. Because...if you do it that way it's going to be shut down sooner or later. The point is, if you do a win/win, if you can show a business bottom line, and you can sustain it, you can scale it, you can grow it and you can be a real player. If you're just there muddling around, then I don't think it works. That's the fourth point. I'll share with you some nuances of each of these.

Let me start off with the first point, that the market is complex, it's segmented and that it's not like the base of the pyramid is all one market. These are the poor people, these are the rich people. What can we do? It doesn't work that way. That's because, you see, even among the poor people, folks who are at the bottom of the pyramid, they are looking for food, first of all, food security. They are looking for water, sanitation. They are looking for public health. They are probably looking for even political and economic empowerment. Many of them don't even have decision rights in their community or in the countries in which they live. They need jobs. These folks need very different kinds of things.

But the folks in the middle of the pyramid who operate in a submerged market, they have some of the basics. They have basic health care. They don't have tertiary health care, but basic and there is some education. What they're looking for is they're looking for skills. They're looking for vocational skills. They're looking for some finance to put those skills to use. They're looking for nutrition. They're looking for more than just fulfilling hunger, they're looking for nutrition. They are looking for different things, but they already have some financial capability in order to engage in market transactions.

And then, of course, when we go to the top of the pyramid, you sort of work in the free market economy. I'll share some of the nuances that I highlighted for you, along these dimensions, what happens at the top, what happens in the middle, and what happens at the bottom of the pyramid. Because ultimately, when we're talking about poor people, it's a very complex thing. Poverty is a very complex thing. It's not any one thing that causes poverty. It's not hunger, it's not homelessness—it's a complicated thing.

Let me share the first point with you. The first point is what happens at the base of the pyramid if there's market failure? Markets are not efficient in these environments. There's a lack of complete information, there is a lack of competition and there are entry barriers. These people don't even have economic and political rights. And regardless of what we say, what happens is most of the things that governments do, they do a terrific job at for the people at the top of the pyramid. When we had all these scandals in the private sector, what happened? We passed the Sarbanes-Oxley law. With Sarbanes-Oxley there is great discipline, and then auditors come in, they take a look, and the CEO and the CFO have to sign off their lives on the financial statement before the auditors can release it.

Something happens to, say, Vioxx, or something happens to some drug that causes some unknown side effects. Boom! At once the FDA is on it, there are lawsuits, and there are class action lawsuits. Boom! We take care of it. But what happens at the bottom of the pyramid is different because these folks don't have political rights, economic rights in order to speak of— what are the poor, rural peasants going to say in China about the fact that they don't have water and sanitation? Who are they going to protest to? And if they protest, you know what happens. I'm just picking China, but it can be any country. It can be Nigeria, it can be India, it can be anywhere. What happens is there are no free markets that exist here. There are very high transaction costs for these people. These people, if they borrow money, they're borrowing at 100, 200, 300 percent interest rate. There's lack of procedural fairness, there's lack of justice, so it's a very different market.

And so firms that go to operate in this market should realize that these free market capitalist structures, property rights, all these things we assume, do not exist. At the top of the market, we consumers are on an equal footing with firms. People might find it difficult to believe that it's true, but we are on equal footing with firms. Firms make these products and services. We as consumers go and buy those products and services. If something is shoddy, we don't buy it. And in the long run, firms that don't create value go out of business. That's the free market law. Unless you're creating innovation and value, you cannot survive in the market. Because if you don't, a competitor comes in, they create better value, we as consumers switch over to it and this firm dies and leaves the market because we are on equal footing.

But if you're not on an equal footing and if the markets are inefficient...the poor don't have access to anything else. If they have to borrow money, they have got to go to the

pawnbroker. That's the only option they have. The pawnbroker says, "You've got to pledge your jewelry, you've got to keep this stuff, you do all of this—and I'll charge you 300 percent interest." Do they have a choice? No choice, no choice.

Health care - Oh, you get free health care, the government provides you free health care. But then you've got to walk an hour and a half, wait for another four hours and then if you're lucky, you see a doctor. On paper public health is free in most of these emerging countries, but practically, if we really talk about the practicality of it, nobody really gets health care. What I'm saying is that these markets are very different, and no matter what we do here, businesses have got to realize that it's not the free market capitalism and the market efficiency that plays out, so that they'll be very careful when engaging in those businesses.

## **Creating Market Infrastructure**

Let's get down to it. I'll give you some examples all the way through. But the fundamental point we want to make is, if you take care of the needs of the poor people here in terms of health, water, food, security, human rights, education, etc., then what you're really doing is you're creating a market of consumers who are empowered and who can start acting like consumers and drive market efficiency as they go up to the middle of the pyramid. In a sense we are trying to create the market infrastructure, we are not just marketing to people, we're not just going and saying, "What do you want? Can I create a product and service for you?" That happens when the market infrastructure exists.

When there's no market infrastructure, you have to really create the market infrastructure through the help of these folks, and then when you create a platform that looks like a market, market efficiency starts coming and these folks advance and then act like rational consumers in a rational market. It's a very different marketing task. It's not "Let me apply the four forces of Michael Porter's strategy. What does the market want? Can I create a product at a cost?" It doesn't work that way. You have to go create markets, and in order to create markets, you have to take consumers along with you. And then you hope that this transition happens.

