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Dear readers,

To write a brief note about the contents of this issue of Gravity focused on technology for inclusive innovation is not an easy task as there is so much to say but not as much room! I seek thus the help of technology to be innovative – in being as clear and concise as possible. My word processing software is quite sympathetic to my handicap and what you see below is a good example of how man and technology work together to produce acceptable results!

On a serious note, the governments of the world spend several millions of dollars on funding R&D in various areas and disciplines. However, much of these are in the 'organized' domain and we are now privy to the fact that an extraordinary amount of innovation and even inventions lay unidentified in the 'unorganised' sector as well. There is a significant level of innovation happening at the grass-root levels and we have no means of tapping into them, let alone the knowledge of classifying and disseminating the same. To elaborate, take the tribal communities of the Kharias, Santhals and Gonds who live in the deep forest areas of Mayurbhanj. They possess a treasure house of knowledge on the medicinal usage of the locally available plants. Do we know what the plants are and what medical miracles they are capable of causing? Another case in point is the tribal community of Koraput who have received global recognition for their contribution to conserving bio-diversity and developing climate resilient farming systems. Isn't agriculture a critical activity for all countries and are we not always worried about the MET forecast while predicting the fate of the harvest every year? Will such knowledge not help the agricultural productivity of the entire world? It is a matter of pride that such a system has been perfected and that too by Indians but perhaps an equal shame that the same has not been widely published and immediately adopted.

Having said this, what then is the role of science and technology in a country like ours? Everyone from the brilliant scholastic minds to the uneducated farmer is blessed with a storehouse of information and there has to be some way of organizing all this knowledge and experience to benefit all. That the government's policy for science, technology and innovation should be able to support the national objective of faster, sustainable and inclusive growth is moot. This is where technology in all its avatars can be most helpful. It is heartening to note that our government has begun action on several initiatives that are aimed at addressing some of India's critical problems of energy, climate, agriculture, food and nutritional security and forestry. This however, is one side of the story and it is my firm belief that science/technology/research/management community must join hands in allowing us to pursue sustainable and green growth, shift our mindsets from resource allocation to their efficient use and finally to reach these benefits to those who need them the most.

I congratulate Team Gravity who have taken the theme of this issue to their hearts and collated a wealth of articles on this topic. With inclusivity comes responsibility - we all need to do our bit – that is the spirit of inclusive innovation!

Best Wishes, Bala

Dr. Bala V. Balachandran J L Kellogg Distinguished Professor of Accounting & Information Management, Northwestern University, Chicago; Founder, Dean & Chairman, Great Lakes Institute of Management

MESSAGE FROM THE DEAN



From time immemorial, technological breakthrough has been the harbinger of change, progress and development of human society. By technology, I not only mean equipment and machinery but also newer and better ways of getting things done. While we find technological development and societal development go hand in hand, the last 3 to 4 decades have made leaders acutely aware of the fact that technological development need not and has not translated into equal development of all sections of the society. It is in this background, we must relook at technology, technological development and equity. As the famous Management Guru, C. K. Prahalad propounded, technology can be leveraged to find innovative solutions to the bottom of the pyramid, which will not only make business sense but will also enable an equitable growth.

DIRECTOR

This issue of Gravity looks at technology and innovation and now it can be channelized to bring in inclusive growth. With the happenings around the world in the form of "Jasmine revolution" in the Middle East, "Occupy Wall Street" movement in the capital of capitalism - the USA - and similar movements across the globe, including India, it has become imperative on the part of society to use technology and innovation to bring in inclusive growth.

With Warm Regards, S. Sriram

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Prof. S. Sriram Executive Director Doing Well by Doing Good.

MESSAGE FROM THE EDITOR

Innovation is a broader concept which is being viewed differently by different authors. Irrespective of how it is being viewed, the idea of innovation is to influence and change the way we live, either reducing cost of living or, increasing standard of living. It is important to bring changes in life through innovation for people at the bottom of pyramid. There is a large chunk of population living with an income of less than \$2 per day. Serving these people will demand innovations in technology, products and services and also business. This is what Prof. C. K. Prahlad called "doing well by doing good or doing good by doing well".

Most of the business enterprises focus on developing products and services for upper and middle class consumers of industrialized or developed nations. It is possible for these organizations to cater to the poor through their resources and capabilities and yet generate profit for the enterprise. Many enterprises don't do this as they lack understanding of potential demand in these markets and have failed in developing adaptable business models for these segments. The counter argument to the above proposition is that people at the bottom don't need these products. They are better off without consuming / using these products. Increase in appetite for consumption may imbalance their saving ecology.

In 2000, Stuart Hart and his colleagues created "BOP Protocol Learning Laboratories" to operationalize CKP's proposition. The purpose of this protocol is to provide a framework for engaging with the market at BOP to enable a better understanding of needs, perspectives, cultural sensitivity and environmental sustainability. The second generation BOP strategies refocused on innovation and long term strategy (than repackaging and adapting products and packaging to rural and small town market). The strategists encouraged business co-venturing where poor people were involved as partners. The financial model of the BOP 2.0 model is based on high volume and low margin. As margins are low, companies need to scale up huge volumes in order to generate large incomes. Organizations need to have a firm grip on the cost structure.

So innovations for inclusive growth have multiple challenges. On one end, they should develop technology that can deliver higher volume at a lower cost, and on the other adapt business processes that has the customer as co-creator of value.

The United Nations Global Compact is a strategic policy document for business that helps in alignment of business operations and strategies over universally acceptable principles in the areas of human rights, labour, environment and anti-corruption. By adapting to innovation strategies that augment inclusive growth, business organizations can help ensure that market, commerce, technology and finance advance in ways that benefit economies and societies everywhere.

Any innovation, to be inclusive, should be a hybrid solution as BOP consumer problems can't be solved with existing technology. They need to be scalable, transferable, across geographies, cultures and languages and should have the ability to get adapted to similar markets.

Above all these inclusive innovations have to be sustainable and conserve finite resources. You will read few interesting articles in this edition of "Gravity" that cover some of the important aspects of inclusive innovation.

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Happy Reading! Tapan K Panda



Dr. Tapan Panda Professor of Marketing, Director Kotler Srinivasan Center for Research in Marketing

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Inclusion is a universal human right. Inclusion aims to embrace everyone without discriminating on the basis of caste, religion, gender, economic status, etc. It is about giving equal opportunities and access and getting rid of discrimination and intolerance. Inclusion aims to provide equality of opportunity, unhindered access to market resources to all and especially to those at the bottom of the pyramid. Inclusion intends to treasure diversity and build community. Inclusion allows the participation of the deprived sections of society in decision making on processes that affect their livelihood.

Innovation is the way of the future. A search is on for new business and operating models and technology to bring out of poverty billions of people, also known as small holders. Inclusive innovation seeks the participation of these small holders in the process of transforming the market chain and adding value to one or more links of the chain and to the chain as a whole. Inclusive innovation breaks free of the traditional development models of wealth redistribution and instead, embraces the goal of wealth creation through creating value at the bottom of the pyramid.

Inclusive innovation seeks to expand the overall pie by creating value, thus accruing wealth all along the value chain. Traditional innovation, in contrast, occurs through research and development initiative, sponsored by the end users and therefore tends to benefit the end actors and not everyone in the value chain.

Inclusion seeks to address the issues arising out of exclusion based on race, economic / financial status, disability, etc. However, the focus of this article is on Financial Inclusion and how technological innovation can promote Financial Inclusion.

#### WHAT IS THE EXTENT OF FINANCIAL EXCLUSION?

2.5 billion adults, just about half of the world, do not use formal financial services to borrow or save. 2.2 billion of this population live in Africa, Asia, the Middle East and Latin America. In India, almost half the country is unbanked. India has the highest number of households that are unbanked. Only about half the population has deposit accounts and about 9% of the population have credit accounts. Only 20% of the population have some kind of life insurance and about 9.6% of the population have any insurance other than life insurance. Thus, exclusion is staggering in the world, and in India in particular, on whichever parameter one chooses to look at.

#### WHAT IS THE MEANING OF FINANCIAL INCLUSION?

Financial Inclusion is a must. But what is Financial Inclusion? According to RBI Deputy Governor Dr. K. C. Chakrabarty, Financial Inclusion is the process of providing access to financial services and products such as deposits, credit and payment processes to all sections of the society, in general, and weaker and deprived sections, in particular, in a fair and transparent manner, at an affordable cost and by institutional financial services. Financial Inclusion has the following four dimensions to it:

(i) What is provided? Full range of financial services such as deposits, credit, payments, and insurance are made available.

(ii) How is it provided? It is provided with quality, namely, convenience, affordability, dignity and with all procedures of client protection in place.

(iii) Who receives? Everyone who can use the services, including the rural poor and groups that are often discriminated against, such as women and the physically challenged.

(iv) Who provides? Mainstream financial institutions offer financial services.

Financial Inclusion is the delivery of financial services to all people in a fair, transparent and equitable manner and at an affordable cost. It seeks to improve the standard of living of the poor and the downtrodden and enables individuals to manage finances.

#### WHY IS FINANCIAL INCLUSION IMPORTANT?

The importance of breadth in terms of the outreach of financial services cannot be underrated. Schumpeter, in 1911, argued that the services provided by a financial intermediary - of mobilizing savings, evaluating projects and managing risk, is important for technological innovation and economic development. To quote Schumpeter, "The banker, therefore, is not so much primarily a middleman ... He authorizes people in the name of society ... (to innovate)". The argument essentially is that the services that the financial sector provides – of reallocating capital to the highest value use without substantial risk of loss, moral hazard or adverse selection – are an essential catalyst for economic growth.

By improving information on firms, managers and economic conditions, financial intermediaries enhance growth. Market imperfections impact more the poor or the small entrepreneurs who lack documentation, credit history or collateral. Without broad access to financial intermediaries, many entrepreneurs who require credit are not able to invest in high return projects, thereby reducing the efficient use of resource allocation and having a negative impact on economic growth and poverty elimination.

Besides identifying the best production technology, financial intermediaries also identify entrepreneurs who are capable of delivering innovative solutions. Financial intermediaries enable the entry of new firms through what is believed to be a Schumpeterian process of "Creative Destruction". This implies that external finance is made available to talented individuals, that is, financial intermediaries provide equal opportunity and access to finance to all and not restrict it to just the rich and well connected.

Large sections of the population in developing countries do not have access to financial institutions and therefore, is one of the important issues to be addressed in reducing poverty. Financial access in poor and low-income countries has become a basic necessity alongside water, sanitation, health and education.

## WHAT ARE THE BARRIERS TO FINANCIAL INCLUSION?

More than 700 dollars are required to open an account in Cameroon, the fees to maintain a checking account in Sierra Leone is 25% of GDP per capita, the fee to transfer \$250 in the Dominican Republic is \$50. While most people in developed countries take access to financial services for granted, in developing countries, price and non-price barriers prevent a large section of the population from using mainstream institutions to meet their need for financial services. The large fees required for maintaining checking and savings account is a barrier for the poor section of the

population to use formal banking services. Similarly, the need for physical address (KYC norms) or a formal job as an eligibility factor to open a checking or savings account keeps out large sections of the population who work in the informal sector or have no houses to call their own. The three dimensions of barriers to Financial Inclusion are (i) physical access (ii) affordability and (iii) eligibility.

#### **Physical access**

To open a deposit account, people in Greece and Sierra Leone were required to visit the head office whereas customers in Moldova could open such an account at headquarters, branches and even branch-like offices. Similarly, to submit a loan application, customers in Armenia, Ethiopia, Nepal, Sierra Leone, Thailand, and Uganda had to visit the bank's headquarters and branches, while customers in Australia, Chile, Denmark, Greece, South Africa and Spain could not only use branch and non-branch outlets, but could also submit loan applications over the phone and the internet.

#### Affordability

The minimum balance / GDP per capita to open a checking account in Cameroon and Nigeria exceed 100%; in Ethiopia, Nepal, Sierra Leone and Uganda more than 50% of per capita income is required, whereas in the developed world it is zero. The fee associated with maintaining a checking account is about 20% of GDP per capita in poor countries such as Malawi, Sierra Leone and Uganda, whereas it is free in developed countries such as Sweden. The minimum amount for consumer loans relative to GDP per capita ranges from less than 1% in Denmark and Switzerland to 1152% of GDP per capita in Nepal. While banks in Belarus, Denmark, and Egypt do not specify minimum amounts for SME loans, banks in Nepal, Georgia, and Uganda report a minimum of more than 2000% of GDP per capita. Fees on consumer loans expressed as a percentage of GDP per capita range from zero in developed countries such as Belgium and Switzerland to more than 6% in Albania and Cameroon.

#### Eligibility

Across the world financial institutions require proof of identification to open an account in accordance with KYC norms. The number of documents to be presented is also seen as a barrier to Financial Inclusion. For example, banks in Albania, the Czech Republic, Spain and Sweden demand on an average only one document to open a checking account whereas banks in low-income countries such as Bangladesh, Cameroon, Chile, Nepal, Sierra Leone, Trinidad and Tobago, Uganda, and Zambia require at least four documents to be presented. Similarly, the number of days to process a loan application can be considered a de facto barrier to eligibility as people may be discouraged to apply for a loan when the waiting time is more. For consumer loans, it takes one day to process a loan in Australia, Brazil, the Czech Republic, Denmark, Greece, Israel and Spain whereas it takes over 20 days in Pakistan. An SME loan is processed in about 2 days in the developed world countries such as Denmark, Israel and Spain, but it takes more than a month to process a loan application in

developing countries such as Bangladesh, Pakistan, Philippines and Uruguay.

Thus, it is seen that in the developing world, physical access, affordability and eligibility are barriers to Financial Inclusion. All these barriers could be the result of the bank's rational business model, their market position, the macro-economic, contractual and regulatory environment that they are operating in. Physical infrastructure is also a barrier to Financial Inclusion.

The next question that begs to be asked is - can technological innovation reduce the barriers to Financial Inclusion and enable banks to design a new business model which targets the bottom of the pyramid.

## HOW IS TECHNOLOGY HELPING IN FINANCIAL INCLUSION?

#### Person to Person (P2P) transfers

Take Kenya's M-Pesa, launched in 2007 by Safaricom - a money transfer service over mobile phones has transformed phone vendors as agents of the bank. About 54% of Kenya's adult population uses this service, which started as a form of person to person money transfer. Now, Safaricom in association with Pesa Pal has extended the concept of M-Pesa to allow parents to pay school fees for their wards through their mobiles, thus reducing the bank transaction fees. Mamakiba is another technological innovation that allows expectant mothers to give birth in clinics with trained medical professionals. Mamakiba starts with a savings calculator to help pregnant women figure out the cost involved in giving birth to their babies in a clinic of their choice, then links them to M-PESA to save money, and pairs regular savings reminders with health messages via sms.

#### Government to Person (G2P) transfers

In developing countries, Government to Person (G2P) cash transfer is one of the most important steps in reducing poverty. Pioneering work is happening in this area across the world to not only reduce leakage in the system, but also to reduce service delivery cost. In the Philippines, a conditional transfer programme is a vital component of the poverty alleviation agenda. Cash transfers would earlier take place through over-the-counter payment or through ATMs, thus making the cost of service delivery prohibitively high. GCASH REMIT, the domestic cash pick-up remittance service of GXI was initially tapped to distribute the cash. GCASH REMIT needed only the mobile phone to process and validate the disbursement. The government of Philippines could monitor the cash transfer real-time through the GCASH Platform. Similarly, in Pakistan, the United Bank Limited launched the Omni Platform to effect payment services. Here, the beneficiary is provided with a card that bears a sixteen digit number and a pin. The beneficiary can use the card only with Omni agent. Agents will enter the sixteen digit number into their phones together with the PIN number issued to each beneficiary in order to effect payment.

#### **M-BANKING IN MICRO FINANCE INSTITUTIONS**

Microfinance Institutions are using mobile banking to allow clients to make loan repayments and deposits. In Pakistan, a major mobile network operator, Telenor, bought a majority share of microfinance bank Tameer Bank in 2008, and together they launched the Easypaisa mobile payment service in October 2009. Customers with a Telenor SIM could also open a mobile bank account with Tameer Bank from which they could initiate transfers and payments using their mobile phones, as well as cash in and out with Easypaisa agents. In Kenya, M-Kesho, an interest bearing savings account, has been launched as a partnership between Safaricom and Equity bank as an alternative to keeping cash under the mattress.

## INNOVATIVE USES OF MOBILE PHONES BEYOND BANKING SERVICES

'Kilimo Salama', an innovative programme, uses a low-cost, mobile phone payment and data system, and automated, solar powered weather stations to offer thousands of farmers in parts of Western and Central Kenya affordable, 'pay as you plant' insurance to protect their investments in desperately needed high-yielding seeds, fertilizers as well as other farm inputs. A special bar code on the inputs being purchased by the farmers is scanned by the seller and a policy is registered with UAP Insurance over Safaricom's mobile data network. When data transmitted over Safaricom's 3G data network from a particular station indicates that drought or other extreme conditions (including excessive rains) are destined to cripple crops, all farmers registered with that station automatically receive payouts directly via Safaricom's M-PESA mobile money transfer service. Along similar lines, MTN Ghana has launched world's first mobile money insurance service Mi-Life. In this, MTN's mobile money users can buy life insurance using mobile devices.

## HOW CAN TECHNOLOGY WIDEN AND DEEPEN THE PROCESS OF FINANCIAL INCLUSION?

Branch banking has reached its limit. Financial institutions have to look at new business and operating models such as branchless banking to meet the needs of people at the bottom of the pyramid i.e. they have to be innovative enough to be relevant to all sections of the society. The four forces that will govern the future of branchless banking are:

(i) Demography is changing such that there will be a greater number of younger people as consumers in developing countries who have higher propensity to adopt to new technology. Second, there will be greater migration from rural to urban areas and also international migration.

(ii) Governments will become more active by: (a) extending the safety net through cash transfers or cash for work (b) encouraging the availability of low cost banking and financial infrastructure.

(iii) Crime of various types will see a rise. The rise and cost of cash crime will drive customers to adopt electronic form of payments.