In order to illustrate these examples, I'm going to talk about four things. How do you create a fair market? How do you create access, affordability and appropriateness? What happens when you try to make profits with poor people? And it's a very combustible mixture, one has to handle that. Because some people might put an ethical background to it, but that's not the case. Unless you make a profit, you cannot scale, you cannot sustain it. And what kind of collaborations do you need in order to create the market infrastructure? And what do you do to empower the poor people and make them act like consumers so that you get the feedback and really, you get to know what's on their mind.

I selected five cases from the course, two that address the middle of the pyramid, and three that address the bottom of the pyramid.

## **Unilever**

Let me start off with the first case of Unilever. Hindustan Lever is a Unilever subsidiary in India. I picked an example from India, one from China, I picked one from Philippines, and I picked one from Kenya.

Here is the story of Unilever in India. Unilever's sales in India are about \$2.5 billion, and around about, say, the late 1990s with the world globalizing and markets liberalizing, India opened up its economy. They said, "Yeah, foreign investment is fine," because until then, it was a closed economy and it was very hard for multinational companies to invest in India, both in terms of hard investments, investments even to the stock market and so on. India opened the economy. And when India opened the economy, all of the consumer packaged goods looked at 1.3 billion people and they said, "Wow! There are 1.3 billion people in this country called India." And the top of the pyramid alone is as big as the United States. There are 250 million people who are at the top of the pyramid. They said, "Wow, our markets are growing at 2 percent. How much more shampoo, soap, toothpaste, Pampers, paper tissues and toilet paper can people buy in this economy?" And we sold as much as we can. Now, let's go to these 250 million.

So Procter & Gamble entered the market, Henkel entered the market. About ten multinationals entered the market, and just imagine Procter & Gamble enter the India market and Unilever has had a monopoly there for a long time because they entered in 1920. They've been there for a long time. P&G comes in, Unilever is there.

P&G has got the same product line as Unilever. In many markets, they seem to bring the superior brands. They say, "Unilever, come on! Move out of the way! I'm going to go after your markets, and let's price compete. You have a detergent, I have a detergent. You have toothpaste and I have toothpaste. You have oranges and I have oranges." And they start competing on price. And when you compete on price, when you go to a new market like that, where do you go to? To the same top five or six cities, right? You go to Mumbai, you go to Delhi, and you go exactly to the place where you have westernized consumers. You compete like crazy. There's price competition, profits start to slump.

To Unilever, which has had a monopoly, it seems unbelievable. They had 40 percent market share. In consumer packaged goods, can you imagine 40 percent market share? They're 40 percent market share. Why? Because the markets are completely protected, they were the ones who made quality products, and they sold to the cities and to the urbanized consumers. They said their 40 percent — P&G comes in, price competition and their profits start slumping. And what do you think the business leaders are saying? Pack up and go home? No, you've been there for 40, 50 years. You're coming in...a multinational competitor is coming in. What do you do? You say, "Look, I'm right here. I have been in this country for 50 years. The top 250 million consumers are saturated with price competition, but there are another billion consumers down here! And I have access to those markets." Why? Because Unilever has one million retailers they sell to. There are ten million retailers on the ground, and Unilever has one million. They go to 7,000 stockists — to one million retailers, and they say, "We reach only 250 million people, let's go to the next 750 million consumers." And they start a program to reach the next 750 million consumers.

And they did the calculations and the calculations showed that if they go to the bottom, this part of the pyramid, the market size, if you sort of include the semi-urban market, is just as big as the top of the pyramid. So, there is another \$2.5 billion worth of sales they could pull off if they go to the bottom of the pyramid and they say, "Let P&G fight it out here, we will go to the bottom."

Now, when they go to the bottom of the pyramid, what does Unilever have to do? They have soap, shampoos, toothpaste. They got the same thing. Give me a strategy. What should they do? If you're the leader of Unilever there... Come on.

**KASTURI RANGAN:** Yes, Jane?

**AUDIENCE:** Lower their price.

**KASTURI RANGAN:** Lower their price. Beg your pardon, Laura?

**AUDIENCE:** Reduce pack size.

**KASTURI RANGAN:** Reduce pack size. And why reduce pack size?

**AUDIENCE:** Because then you can sell basically— Lower price per unit, but you can still make some margin on it.

**KASTURI RANGAN:** The margin. You are right on, in the sense that you're selling to the poor people. Price per price, ounce per ounce, you cannot sell it at the same price because they are poor, because they can't afford it. It doesn't make sense to sell it at a higher price. But at the same time, they don't have cash flow. This might be like daily labor on the farm. They go to work for somebody else's farm and they collect their two, three dollars a day, so they can't buy a large size, fantastic shampoo that costs \$5.50, right? They reduced pack sizes into what they call sachets, which is like single use size. A single use size, so that they don't need to buy a big shampoo bottle, they need to buy a single size pack size, and use it two, three times a week. That's the best they can do.

Soap, detergent, everything, the pack size has to come down. But you cannot charge them a higher price for two reasons. When you make it into a smaller pack size, it costs more. The packaging costs are more per unit, so there is a tendency to charge more. Now, what happens when you reduce the pack size, but charge a higher price?