(iv) Internet browsing via mobile phones will change the competitive landscape. What this means is: (a) user interface will improve, making navigation much more easy (b) applications become independent of Mobile Network Operators (MNO).

The four forces that would shape branchless banking would lead to Platform Level interconnection, that is, a customer with an account with one service provider can send or receive money to or from the account of a customer with a different service provider. This would simplify both person to person and government to person money transfers. Today, no market has interconnected mobile money platforms. Second, micro-finance institutions (MFI) can revolutionize their outreach and customer service by using m-banking for loan disbursement, repayments and deposits. For example, Kenya Women's Finance Trust is probably the largest MFI using M-PESA for loan repayments today reducing the time of repayments and using group meeting time to discuss business problems. MFIs can further innovate by providing flexible loan and savings service to members who have easy access to cell phones. For example, MFIs can develop mobile applications where members can feed information about what repayments and deposits each group member makes, what new loans people want to take, and just like that, the mobile app tells the interest rate to be charged and the length of the loan. Thus, providing flexibility in terms of loan size, tenure and interest rates charged. The app also offers advice on financial planning.

#### CONCLUSION

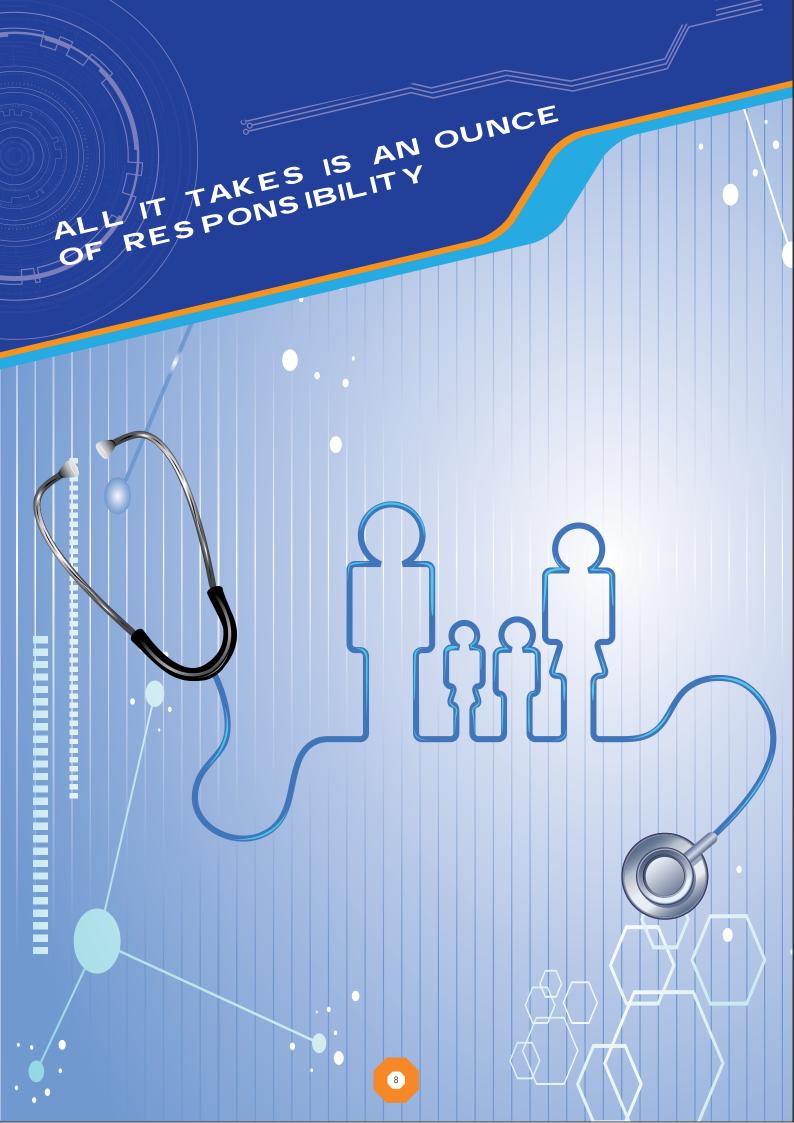
As the world is moving toward becoming a knowledge-based economy, the cost components are changing from being the labor and capital of classical economy to R&D, intellectual capital and service impact. Information technology is having a profound impact on the business and operating models of firms, changing the market and industry structure, products and services and their flow, consumer segmentation, consumer values and consumer behaviour as never before. Technology in absence of physical infrastructure can not only address the issue of 'access' to financial services but also the issue of 'use' of financial services, key barriers to Financial Inclusion, by reducing the transaction costs. This reduction in costs is through elimination of costly, time consuming and labor intensive workflows. Technology can lead improvement in business productivity through process efficiency, effectiveness and economies of scale.



**Venkat Yellapantula** Lead BA, HCL Australia Pty



Saurabh Suhasaria Senior Consultant, Deloitte



In the midst of corporate hospitals with multiple tie-ups, it is indeed heartening to find a few doctors who take it upon themselves to provide affordable care to their patient population. A doctor I know of has consciously chosen a relatively not-so-well-off target segment in the heart of a metropolitan city. And he questions that when the same Paracetamol is available in both a very affordable version as well as quite an affluent-affordable version, why would he not choose to run his show with the help of the cheaper set of drugs. In the case of these medicines, we need not also be worried about their effectiveness wondering whether the cost is directly proportional to the quality; it is the same combination in various forms.

Likewise, I am pleasantly surprised every time I come in contact with a non-profit, non-governmental organization; I just cannot help gaping in awe at their smooth functioning in the midst of serious businesses around. I felt exactly the same way when I got an opportunity to meet the authorities of RUWSEC with regard to a college project of ours.

RUWSEC - RUral Women's Social Education Centre is a women's NGO that came into being in 1981. Thirteen women villagers collectively thought up of this idea and worked toward making it come true. It is headquartered in Chengalpattu, near Chennai. Their motto is to uplift and improve the standards of living of women residing in villages around them. Their focus is on creating awareness about health-related issues at the grassroots level. It has succeeded in gathering community workers to set up rural centers to spread awareness among rural women on varied issues that include women's rights, healthy living and birth control, among others. Its activities include extensive research in the field of health issues that are prevalently seen among the rural poor.

Clearly filling a gap that was widely felt, their target audience is seated right in the middle of the overlapping rural trends in health, gender, caste and poverty. Their clinic / hospital is seen as a means of transforming the rural women from just being recipients of whatever healthcare came their way to taking up responsibility for their own healthy living and well-being, if provided with the right directions and amenities. The final outcome of these positive interventions could lead to an upward lift in the circumstances of their living as a collective unit. Empowerment and vocational training go hand in hand and are quite sought after by the villagers, predominantly by women. They are currently into tailoring. They look forward to extending their range of training offerings in the direction of basic computer education and spoken English language coaching.



Programs are designed in response to contemporary research findings and currently felt needs of the collective community. Their programs now cover and benefit over 30,000 women belonging to about a hundred villages around their clinics. Health promotion, education, dissemination of specific hygiene-related information in a manner that would reach every villager, research and relevant publications are included in their programs. Their taskforce is widely recruited from in and around their premises, thereby catering to their target segment's job needs as well. Their human resource policies take into account all needs and constraints specific to women.

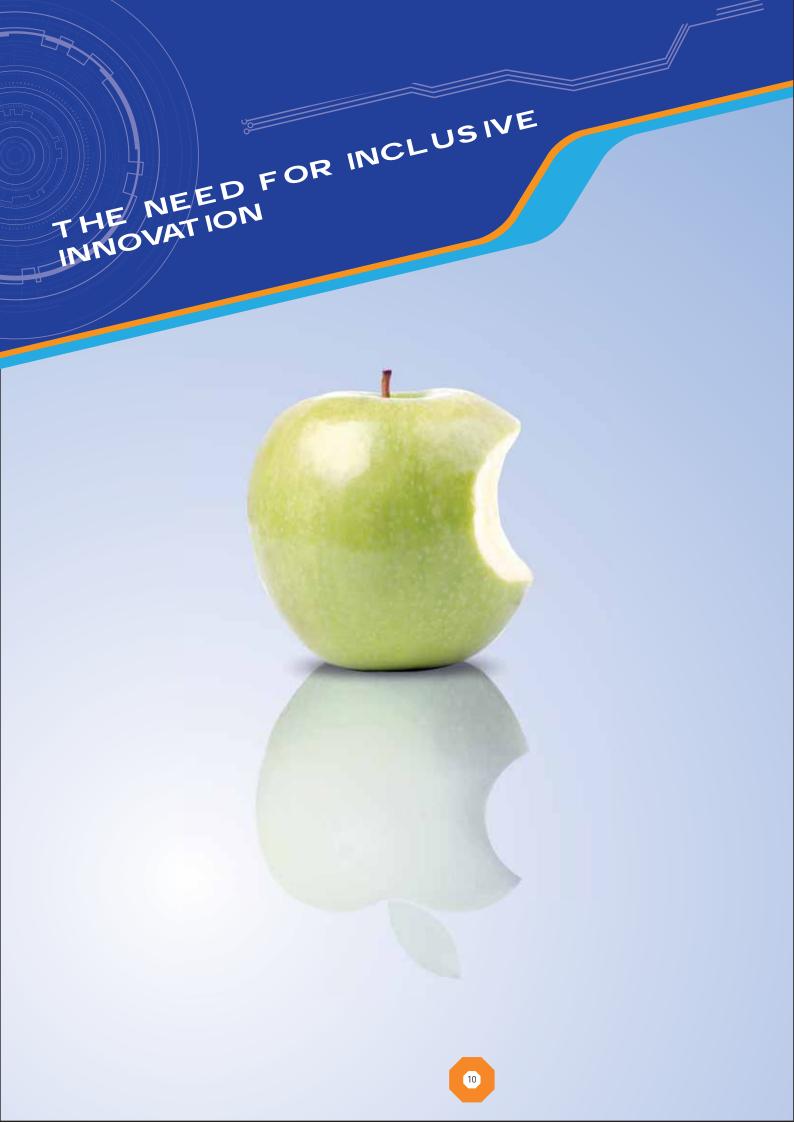
Over the years of their existence, it has been proven that immunization levels and health and well-being awareness are on a steep rise. Also, more women and children's lives have been saved due to the shift toward health-seeking behaviour. As a fall out of their activities, several women's associations have been formed and regular leadership training programs are also undertaken. Their funds predominantly come from the Government of Tamil Nadu, the Rockefeller Foundation, Ford Foundation and MacArthur Foundation.