**AUDIENCE:** You can't afford any.

**KASTURI RANGAN:** Poor people can't afford it, that's one thing. But if you were to do this in this country, what would happen?

Nobody will buy it. What happens is India has got a very vibrant democracy, and there's a very active press. There are these folks called advocates and activists who are hovering around in the corners. They're saying, "A multinational company - Unilever, look what they're doing to the poor people. I mean, they are selling this shampoo at a higher price to these poor people." They can calculate. They say one ounce is one cent, ten ounces are this much. They can't charge a higher price for reasons of affordability, but also in terms of how you deal with the politics of the situation, and how you deal with the government.

You want to make money because it's a business decision. It's not as though Unilever is out there to take care of the poor people of India and China and Brazil. Unilever's investors have invested in it in order to get a return. It's a business proposition. Procter & Gamble has come in and the price competition is serious. So they've got to come up with all these innovations, smaller pack sizes, prices have to be different. How do you reach out to these

consumers? Are there any retail shops there, in these villages of 2,000 people? No, there are no retail shops and they've got to innovate on every dimension. Yes, Jerry?

**AUDIENCE:** Well, I think that they might be able to make use of the people who live there if they had sufficient capital, and buy larger sizes and then sell it maybe without a package.

**KASTURI RANGAN:** Absolutely. I think that you folks deserve a gold medal. You are hitting everything. And all I put up is a picture. I haven't even shown you a video. What they did was they went out to a village and they picked this lady out as the local entrepreneur. They said, "You're my traveling, you're my Avon lady." And they went after women rather than men because most men had jobs on the farm, etc. Most women did not have jobs. There's a high level of unemployment, plus they did not have the empowerment either. Unilever said, "We will train you to act like the Avon lady, we'll teach you how to keep your books and balance books, etc." And then they shipped goods in bulk to her, but still in small sizes because she does not have the capability to divide it all up. They shipped it to her, and they provided her financing because she can't afford to buy and act like a retailer.

They partnered with microfinance organizations in India, so that these microfinance units would give her a loan. Unilever will guarantee the loan because she doesn't have any collateral for the loan. They said, "We will guarantee the loan. You take this big pack." But the pack will have small sizes of shampoos and toothpaste and soaps and everything else. And they told her, "Go door to door." You can see the sachet that she's selling - they're holding the sachets of shampoo that she's selling door to door, to her neighbors and others. She collects cash, and she has 30 days credit. She pays a microfinance loan and she improves — Doubles her income. Her annual income was about \$600; now she makes \$1,500 a year. She doubles or even a little more than doubles her income. And Unilever has put in place something like 25,000 such entrepreneurs in the last three, four years since they started the program. There are 25,000 entrepreneurs, give them like \$25, \$30 million in sales, and the goal is to scale this to 100,000 entrepreneurs in the next five years.

Now, how do you convince consumers who have not used soap or who used tooth powder in the past, to actually start using these brands of products? Is there television? Is there media in those—do people read newspapers?

**AUDIENCE:** Street sales?

**KASTURI RANGAN:** There we go. You folks are solving the case. They have what they call the communicator, Navani the communicator, that lady in the red jacket, who goes in almost like a health care provider, not as somebody who sells branded goods. She goes in there and she's educating a group of women. Here, she's educating a bunch of children on public hygiene, etc., etc. They do it in the local schools. And here, when they do it in the schools, the school principal will say, "Look, you can't push your brand too much," but Unilever has to push its brand so, they'll talk about Pepsodent toothpaste. But the principals say, "Why don't you come in and also teach a science lesson? You become the science teacher because the schools are broke, we can't afford it. We'll let you in twice a week, you can give them a science lesson and then you can do this stuff, okay?"

There are a lot of these things. You can read it in the case, but the question I want to ask you is what are the two or three things we have learned from this?

**AUDIENCE:** The consumers at the bottom of the pyramid want to make money, too.

**KASTURI RANGAN:** Yeah, they want to—

**AUDIENCE:** The bottom level consumers...There are women there with entrepreneurial skills, and they want to make money at the bottom of the pyramid.

**KASTURI RANGAN:** They want to make money at the bottom, good. From a business proposition, yes Warren, go ahead?

**AUDIENCE:** They redefined the channel.

**KASTURI RANGAN:** They redefined the channel. You have to be very clever about it, right? It's the last mile issue in the sense that there are no roads, there are no retailers. The last mile problem, they got to solve the last mile problem, absolutely. Yes, sir, yes Carl?

**AUDIENCE:** You created value and social value at the same time because now you've got health.

**KASTURI RANGAN:** Absolutely. And in fact, if they'd not created social value, they would not have been given the license to operate in that environment. When all is said and done, this is a public school. The government funds this school. The government funds the teachers. If you just went into that environment and said, "I'm going to push my brand of products," then it becomes very hard. You've got to create social value, and you create social value by teaching these kids and those women about public hygiene. You say, "This is the way you use soap. It reduces infection. This is what you do." And you create social value. You have to solve the last mile problem. You have to put money into the hands of these poor people, because if you just go into the community, and you sell product A instead of product B, you've not enhanced anything. I mean, you haven't done anything. You've got to create wealth in the community. That's the whole point of business. If you don't create wealth, you've knocked off competitor A for competitor B and the community will not become—anything else? Yes, Michael?