Apart from Allopathy and Siddha doctors being available on the premises, counsellors also offer their services, both in the clinics and also via home calls. Inter-village workshops and activities are also organized by them. The dedication and ownership associated with their everyday functioning is greatly impressive by all means. Their success by means of making a huge positive change around them speaks volumes for the potential within each of us.

Expansion may or may not be a good idea for RUWSEC or for any such successful NGO for that matter. If scaled up, the focus of the core committee would mechanically shift to maintaining quality throughout, recruiting only people with the right inclination, improvising by means of better use of technology and catering to a more diverse array of needs. Moreover, these units when permitted to flourish on their own and integrated by means of contracts or partnerships would work out to be more fruitful. Some inclusive suggestions such as a compulsory rural stint for doctors and medical staff, offering better remuneration packages for serving in rural areas depending on period of service, educational programmes focused on serving the rural population, contracting private players who are willing to enter a more rural market as against the more prevalently sought after Tier-I cities, a more integrated emergency transport service that can penetrate our towns and villages, streamlining the supply chain of at least frequently used drugs so as to improve availability and accessibility levels, increasing the number of mobile medical clinics and effective cost management efforts would work wonders.

**CharanyaThangaraj** PGPM, Great Lakes Institute of Management, Chennai





Technology has become one of the most common words used by man. No matter who it is, the simple reason given for a notable development is TECHNOLOGY. Looking at the latest inventions and developments in various fields, it is only apt to say that technology is the birthright of every human being. We are in a time where technology is everywhere. It is only fair to share it with the common man. Innovation is the very idea that fuels technology. From the man who was enlightened by an apple (Isaac Newton) to the man who rediscovered the Apple (Steve Jobs), the world has seen what the ideas from these great men's heads can do. As commoners, we have never felt the lack of innovation. The reason being, every little idea improves the way we live in a way that no one has ever envisioned, but for a few great ones. God has chosen a select few to introduce these innovations to the world. So these ideas must be shared and must reach every corner of the world. Inclusive innovation is the term given by the business world for this thought. I'm no expert, but as far as my knowledge goes, inclusive innovation refers to those innovations which include each and every one in the growth path laid by it.

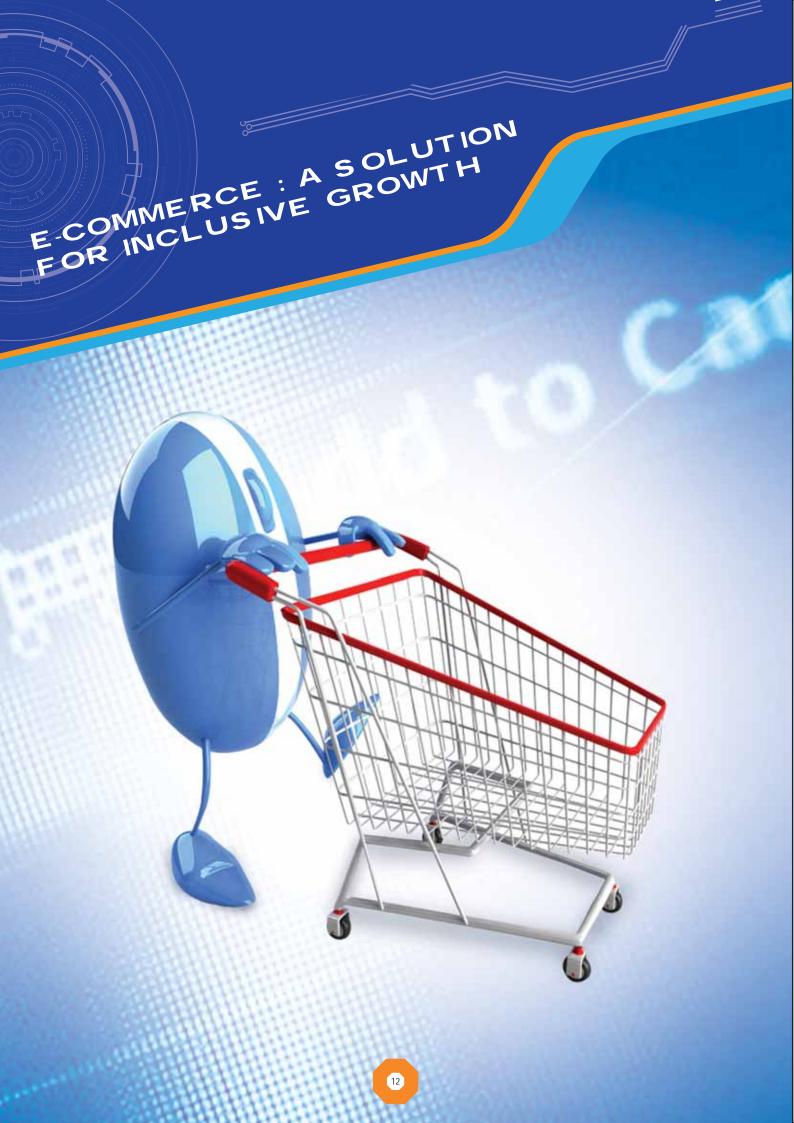
Ours is a developing country (leaving aside the fact that it has stayed a developing country all these years), and this inclusive innovation is much needed for sustained growth. In the past decade or two, India has seen a considerable growth in terms of the economy and the living standard of the citizens - thanks to the astronomical growth in the IT and consultancy fields. This may seem an impressive record, but deep within, we have failed in an important issue. Growth has never been balanced and will continue to be so for at least the near future. This can be attributed to the fact that our 'respectable' leaders have not bothered to think about this inclusive innovation. Well, why is it so critical now? A change is easier to implement during a period of transition than during any other. Our country is currently in this transition period; entrepreneurship has a whole new meaning and Corporate India is trying to change the face of the country. This is why all the leading economists and ideologists are stressing on this issue.

Now, what exactly can be called a technology for inclusive innovation? A technology that is cheap and simple enough to reach every class of men; a technology designed with social and economic concerns in mind; moreover, a technology which will maintain the balance of growth among the different strata of society. A couple of years ago, the Tata Nano became a sensation. It was considered a revolution in the Indian automobile industry and was tagged that it was literally going to put India on wheels - the fact actually is that it didn't. According to me, it was a bad example of inclusive innovation. This may be a harsh statement but I have my reasons for saying so. We all know the amount of traffic and congestion on our roads. It was always going to add to this unsolvable problem. The price tag of 1 lakh may convince even the stingiest middle class man, but the concern over carbon footprint and congestion free roads will go for a toss. This not only affects the environment, but also different sections of society indirectly. On the other hand, the developments in the public transport system have proved to be a working example of inclusive growth. We are now in cities which operate metro rails and AC buses with GPS integrated in them. This does not serve a selected section of society. We do witness even the corporate executives using the metro rails in order to avoid congestion on roads. It satisfies the needs of all the classes of the society. Currently, following the footsteps of Tata, many other manufacturers are trying hard to develop a Nano competitor. This is doing no good to society. Instead, the investment put into the R&D of these projects can be used for more conservative means. However improved, our public transport services are far from complete. Take any developed country for instance – you will notice that they have a well integrated public transport service. Though our cities have improved a lot, rural India still lags behind. This can only be solved if Corporate India finds it necessary to invest in national infrastructure.

Technology is not meant to be a luxury but a need and this need must satisfy everyone who shares this world. Quality always comes with a cost, but it is meaningless if it can be experienced only by a lucky few. So however small or big the technology may be, it must always be designed with inclusive growth kept in mind. After all, the joy of sharing is priceless, isn't it?

**T. Logeshwar** Student, College of Engineering, Guindy (CEG), Anna University





We live in the 21<sup>st</sup> century global village, where we are touched by technology in many ways. The knowledge economy is driving innovation and bringing markets under its fold. E-commerce, which has changed the way consumers shop, has been a significant part of this growth story. Increasing penetration of technology among different market segments has led to businesses recognizing the potential of this medium and ultimately consumers have realized the benefits. Consumers seek convenience and variety while companies seek cost advantages in an increasingly competitive marketplace. E-commerce provides both advantages and hence, has gained immense popularity among both users and producers.

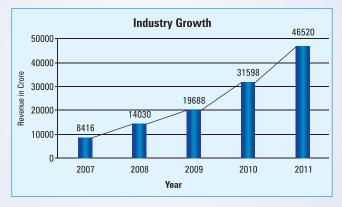
E-commerce denotes transactions conducted using an electronic channel. The World Wide Web is used for these transactions through technologies such as e-mail and mobiles. The customer of today is comfortable transacting on online portals using payment gateways; however companies are trying their best to ensure a good experience on their e-commerce websites, as building trust and maintaining credibility are still a challenge.

E-commerce has opened up new opportunities for businesses and levels the playing field for small and medium businesses. This technological revolution has far reaching potential to grow as it nurtures entrepreneurial spirit and expands customer reach. As the consumer spending increases, e-commerce has made it possible for companies to both increase market share and share of wallet of customers.

#### E-COMMERCE INDUSTRY ANALYSIS

With more than 100 million users being added, increasing internet penetration has increased the number of online transactions in India; therefore e-commerce is certainly the next big thing. Whether it is the next bubble is anybody's guess. But for next five years, it is a bubble worth a lot of money.

According to a report by IMRB and IAMAI, in 2011, the industry has grown to around `46,520 crores, up from `8,146 crores in 2007, an increase of 470%. The industry has grown around 6 times over the last 5 years by riding on the trends of higher standards of living, increase in disposable income, increase in internet users and increase in online payments. The gradual increase in the penetration of internet in rural India has increased the customer base; therefore e-commerce can expect an increased customer base under its umbrella.



Industry growth from 2007 to 2011

The online travel market and financial service market are the major contributors to industry revenue, but other businesses such as digital downloading, e-retailing etc. have shown promising growth in recent years.

In spite of such impressive growth figures, e-commerce is hampered by lower adoption rates as many people prefer the traditional way of buying products. There are 6.1 million users who do not buy online and some of the reasons for not buying through internet are lack of trust, lack of shopping experience and no physical feel of the product etc.

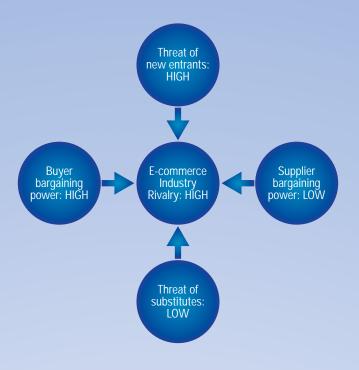


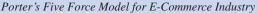
Reasons for not shopping online

Despite these reasons, India's e-commerce industry is very attractive and growing at an annual rate of 46 - 47% due to an increase in awareness among the tech savvy population and positive word of mouth publicity. After the 2000 dotcom burst, e-commerce has emerged strongly and with a bang.

The strategic position of the e-commerce industry can be best understood by Porter's five force model.

- **Bargaining power of suppliers:** In the e-commerce industry, human resource is the main input as e-commerce solution providers need programming talent to build and maintain websites for their business transactions. As India is the IT hub, e-commerce companies have multiple suppliers to choose from, so the bargaining power of suppliers is low.
- **Bargaining power of buyers:** Customers have access to many e-commerce service providers and can choose from wide a array of options available. Hence, in this industry, buyers have high bargaining power.
- **Threat of new entrants:** Since the e-commerce industry has low entry barrier, it attracts a large number of firms to enter the same market space. Therefore, the threat of new entrants is high in this industry.
- **Threat of substitutes:** As the internet is the main platform for e-commerce and as such the internet has no substitute, the threat of a substitute is low in this industry.
- **Rivalry among the firms:** Low entry barrier and with attractive profits in the same market space results in intense rivalry.





#### **INCLUSIVENESS & INNOVATION**

#### Expanding the horizon

E-commerce as a platform is inclusive due to its ability to bring different market segments closer to products and services in the most convenient manner for the customer and the least expensive way for the company. Technology has brought varied audiences under one umbrella and businesses have gained by reaching out to them. Many businesses have benefitted from e-commerce in not just catering to their existing customers but also reaching out to potential customers, thus increasing their customer base. From selling stocks and mutual funds to songs and flowers, e-commerce attracts customers from various segments and age groups. The reach of the products is tremendous given the nature of the platform. The customers can locate the product quickly through the search options and save on their search costs. Some of the methods through which e-commerce creates inclusiveness through its innovative format are shared in this section.

E-commerce provides the customer the convenience of time and location. The growing focus on availing products services 'on the go' and change in customer behaviors has contributed to its popularity. The mobility assistance provided by this format has been of immense value to the customers and this feature has got many prospective customers on board. The websites operate all through the week and an order can be placed from anywhere at any time.

Geographical barriers are fast disappearing, allowing the company to cater to a wider audience. Online stores help customers order items that may not be found locally. Suppose a recently released book is not yet available or out of stock at the local bookstore. Instead of losing such consumers, e-commerce provides the option to retain this segment. Now customers can place an order online and have it delivered to their home without even visiting a local bookstore. This medium also offers the benefit of personalization. For example, customers can pick a song of their choice and pay only for that. In the conventional format, the customer would be required to purchase an entire set just for one song. This flexibility is driving a new wave of consumerism and leading to micro transactions.

The innovations made possible through this medium have turned upside down the traditional model of consumers reaching out to producers. Technology has not only assisted in expanding commerce and catering to the different needs of the consumers but has also changed the way people purchase. It has made products and services available to consumers irrespective of geographic, financial or demographic constraints.

Let us consider the example of the financial services industry, particularly mutual funds, which has effectively utilized this model for financial inclusion and thus provide services to customers who were formerly not part of the system. Conventionally, people visited asset management companies or brokers for investment-related guidance and purchases. The disciplined companies performed these duties diligently while the others were left behind. With the availability of dedicated websites from companies, registration is simplified, transactions are easy and tracking the investment is just a click away. This has helped the mutual fund industry to reach new customer segments via the online medium. Technology has made such an inclusive growth achievable and profitable for businesses.

#### **Entrepreneurial You**

In last four to five years, the internet has emerged as a platform for aspiring entrepreneurs to start their businesses. Many start-up enthusiasts are stepping forward to take their share of the large e-commerce market. It is not only the entrepreneurs who are enthusiastic about the investment but also the developers associated with e-commerce technology and venture capitalists investing in this business. There are many examples where people have left their jobs to start a business in the e-commerce space. Mr. Rahul Sethi, who has left his position of president at 'tradus.in' to start his own venture and Mr. Manoj Chandra, erstwhile vice-president at Bata India, who has left his job to start his e-commerce venture are but two high profile examples of how this industry is attracting people who want to start their own business. E-commerce has given the scope for systemic innovation, new business models and new modalities of service delivery.

E-commerce has also attracted people from niche segments like baby products, flower retail stores, handicrafts, home décor etc. to start their own online ventures. Online baby product shops are gaining momentum, especially in the far-off towns which do not have access to the best quality baby furniture, toys and other relevant products. Online flower retailers are finding quick traction. With the help of technology, flower retail stores are equipping themselves to sell the best-bred flowers to their customers. E-commerce provides the platform for entrepreneurship and is thus helping inclusive growth.

Historically, women have faced many issues as entrepreneurs. It is possible that in some parts of India, women still cannot get business loans without a husband or father's co-signature. But in India this practice is changing. Indian women are no longer a showpiece in homes and kitchens thanks to globalization, which has helped women to create an impact on society locally as well as internationally. The internet has provided a platform for women to show their entrepreneurial skills. In the world of e-commerce, many women entrepreneurs have shown their talent and emerged with flying colors. Women entrepreneurs in e-commerce come from a diverse range of industries like hair and beauty, gems and jewellery, food processing etc. and are very successful in their field. Ms. Shanaya Modi, Director, Mazda Ltd. is in the business of food processing and does her job entirely on the internet. She says, "Through e-commerce, our division has grown phenomenally with customers from Russia, UK, UAE, Saudi Arabia and the US There's really no need to use any other promotional channel." It is clear that e-commerce has the potential to provide Indian women entrepreneurs a flexible and cost effective platform to explore business opportunities and thus overcome the traditional belief that women are not fit to run a business. E-commerce has created an environment where anyone with potential ideas can explore opportunities, and thus helps in inclusive growth.

#### **INROADS INTO HEALTHCARE**

Research shows that investments in the area of e-commerce can yield social benefit and bring new opportunities and the best example is e-commerce in the field of Healthcare. By linking technology and innovation in healthcare services, there can be social enhancement and economic growth as we can include citizens from the poorer sections of society in the healthcare safety net. E-commerce is bridging the gap between patients and doctors, especially those from rural locations, leading to empowered patients and enhanced self, home and community care capabilities. As suggested by Broshy et al. (1998), there are two types of information which are particularly important – information about managing health and chronic disease, and information about doctor quality and cost. With the use of the internet in the e-commerce field, e-health is able to bring in more patients, especially from the rural sections, under medical coverage.