**AUDIENCE:** Yes. Obviously, they reacted to the competition with Procter & Gamble in this case. What's the barrier to Procter & Gamble doing the same thing in the same market?

**KASTURI RANGAN:** You got it, you got it. There's no barrier at all. Unilever can create this model and Procter & Gamble can follow. They have the resources, they have the know-how, they know how to do this stuff, and they will follow. And here is where leadership comes in. This is where Unilever has to tell itself, "Look, I have operated in this market for 50 years. I have access to these stockists, and I sort of know what the domain looks like. I will go ahead and take the lead." And they've got to hope that five, ten years from now, as these consumers advance and start coming to the middle of the pyramid and acting like branded consumers and have this brand affinity, Unilever will maintain its loyalty and these people will buy Unilever products. You're absolutely right—there's no guarantee that Unilever is going to make a lot of money.

But a couple of ideas have really come out here. You've got to create social value, and you've got to leave wealth in the community. You've got to come up with a product sizing, etc., and you've got to watch out for what competitors might do. Martin?



**AUDIENCE:** How different is the strategy when you compare it with wider emerging markets? Because I know it would be the same in Brazil and—

**KASTURI RANGAN:** Yeah, in fact that's what happened. What Unilever did was they perfected the strategy in India, and now they have taken it to Brazil. And in many emerging markets, some of the stuff is transportable. But they couldn't take this to China. They tried to take it to China, it didn't work. It worked in Brazil because of the nature of the market system. There are entrepreneurs in these economies. It will work in Latin America, it will work in India. It was not a big success in Africa because that spirit of entrepreneurship and access to finance doesn't exist. People like Chris are there, and they are providing the microfinance access.

You need to also have the access to money. There were enough people willing to provide loans in India, there are enough people willing to provide loans in Brazil. It doesn't happen in China, so you've got to be really adaptable. Okay, this is case number one. Let me give you at least two or three.

## **Nestlé**

This is the Nestlé Company. Now, Nestlé often gets beaten up for its infant food and all the bad things they've done. Look, we can debate it, we can talk about it, I'm not here to defend Nestlé, and I'm not here to bury Nestlé. I'm just going to talk to you about one aspect of the programming that they do. And this is the milk district.

Nestlé is, as you know, a 60, 65 billion dollar company, they buy about \$3 billion worth of milk every year in order to do all the various parts that they do. And what they decided a long time ago, 50, 60 years ago, was they will buy the milk from small farmers like this person in China, this guy who owns about three or four cows, and less than 50 liters a day is his production. And he didn't know where to sell it, he wasn't getting market rates.

Nestlé went in, and they created a milk district. When they create a milk district, they go to a farming community. They tell the small farmers around in this district; there are about 30,000 farmers, they go to these small dairy farmers, and they say, "We'll buy your 50 liters, 60 liters a day." They buy it, and there is a collection point here. And from this collection point, Nestlé has a chilling plant. They chill the milk, and then within 24 hours, they transport it to the milk factory. But the milk factory cannot be a zillion miles away, it has to be within the range because there are many collection points. And they bring it, they make milk, they sell it in the local market. And depending on demand and supply, the excess supply, they make it into milk powder and that is the Nestlé farmer.

Up to 1913, the milk districts were developed in highly developed countries - and then starting in the 1920s, when Nestlé started—Nestlé is in 87 countries- all of their other markets are in developing countries, they're all developed, every one of them. They build a milk factory, which costs about 10, 15 million dollars, today's dollars -the latest factory, the one in China, was about \$15 million- they put the factory there, with no guarantee that they're going to make a single dime out of that. They put the factory, and then in order to supply the factory, they put collection centers. They need like 10 or 15 collection centers. Each of them is, again, like a million dollar investment. Then, they go to this catchment area of 10,000, 13,000 farmers. And now they've got to teach the farmers how to improve productivity. It's not just saying, "Get your cow, I'll take your milk," they've got to teach

them productivity, which means they've got to teach them techniques, technology on cattle rearing, cattle breeding and all the stuff that they do and environmentally-responsible farming. They're really putting assets into the ground. Yes, Connie?

**AUDIENCE:** Well, that is what Carl was talking about with Unilever. I mean, I like this model a lot better because it creates community will.

**KASTURI RANGAN:** There you go. It creates jobs, and it brings technology to the community. You're taking these 30,000 dairy farmers who were sort of selling their milk off and on if someone bought it, and they didn't know how to do it, and you're bringing it together. That gentleman you saw, who had three or four cows at the start of the milk district four years ago, now has 13 cows. Right now, Nestlé employs 300,000 dairy farmers. Thirty-three percent of the \$3 billion in farmers like that. This is the technology they bring in. And when they do that; that's the point that you're making Dan, when they take that to the community, there is a 3 to 4 times multiplier in the community because what happens is in order for the farmer to transport the milk, you need bicycles. You create a small bicycle-- And then there's a shop that comes in for bicycles. Now, these trucks that take the milk from the chilling center to the milk factory have to come back into the town. When they come back, they get farm produce. These villages now get access to quality goods, which come back. And you set up retail.

And then, of course, you need the drivers in order to get the trucks back. You create employment, you create jobs. You need managers to manage the chilling plant. And so doing all this offers three to four times, plus they pay taxes on the factory, the chilling plant. Look at what it has done, it has expanded the economy. This was your point, Carl, right? The Unilever approach is fine, but this approach is better. That's the point people are making.

I have focused on two examples, which are at the middle of the pyramid in the sense that when Unilever went into the community and educated the people and told them about these public hygiene products and created the Avon lady, provided the incentive for the lady and provided the small pack sizes, etc., they were already able to tap into a market. There was already an inefficient market in existence there. The point is these people were already surviving in an inefficient market. They were buying tooth powder, and they were buying very low quality detergent. They were washing their hair with detergent, a cloth detergent rather than with soap. That's what they were doing, but in a very inefficient market, they still get supplies intermittently.

So, Unilever went into this very inefficient market. They brought resources, and they brought quality products. And when they do that, it improves the life of the people, it creates public health, and it creates some jobs. It puts these hundred thousand entrepreneurs in place. All that is fine, but the effect is not as much as if you go further down and really create the wealth, the kind of wealth that Nestlé has tried to create for the milk district. These are the two approaches when you are operating in the middle of the pyramid.

But what happens when you go to the real bottom of the pyramid where there are these poor people who don't have cows, who don't have any assets, who don't have any access to product. These are really squatters. And they're saying, "Just give me basic water and sanitation." You know the meaning of development goals. Forty percent of the developing countries don't have access to water and sanitation. Sixty percent don't have access to

sanitation, 40 percent don't have access to water, right? There are 1.5 billion people who just don't have clean water. And we, of course, have a lot of water. We get clean water from the tap with fluoride and everything, and now we've got this bottled water as well. I think we have an excess of water.

Now, do you think you can bring business techniques to address these things like water, and basic health? Business techniques work when you're selling soap, shampoos, and creating wealth. People will pay because you pay them for milk. Water is a human right. What do you think? Dan, they can make money? No?

**AUDIENCE:** Desalinization.

**KASTURI RANGAN:** Beg your pardon? Yeah, technology...Technology can bring a lot of water, right?

**AUDIENCE:** Alternative energy to power?

**KASTURI RANGAN:** That's right.

## **Manila Water**

But there are communities where water exists, like in Manila, for example, which is what I'm going to talk about. In Manila, in the Philippines, they have about 13 million people. East Manila has 5.3, West Manila has 7.7 million people. Here was this water company of the government of Philippines supplying water to these 13 million people, or trying to. They were not supplying water to 13 million people because the poor people, if you're a squatter, if you don't have land rights, etc., you don't even have a house, so you don't get a pipe, you don't get water. You've got to go walk a couple of miles or so to get water. Or, there are these vendors who come and supply water. They come in trucks, they supply water. Only if you have a proper dwelling, property rights, you get this stuff. If you have the pipe, you get the water.

The Manila Water supply company is to supply water to about half the city, about five or six million people. The other six million people didn't have water. They got it through other sources. And the company was broke. The government water company was broke. They had almost a billion dollar debt, an \$880 million debt. And it was very poorly managed, too. There were civil servants, government officials managing it. And then a new president, President Ramos comes in. He looks at this water utility, not making money, and doesn't know what to do. He throws it over the wall and says, "You guys, private guys, private sector, why don't you businesses pick it up and run with it? You know, you do all this talk." Here is Manila Water Company, they are a conglomerate, a big conglomerate, and they do real estate. They are into hotels, and they are into those kinds of property developments. Said, "Why don't you guys run it?"

Jaime Ayala says, "Yeah, I'll run it. I'll take it over, I'll run it." He takes over, they break up the concession into an eastern concession and a western concession. Jaime Ayala takes his 5.3 million people—and you'll all be proud to know that Jaime is a graduate of Harvard College and is an MBA from the Harvard Business School. So, Chris, you're in good company.

Jaime says, "Yeah, I'll take it." He takes this 5.3—but he says, "A business, I'm going to run it as a business," right? He didn't take it as a defensive mechanism to say, "Look, if I don't take this what will the government do to my real estate business? What will they do to my property business? What will they do to my telecom business?" He said, "No, I'm going to take it." And he tells the guy, "I'll take it, but I hope you know that I am a businessman, that's what I do for a living. And I have investors. I have people who invest in my company, and I need to give them a fair return. I'll run it like a business." This government says, "Fine. You run it as a business, but there'll be a pricing authority, just like our regulatory authority, like our energy. The regulatory authority will come in and we'll sort of check on your investments and what you're doing, and we'll give you price increases if that's what the investment demands. But we're going to do that stuff."

And so Jaime Ayala takes it, and this is what it was. Sixty percent of the residents have access to piped water. Two million people, especially the poor people, didn't have access to any water. They would go out a mile, or two miles, and collect water from a public tap, or there were these secondhand—I mean people who bring water in trucks, who bring water, and disposable containers, and that's what they would do. The point that was being made was, "Why don't you bring it in wholesale and give it?" They would take the stuff, they would collect that.