#### **FUTURE OF E-COMMERCE**

In India, the future of e-commerce looks very promising. There is an on-going paradigm shift in the view of e-commerce as a tool for selling into a medium for building customer relationships. E-commerce has helped in inclusive growth through empowerment, increasing customer base from rural parts of the country. With greater investments, e-commerce can bring in more opportunities and social benefits which will lead to inclusive economic growth.

#### CONCLUSION

Technological innovations have led e-commerce to emerge as a platform to bring in inclusiveness for the segments of the society that are constrained by financial, geographical or demographical factors. The consumer mind-set is undergoing change and there is a need to be mobile. The value preposition today hinges on reaching out to the consumers rather than waiting for them to search for products and services. Technology is an enabler for increasing inclusiveness and providing access to information. The innovations in technology have helped create profitable business models and opportunities for commerce. This format of business removes the intermediaries and gives all the participants a fair chance of succeeding. We see a slew of online portals which started on a humble note and have become very successful today. These successes are a testimony to the immense potential this platform has to offer to budding entrepreneurs, and thereby unlock the benefits to society.

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Marketing has benefited from the reach and precision afforded by technology, right from Gutenberg's metal movable type that revolutionized printing, through television that changed the nature of advertising, to social marketing that has created a segment of one. The rate of technology adoption in marketing has accelerated, so much so that competition has grown by leaps and bounds and the power of human imagination is being pushed to the limits. Traditional concepts of tangibility and intangibility and push and pull exist as words only. Technology has become the inseparable tool of marketing.

Traditionally technology is defined as the knowledge and use of tools, machines, techniques, crafts, systems or methods of organization to solve a problem or perform a specific function. However marketing states that technology is a mode or medium through which the marketer propagates deliverables to the end user. The technology has been dynamic throughout right from television advertisements to viral marketing on the internet.

Technology has led to innovation in marketing. In today's competitive world, innovation is the mantra to success. Innovation has resulted in a multitude of products designed to satisfy the needs and desires of every consumer, be they basic, latent or dream.

That technology is only good for marketing is a myth worth exploring. Though technology offers advantages, there are associated pitfalls to it. Technology has extended the reach of the marketers, helped identify new customers, automated follow-up and speeded up market analysis. On the other hand, pitfalls include greater expense and reduction in product cycle times. The trade off between the pros and cons of this has to be weighed properly to take appropriate steps.

There are many examples in the marketing domain to showcase the power of technology, right from the viral marketing of Kolaveri-Di song, to goods sold online on Flipkart. There have been instances where technology is used with respect to the marketing mix of the product. Though these decisions are very dicey, marketers have gained good amount of success in their endeavours.

The usage and introduction of technology at the right phase of marketing a product plays a pivotal role. For the introduction phase of any new product or service, where the personal touch of direct marketing is of utmost importance, technology can play the spoil sport. On the other hand, with the advent of the maturity phase, technology is instrumental in keeping the product alive. It adds spice to a monotonous dead product and rejuvenates customer outlook of that product. As technology matures, there is hefty expenditure on research and this research does give birth to innovations which are then used to create new products and capture markets. Marketers strongly believe in these breakthroughs, so they constantly put in conscious efforts to bring in new ideas to the market. This creates an atmosphere for healthy competition and the end customers get a wide variety to choose from.

The basics of marketing have not changed for decades; however the techniques have seamlessly transformed from yesteryear's black

and white to today's coloured version. The right blend of technology and innovation has been a strong pillar to this end. In the end, I would like to suggest that technology will remain a driving force and innovation will create new horizons for marketers in the coming times.

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#### INCLUSIVE INNOVATION FOR AGRICULTURE

'Inclusive Innovation' is the latest buzzword in the world of business, especially in the emerging economies where the gulf between the rich and the poor is widening every day. Even in developed economies like the USA, public protests against the unequal distribution of growth such as 'Occupy Wall Street' and '99% vs. 1%' are gaining momentum. Only through inclusive innovation can the world can grow equitably and if technology enables this process, it will accelerate the commercialization of breakthrough products and services churned out by this process.

Why agriculture? 65% of the Indian workforce belongs in the agriculture sector; therefore the process of inclusive innovation should start there. Farmers are currently facing the double whammy of rising input costs and low market prices for their produce. In the developed economies, unlike India, farming is a highly automated operation. Technology has a major role to play in leveling this gap and the government should intervene through well-planned policy initiatives.

## TELECOM: ACCELERATOR FOR AGRICULTURAL GROWTH

India's quest for inclusive growth is reflected in the various policies adopted by its government and the telecom sector has a dominant role to play in this process. Our Prime Minister, Dr. Manmohan Singh, feels that "telecom development" is the key to inclusive growth. As per an ASSOCHAM study released in January 2011, mobile services will drive "inclusive growth in India". In India, there are about 300 million people who are participating in the strong growth that is underway but there are still 700 million people whose lives have remained unchanged by economic growth and most of them are farmers in rural India. Telecom is a means for people in the agri-business to progress economically by maximizing the profits in their profession, be it agriculture, horticulture, fishery, dairy or poultry. As inclusive growth is our goal, India needs to treat the internet and telecom connectivity as crucial infrastructure, just as airports and roads.

Inclusivity means that everyone gets a fair chance to access resources and information technology helps in attaining this inclusivity to a large extent. Currently, the rural tele-density is one fourth of the urban tele-density in our country; telecom as an instrument of social inclusion does not have the necessary reach in India. But it is expected that rural tele-density will reach over 60% in the next 3- 4 years. There are many mobile Value Added Services (VAS) available to serve the rural population; however what is paramount is that access is not restricted to a selected few.

India takes pride in the fact that it is the lowest tariff country in the world as the call tariff is around 30 paisa per minute. This affordability can ensure the easy percolation of telecom-related services to the remotest corner of the country.

Mobile value added services (VAS) can serve the information needs of the agriculturists. With quality information at their fingertips, they can make informed decisions, regarding what crops to plant, to whom to sell it for better profit while benefiting from health and disease prevention advice.

ELECOM SERVICES: ACCELERATOR ELECTURAL GROWTH DF AGRICULTURAL

#### **ISSUES IN AGRICULTURE**

Farmers receive inadequate information on current local market prices and timely need-based information which help them decide the harvest of crops. This results in reduced crop yields, increased wastage and slowed down market efficiency, which severely impacts the farmer's earnings. The implications for the rural people are threefold, namely: loss of income, time and opportunity. Therefore information is critical to the social and economic activities that comprise the development process.

Farming is not linear but requires constant inputs at every stage where new technological inputs provide better crop outputs. Crop production depends on weather, agricultural practices and the management of pests and diseases at the right time to save crops and gain better results. The final produce should provide better market prices to farmers, for which regular market intelligence for local markets in their local language is key. Knowledge of market dynamics is critical for the farmer to decide where, when and at what price the produce should be sold for a better margin.

#### **TELECOM-BASED SERVICES FOR AGRICULTURE**

Given that more than 70% of India's population resides in rural areas, mobile phone manufacturers and cellular network operators have taken steps to aggressively penetrate this market. In the past few years, mobile phone manufacturers such as Micromax, Nokia, Samsung and others have introduced extremely affordable mobile devices tailored to the needs of rural customers. Cellular network operators, for their part, have extended network connectivity to villages and introduced creative pricing plans in an attempt to capture rural customers. As a consequence of these measures and governmental support, the number of rural subscriber additions has exceeded the number of urban subscriber additions in the country in November 2011.

With cellular network subscriber penetration in rural India anticipated to grow at a steady pace, a number of companies, ranging from start-ups to multi-million dollar corporations, have realized that the mobile phone is a potent tool for delivering services to farmers and other stakeholders in the agriculture sector in India. In the past few years, a number of innovative telecom/mobile-based services have been introduced in the market. Two unique solutions, one developed by a start-up and another developed by a large IT corporation have been profiled below.

#### Nano Ganesh

At Proto.in, a premier start-up launch event hosted by Great Lakes Institute of Management in July 2011, an Indian start-up named Ossian Agro Automation presented an innovative GSM mobile-based solution aimed at addressing a key pain point of farmers: operating irrigation pumps. Operating irrigation pumps is an arduous task for farmers as they have to travel long distances at odd hours to switch on or switch off the pumps. Apart from that, farmers also have to deal with power fluctuations and load-shedding issues while operating irrigation pumps.

To address the aforementioned issue, Ossian Agro Automation has developed an innovative GSM mobile-based solution named Nano Ganesh that enables farmers to remotely operate irrigation pumps using a mobile phone. To enable remote operation, the starter unit of an irrigation pump is connected to a GSM mobile-enabled Nano Ganesh controller. To operate the irrigation pump, the farmer needs to simply call the number assigned to the Nano Ganesh controller from his mobile phone and key in the corresponding switch-on or switch-off code. Nano Ganesh also enables farmers to confirm availability of power by generating a long beep sound upon receiving a phone call.