And what Jaime did was, he said, "Look, the first thing I'm going to do is I'm going to work with the government to get a law passed and I don't care whether people have tenancy rights or whether they have property rights or not. I want to be able to bring a pipe into every home, to these two million people, to these poor people. If you want me to do this concession, Philippine government, I need to give a pipe to every consumer. They are temporary dwellers, they are squatting, and it's illegal property. But if I see somebody there and they want water, I'll bring a pipe to them. It's not the proper copper pipe it's the blue polyethylene pipe, PVC pipe. The government said, "Is that a condition?" "Yes, it's absolutely a condition. I want these two million poor people."

The government said, "I'm very happy. These are the folks who are going to vote for me in the next election, so I can claim that I brought water to them, right? Great, take it." He takes it, and he brings a pipe to every community. Now, when he brings a pipe to most of these two million people, they start getting water in their home, right? Now, how are you going to collect money from them? You're giving away more water to these people, right? You've expanded your production, and you can't collect money. How is this a business proposition? This looks like charity to me.

Yes, Manny, what would you do?

**AUDIENCE:** Well, they just weren't just paying for water before because they had to pay for transportation.

**KASTURI RANGAN:** There you go—you're absolutely right, Manny. They had to pay for transportation. This poor lady had to get up in the morning at 5:00 to go fetch water so that she could take care of her husband and kids. She went an hour, hour and a half to get water, number one. It was not even clear that it was clean water. She didn't know where to get it from. And the most important thing is that these people were paying five, six times because this water was coming from the same Manila water plant.

What happened was that there are these illicit operators who would break into the government pipes. Basically what had happened was that there was this clandestine group, the water mafia, who would break into these government pipes at night. They'd break into the connection, fill up their truck with water, close off the pipe, and then they would take the truck the next day and sell water to these people. The production was coming from the same source, except the government was not getting the revenue because they had sort of illicitly tapped into it, number one.

Number two, they took this to a collection place. And because they were breaking the law, they couldn't do it in an open place. The place did not even have any compliance in terms of standards of water cleanliness, etc. They took it to some back room somewhere in a remote area, redistributed it, put it into plastic bottles, jars, cans, etc., and sold it to these poor people. All this cost money because they are businessmen—the water mafia is a business, too and they're trying to recover their investment. These poor people were paying a higher price than what Manila Water charged them, right?

Now, look at this business. Your production hasn't gone up that much, except that your production is now being channeled through proper sources because it is not being illicitly tapped. For the same amount of production, suddenly you're getting revenues on this part of the market where you were not getting a dime since somebody else was breaking into it. So, you get scale, you get revenues, increase production. Now how do you collect money from these people? How?

**AUDIENCE:** I assume meters are expensive, so you meter at the community rather than the individual level.

**KASTURI RANGAN:** Got it. You folks are absolute geniuses. I mean, you didn't need a course. That's what they did. Meters are very expensive, and you can't put one in every home. What you do is you put in a community meter—you take this whole community. Here is a settlement of 100 huts and you have the community chief, the manager, say, "You be in charge of the collection. We will come every month and you pay us what the community meter is all about." Now, suddenly this person becomes empowered in the community. There are water supplies to these 30, 40, 50 huts. And then collectively, they collect money. And Manila Water pays this person a collection fee. And the community agent collects it, but they do more than that. They work with this community leader, develop skills, also teach them stuff on hygiene, teach them stuff on sanitation, how to dispose of the sewage. They start doing this stuff.

And by doing this, this amazing company called Manila Water, the non-revenue water was 63 percent. That has dropped to 35.5 percent. Previously, 65 percent of their water they could not bill because they didn't know who was getting the water. Now, for 65 percent of the water they supply, they know who to bill to get the money. And just imagine, with the same production, you've started to build 30 percent more consumers.

From 60 percent access, because they put a pipe everywhere from '97 to 2005, they went from 26 percent to 95 percent access to water. Non-revenue water has dropped. But to do all this, they had to lay down all these pipes, they had to get all these households in. And to cut a long story short, revenues are about \$180 million. Their earnings before interest, taxes and depreciation are about \$100 million. Their net income is about thirty percent net income. And the poor people are getting water more conveniently, and access at a lower cost than what they were paying before, and this company is making a 30 percent margin.

## **Aravind Eye Hospital**

Let me go to this example. Let me very quickly tell you the story. A lot of things have changed with this.

Here is a hospital in India, the numbers are as follows. This hospital today sees two million outpatients, two million. And it does 250,000 surgeries a year, 250,000 thousand surgeries. It's got five hospitals here. And of this 250,000 surgeries, 60 percent are done free of cost for the poor people. This hospital has got a cross-subsidy model. The other 40 percent are the wealthy patients who come in and take surgery, and they pay a surplus. And that subsidizes the 60 percent who can't afford it. It's a huge scale operation.