Nano Ganesh offers several benefits to farmers. In addition to eliminating the task of travelling long distances to operate a pump set, Nano Ganesh allows farmers to conserve groundwater and save electricity costs considerably.

#### mKRISHI

Arming farmers with information on weather, soil, fertilizers, pesticides, new types of seeds/crops, disease control measures, local market prices, macro-economic indicators, government policies and other relevant information from scientific and agricultural experts can bolster agricultural output, drive profits and improve the economic conditions of farmers significantly. Working towards this goal, Indian IT major Tata Consultancy Services (TCS) has introduced a unique mobile-based solution that addresses the information asymmetry that plagues farmers. Named mKrishi, the solution allows farmers to gather information on local market prices, understand weather patterns specific to their location, connect with experts and gather other relevant information pertaining to land and crop.

With the help of the award-winning mKrishi, a farmer can send queries to experts in his local language through text or a voice-based querying system. The farmer can also capture images of his crop and send them to experts for analysis. On the other side, the expert is equipped with a console that offers a holistic view of the farmer's profile, farming history and other relevant details. The expert also receives information on the farmer's local weather conditions, soil conditions, pests specific to the farmer's location and also food grain prices at the farmer's local market. On the basis of this information, the expert can offer personalized advice to the farmer's queries and address other potential issues seamlessly. Undoubtedly, mKrishi is a one-stop solution that addresses a host of issues faced by farmers.

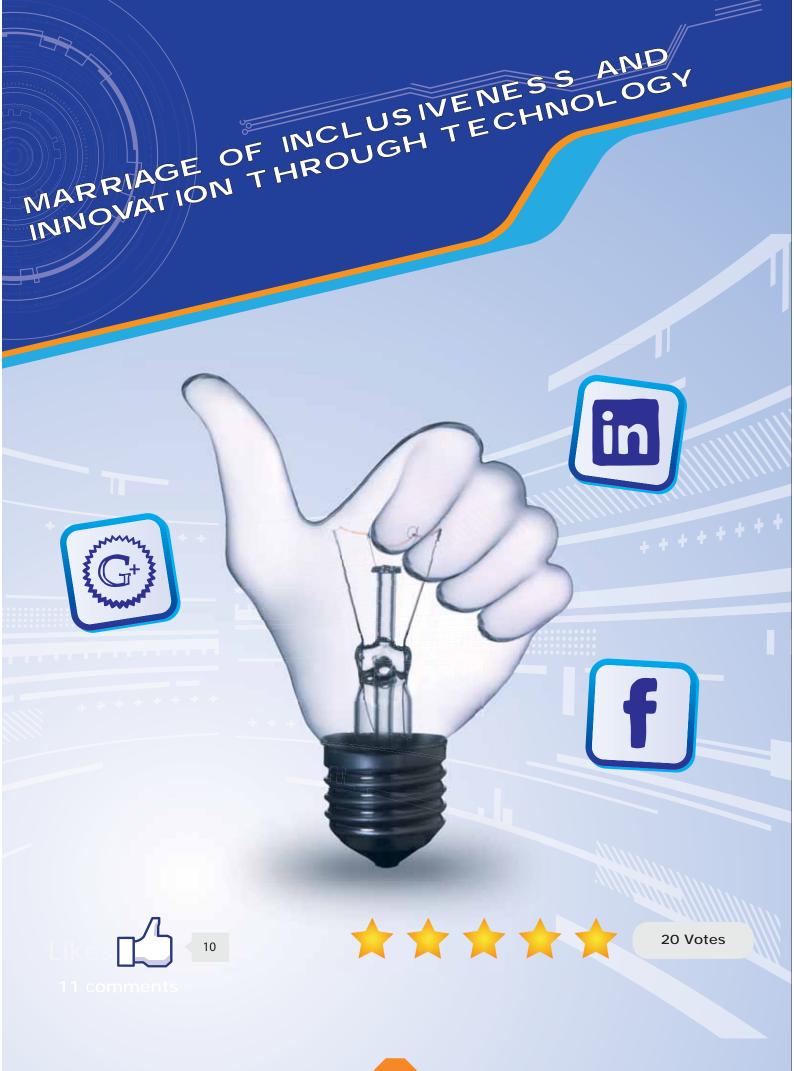
From the aforementioned examples, it is clear that affordable mobile phones and a robust, far reaching telecom infrastructure can go a long way in revolutionizing the lives of farmers in India. If the government continues to stress on leveraging technology to enable inclusive innovation, one could expect consistent agricultural growth driven by innovative businesses focused on farmers.



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Innovation is the way of the future. It is increasingly being seen as the currency for the 21<sup>st</sup> century. Inclusive innovation breaks from the traditional development values of wealth distribution instead focussing on wealth creation. The spirit of innovation can be observed in our freedom movement when Mahatma Gandhi charted a novel way of fighting the British through peaceful means. The new knowledge economy should increasingly generate new ideas, processes and solutions. The challenges in society need to be addressed by creating new delivery mechanisms, along with innovations in products. There is a requirement for innovative shift in urban and rural planning, resource management and governance models.

Most of the innovation from India emerges out of scarcity and aspirations. Recently many budding entrepreneurs have created ultra-low cost models and products. A 15-year old, Remia, created a "washing machine" that ran on pedals and did not require electricity to operate. The machine cost is just `2000. Mansukhbhai Prajapati also invented an earthen refrigerator called Mittikool which is priced at `3500. This runs without electricity making it ideal for rural areas. There is a huge demand for carbon fibre plants, membrane technologies, post harvest technology centres, low cost medicated biodegradable sanitary napkins, solar power assisted vehicles, big data and cloud technologies, multi-sided business models, personal genome information cards, chemicals from biogases, synthetic clone reproduction through seeds, new diagnostic tools for asthma, application of ayurvedic principles for genomics discoveries and more.

There is also the need to transform the majority of IT services delivery through inclusive innovation. An idea management platform in IT services is the best suitable example for Inclusive Innovation through technology. This enables idea generation around strategic focus areas, which will ultimately enhance competitive positioning and customer intimacy. An ideas dashboard helps in assessing and evaluating the most popular ideas across different themes amongst associates in an organization. Companies need to start socializing the strategic themes to a larger audience and invite ideas. Themes can be like cost cutting, customer relations and loyalty, impact sourcing, productivity improvement, talent management, knowledge management, intrapreneurship, greenanthon in IT Services and many more. Any other new theme can also be accepted in the dashboard. Introduction of ratings, votes, comments, polls, likes and shares will add more interest and deliver good results. Idea management administrators can be constantly reviewing the moves on the dashboard. Based on the majority of votes and likes for an idea poll results can be declared on the dashboard. The winners can be rewarded with "Hall of Fame and Honor".

Similarly an idea management platform can be started for social causes also. Corporate organisations should lay a platform for future wealth creation measures. In this regard along with IT services the other sectors should start idea management dashboards. Associates of both public and private organizations, students and faculty of management institutes should be a part of this activity. The themes here should help the needy in a smart manner. Themes can include rural internet usage, increase in prospects of depleting resources, eco-friendly ecosystem, healthcare access, affordable housing, environmental friendly energy sources, sanitation improvements and much more. Based on the majority of votes and likes for an idea the top five best ideas can be published on the dashboard. After the selection of the top five popular ideas based on poll results the employees/students need to convince the panel of judges to evaluate the feasibility and practicality of their respective ideas implementation techniques. Out of the five ideas only three ideas would be selected by the judging panel. Now the three teams along with their respective judges should visit the place of need and the possibilities of ideas should be proved within the stipulated time. Depending on the maximum ratings and satisfaction of the needy the best idea should receive "Honor of Social Innovation". The capital for this can be arranged by the organization/institute.

Hence the inclusive innovation is a market based approach but not a state-driven or top down approach. There is a need to find technologically compatible business models and ultra low cost products and services which can support inclusive innovation in various sectors such as housing, financial services, health and medical care, clean energy, education and mobile technologies. India and indeed the world should be benefitted by these innovation models on a high scale.

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# APPROPRIATE TECHNOLOGY FOR AGRICULTURE

1.0

The word technology conjures up images of sophisticated computers, hybrid cars, satellites that look down from space and networks that span the globe. In this age of globalization, technology has become synonymous with the high-tech and the urban. But a key question that needs to be addressed is this: is high technology, represented by the socio-industrial-military complex, always appropriate for a given application?

The case of farming is typical. India owes much of its food security to the green revolution of the 60s and the 70s, led by the pioneering efforts of Norman Borlaug and M. S. Swaminathan. Fertiliser intensive farming using genetically modified seeds and mechanized means of production became the norm. This ensured that food crop production increased year after year, but at a terrible cost. We reaped the benefits then but the chickens have come home to roost now. The ill effects such as reduction in soil fertility, washing away of top soil and contamination of the water table are only now becoming apparent.

Given that we have to feed our teeming millions what do we do? Abandoning our current ways without suitable alternatives is not an option. One possible alternative is organic farming. Organic farming here refers to the growing of crops by substituting fertilizers and GM seeds with natural insect repellents and manure.