Manila Water Supply Company, I told you they make a 30 percent margin. They make 30 percent because they charge everyone. Here is a company that doesn't charge 60 percent of the people and they provide health care, quality health care. What do you think the net income is, percentage, operating margin? Forty percent pay, 60 percent don't pay, so 250,000 surgeries, 60 percent of that, 150,000 surgeries free, 100,000 surgeries for two million outpatients- 60 percent. They see 1.2 million patients for free, the others pay. The net profit margin is— how many of you think that it is 10 percent? 20 percent... how many of you think it is anything at all? These folks make a 55 percent operating—55 percent.

Carl is saying, "They must be fleecing the other people, the rich people." No, that's a possibility. That has to be the case. Why do these rich people go to this hospital, pay this huge price? Don, did you have an answer?

**AUDIENCE:** The quality of care?

**KASTURI RANGAN:** That's the only reason they have to go, because this is health care, folks. You know, Indians are great—I'm from India, my countrymen are terrific, my mom is terrific, she's great. She wanted to have surgery in the Aravind Eye hospital, not because she wanted to donate charitably so that she could take care of her countrymen and women. She went there for her—I told her, "Mom come on, let's go to the Mass Eye and Ear. It's better for me." "No, I've got to come all the way, sit on a plane, have surgery, and recover." She said, "No, Kash, take your own time. I'm in no hurry. It's cataract surgery. But the next time you're in India, I want to go to Dr. Weisel." Why? Because in her mind—why is it the best surgery? Because they focus factory, they do 250,000 surgeries a year. Each surgeon does 1,300 cataract operations a year. A surgeon in the U.S. would be lucky to do more than 50 operations a year.

A surgeon in India sitting in a private hospital across the street doesn't do more than 150 surgeries. Why does McDonald's make the best French fries in the world? Because they're flipping a billion French fries a day, so they know how to do it. It's very simple. It's as simple as that. It's a focus factory. The quality is great. And when you have the quality and scale, the people who go there pay the market price. They don't pay above average. They pay the market price, but they go in huge volume because of the quality.

And because they do 250,000 surgeries, they can bring their costs down. The cost of cataract surgery in the Aravind hospital is \$18, one-eight dollars. The cost of cataract surgery in the U.S. is \$1,800. There it's \$18. That's what it is. Cataract surgery in the U.S.,

when you add up all these things, is \$1,800. This is \$18. They keep the cost really low. It's an open system, and basically they say, "Look, we are not going to waste our time trying to find out, you know, give me your IRS return, and that." You come in, Carl comes in and says, "Look, I can't afford this, I'm a free patient." Fine, you're a free patient so you go to that queue, right? They have free hospitals, and they have paying hospitals. If you're free, you go to that hospital, you stand in line. The doctors will see you, we will treat you. If you can afford to pay, you come to this line. It's a little bit like the airline. If you're a paying patient, you get an air conditioned room, you get a warm meal. If you're a free patient, you go to that hospital, and you get a little mattress and a small pillow. You sleep on the floor, and then there is a cafeteria. There's the hospital cafeteria, you go buy whatever you want.

That's the only different situation. But the doctors who do the surgery are the same. The back room is the same. The front room is different. In the back room, they all get together. It's the operating room, it's the same. It's the same surgeons, and they are on rotation. Monday, Tuesday, Wednesday, I'm operating on paying patients. Thursday, Friday, Saturday I'm operating on free patients. All that discipline they reinforce. And they do quality process checking. For the poor patient, they track the quality. They say, "Ah, there were so many defects. You know, we did 100 surgeries in this batch. How come six of these people have this complication? Let's get the surgical team back," the head surgeon will come and retrain. It's the Toyota production system. They sort of check the things. They run it like a Toyota production system. Costs are low, vertical integration. They make their own lens. The intraocular lens costs about \$150. When you do a cataract, you put in an intraocular lens. They make their own lens and they make it for five bucks, they make it for \$5.

The point I'm trying to make is, since we don't have too much time, this is what you should see. They started the hospitals in 1976, hardly breaking even, hardly breaking even. And then boom, you can see the revenue just takes off like a rocket. These are their costs. And the margin is 55 percent. And they are opening hospitals by the day. At the time some of you did the case, they were doing like 100—When I first went to work with them in 1993, 15 years ago, when I went to work with them, they saw 100,000 outpatients, did 15,000 surgeries. Now you can see in about 15 years, they're doing 250,000 surgeries. They're now expanding it to Nigeria, Sri Lanka, they're into Nepal, and they are into other parts of India. They're in five foreign countries, just exporting the management model.

## **BBOP Success Factors**

Doing business at the base of the pyramid crucially depends on some things. The last mile, you need access and infrastructure. The milk district, the Shakti model, don't forget the invisible hand of the local infrastructure and what the government brings to it, very important.

The product has to be affordable, and the pricing has to be affordable. The whole idea of sachet marketing is what Shakti, the Unilever program is, pricing and procurement. But you need to sustain it, and you have to create value, right? Social value creation- Quality is valuable for the poor. But the other important thing is you need the internal culture. With a lot of the companies, where they go wrong is that they don't have the internal culture of serving the poor people. If you're always serving the top of the pyramid, the kind of market research, the kind of contact, the kind of innovation you think of, is very different than when you have contact with the people at the base of the pyramid. You have to think in

terms of let's put in a community meter. You have to think in terms of let's change the product package. You have to think in those terms. And this only comes when you're connected to the community. That's a problem. It's the internal culture that holds back a lot of these companies, and I want to underscore that.

But also, I want to say that you need scale. When you have scale, you get the profit margin. And when you have scale and the profit margin, it's sustainable. But let's not forget that businesses cannot do it by themselves. Manila Water is very successful because it worked closely with the government. If you think "I'm a private enterprise, all governments are inefficient, go out of the way," you cannot make money at the base of the pyramid because government has all these assets that are lying on the ground. You've got to work with the regulators in government to get a very proactive and very forward-looking arrangement with the government. If you do that, you can bring health care and Aravind Eye Hospital can make a 55 percent margin. You can bring water, and Manila Water can make a 33 percent margin. You can provide jobs. Nestlé makes a good margin, and you can provide products and services and Unilever makes a good margin.

### **Audience Questions and Comments**

Let me stop there and take questions, answers, or comments from anybody. Chris, go ahead.

**AUDIENCE:** Your work with the Aravind Eye Clinic and others has really inspired the microfinance industry to look at value-added social services that we can distribute down this infrastructure we've built up with microfinance. So in other words, microfinance is a great distribution channel for other than just loans, savings accounts and micro insurance. But rather now, we are financing sustainable schools in the developing world. These are budget, slum schools where we're making thousand, two thousand, five thousand dollar loans, five thousand dollars builds a classroom in the developing world. These are run by micro entrepreneurs who are providing for their family by running these schools. And their test scores show that they score, the students from these schools, score significantly higher than the students that are going to the other, free public schools which are actually much more expensive.

In health care, we're also making thousand dollar loans to nurses who will set up a micro pharmacy and they will then buy an inventory of goods, of pharmaceuticals that will treat the five or six most common ailments in Africa. So patients will come in, that nurse diagnoses them, treats them right there with the pharmaceuticals. And with our micro insurance, we can be the third party payer. We provide our micro insurance finance clients incomes that give them the opportunity to pay us an HMO fee, a health insurance fee. We pay these micro pharmacies, which then makes them sustainable and the poor receive health care. And with all of our sustainable operations that are growing, if we go away, they'll keep going. As we know, the typical model is to throw freebies out, just put them out here. And then when the NGO goes away, everything collapses. If we go away, these will continue to work and operate well because they're all sustainable.

**KASTURI RANGAN:** That's exactly the point. I mean, the previous model, let's bring aid into the community. Let's provide aid, let's help farmers with these inputs. But if they were given at a subsidized price, what happens after the NGO goes away? First of all, it kills local entrepreneurship. I mean, all these models create local entrepreneurship. When Chris



vacates the market, it doesn't matter. You create a local entrepreneur. This brings business skills, but working with the government and the community to bring solutions, lasting solutions. Yes, Carter, go ahead?

**AUDIENCE:** The worst thing we can do is teach the rest of the world to consume like Americans.

**KASTURI RANGAN:** Good point.

**AUDIENCE:** And it just seems to me that the opportunity here is to find ways to build business models that value efficiency, sustainability and the rest.

**KASTURI RANGAN:** Absolutely. Carter heads up an environmental agency, so he really knows what he's talking about as far as the level of consumption. Consumption is a problem. And once you get the clean water, fine. We don't need to get the bottled water and the plastic that goes—and everything that goes with it. But you need water, you need sanitation. Here is an opportunity to—because we have learned. It's not as though we were completely out there to destroy the environment, that's where our economy was—but we have the hindsight. We can look with 20/20 hindsight and not repeat the development path that we took. That's good, absolutely well taken, Carter. Are there any other thoughts or questions? Yes, Connie?

**AUDIENCE:** Have you looked at the bottom of the pyramid strategy in the U.S? There are a lot of really terribly poor—

**KASTURI RANGAN:** Absolutely.

**AUDIENCE:** —where people are entrepreneurial, if not more so. Have you had any discussions, particularly with companies, about how to—

**KASTURI RANGAN:** Connie, I think this is a really good question. Just to highlight what happened, this is the way we built the course initially. We've been building it over two or three years. We went out to those areas which are all in emerging countries; India, China, Africa, etc., but now I think our next big picture is why not bring—Botswana, for example, has got a fantastic AIDS program. Merck has been leading it, Merck and the Gates Foundation, about 110,000 people there need ARV therapy, 90,000 of them get it; 110,000 of them will get it at the end of the year; fantastic.

The question is why can't we do in Newark what we're doing in Botswana? Why can't we bring to our school systems what Chris is doing in Ghana, right? This is like the disruptive technology idea, because when we operate in our environment, somehow our mindset, the business mindset, is we bring this big model Cadillac we built for the top of the pyramid and we're taking—it's very expensive, we can't do it. But when we operate in these kinds of environments and we innovate, and oh, we can make money and we can bring this innovation. Now we're learning about how to bring this disruption into this economy. And by we, what I mean is businesses are. Merck is actively looking at these, school systems are looking at this. Microsoft is looking at providing educational software to the schools in this pyramid. They want to give Microsoft Windows at \$3, not \$300, right? All this innovation is happening and we will capture it and bring it into our courses.

Okay. Folks, we are out of time. This has been a pleasure. Thank you.