As part of an exchange program, there was a joint session with students of NYU Stern here in Great Lakes which concluded with a visit to the neighboring village of Kariacheri. There we met Ms. Kavita, who practices farming without the aid of chemical fertilizers and pesticides. We slowly made our way on foot to the middle of her cultivated fields through the tracts of emerald green paddy that shimmered in the wind, a sure sign of healthy crops. After a short walk we reached our destination, a raised island with a shelter in this lake of living green. Sipping on tender coconut water, we listened as she described her farming practices and the challenges she faces.

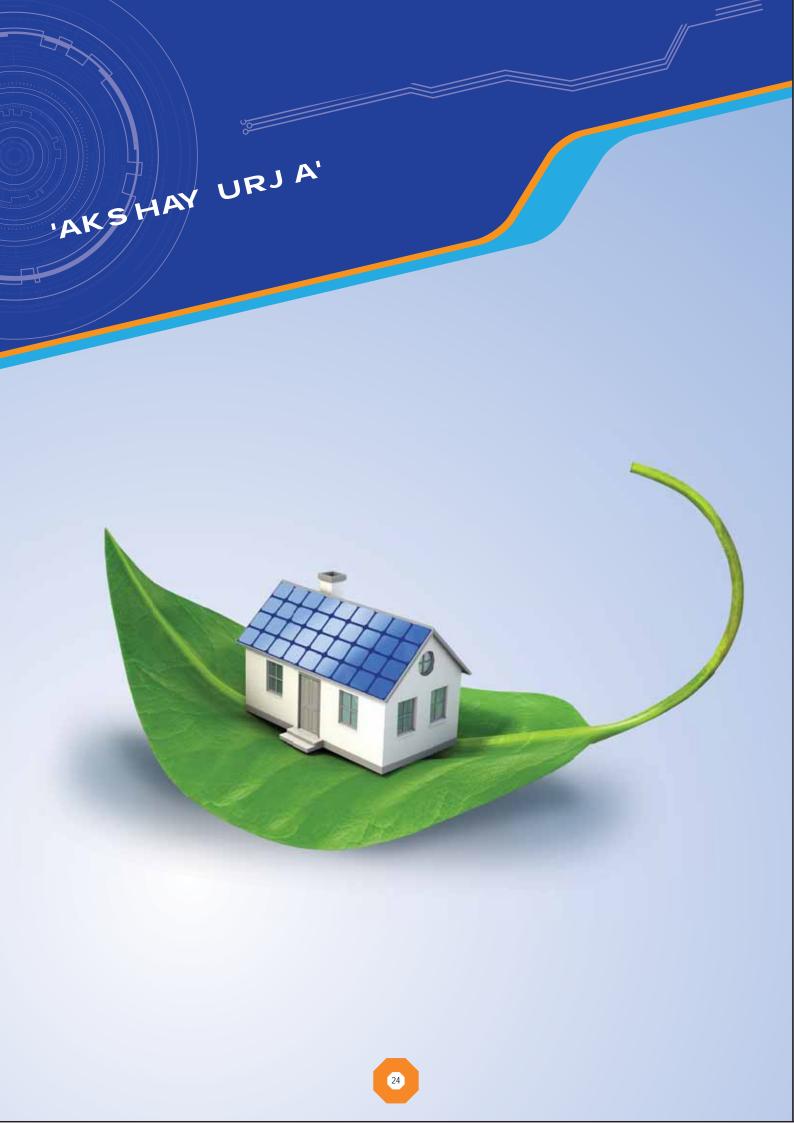
The key to organic farming is to raise animals and birds on the farm, especially cows, as cow manure is an excellent source of nutrition for plants. Two homemade fertilizers called Panchakavya and Amrita Karaisal, both based on cow dung and urine are used to enrich the fields. Panchakavya is made by mixing five different dairy products, namely, cow dung, urine, ghee, curd and milk. The resulting mixture is then allowed to ferment over a period of time forming a sweet smelling liquid that provides the right mix of nutrients for the growing crops. Amrita Karaisal, made by mixing jaggery, cow urine and cow dung with water is also an excellent fertiliser. The neem tree is a source of strong, environment friendly insecticides which are made from all parts of the plant including roots, leaves and fruits. Neem based sprays keep the crops insect free without the collateral damage associated with chemical sprays. Azolla is a genus of aquatic fern that is grown as companion plant with rice paddy. It fixes nitrogen into the soil and blocks light from reaching weeds that may grow with rice. It is also an excellent cattle and chicken feed and is proven to increase milk yields and egg quality respectively. By the use of self-sustaining and mutually reinforcing natural techniques and mechanisms, Kavita has created an economically viable and eco-friendly farm.

So where is the catch? The socio-economics of this venture are currently not scalable and the reasons are purely social. Other farmers in the village use the conventional chemical based fertiliser and insecticide methods and do not believe in the efficacy of the organic model. They sell their crops to the middle men in the rice market who then turn it into polished rice. Organic farming, on the other hand is focussed on direct selling to retailers at higher margins and unless other farmers in the area adopt organic farming practices, the economy of scale necessary for direct selling simply does not exist.

What Kavita has done is to create a technology demonstrator for the successful implementation of organic farming. However the economics of this model is being questioned and is rejected on grounds of perceived inefficacy, when ironically organic farming is being implemented widely in the west. Organic farming, based on traditional farming techniques, is appropriate technology for large scale agriculture and as such is a viable environmental friendly alternative that also assures higher margins for the farmers involved.

**Ravisekhar .S** PGPM, Great Lakes Institute of Management, Chennai





#### **BUSINESS OPPORTUNITY**

The current energy crisis and finding a viable solution for it constitutes an important contemporary debate in India. The energy crisis has a great bearing on all socio-economic development of our country and its sovereignty. To worsen the situation, there has been sharp rise in the consumption of energy in India over the last decade. Our nation is struggling to achieve energy security at various international levels.

The government remains under pressure to meet the agreed international and domestic commitments and show support for further carbon emissions reduction through effective policy and regulation. Companies are also concerned, and many are now looking to extend their value chain both upward and downward to secure their energy supply.

We introduce a new system that provides society an independent energy and grid-independent electric power using renewable power sources (such as solar, and water) and can drastically reduce carbon-dioxide emissions, thereby offering a completely green energy with flexibility and economic advantages. We believe and assure you that -

"If it rains, it's fuel. If it shines, it's fuel. It's all green fuel".

#### **OBJECTIVE**

Our business model is a response to the need for a viable solution to effectively meet all the energy (electricity, cooking gas and car fuel) requirements of a household.

#### MISSION

To provide the finest green energy solutions for new constructions as well as existing building owners. Through careful analysis, attentive customer support, and cost effective solutions, GREEN Co. will become a stable energy business serving the Indian society.

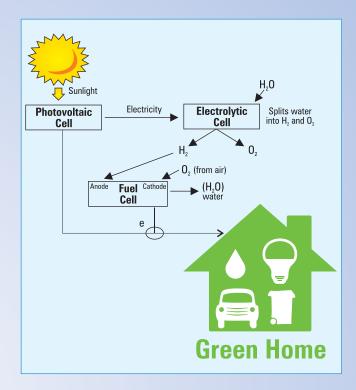
#### **BUSINESS IDEA**

Green Home is a system which avails all the energy requirements using a hybrid system (completely GREEN) for a house, which employs photovoltaic (PV) panels to convert sunlight into electricity that is harnessed to extract hydrogen from harvested rain water or tap water. The stored hydrogen will be used through the fuel cell stacks to power your entire house leaving back the water, which can be pumped right back into the system.

The personalized home with the rainwater harvesting system and hybrid energy system consists of an array of solar panels on the roof, a battery system for night time power supply and a small electrolyzer (a device, about a size smaller than a washing machine that uses electricity to break down water into its component hydrogen and oxygen). It requires a few tanks to store hydrogen, Plug Power fuel cell stack (an electrochemical device that mixes hydrogen and oxygen to produce electricity and water) and a hydrogen refuelling kit for the car. Hydrogen that is extracted from water using solar energy is sustainable and renewable energy. Make hay (or hydrogen) during sunshine and then use the stored hydrogen to produce heat for cooking and electricity for home appliance.

On a typical sunny day, the solar panels convert sunlight to electricity; a part of the electricity will be consumed to run home appliances, including television and other modern conveniences. The remaining power recharges the batteries - which provide electricity for the house during night and power for the electrolyzer, which splits the molecules of purified rain water into hydrogen and oxygen. The oxygen is vented and the hydrogen goes into the tanks where it is stored for use in the cold, in the night and during the dark winter months. From November to March, the stored hydrogen will be used through the fuel cell stacks to power our entire house and the only waste product is water, which can be pumped right back into the system.

A key strategy in our home equipped with the hybrid solar hydrogen system and rain water harvesting system is to create a new lifestyle which is convenient, clean, energy-efficient and sustainable. It is very true that the combination of a fuel cell electric vehicle and the hybrid solar hydrogen system will help lead to the establishment of a hydrogen society based on renewable energy, resulting in a major reduction of  $CO_2$  emissions and greater energy savings and environmental sustainability.



#### SUMMARY OF ADVANTAGES

- Off-grid power generation
- · Availability of hydrogen fuel for cars and cooking
- · Low maintenance and reduced down time
- 24x7 Availability of energy
- Quality of electricity

- Environmentally benign
- Energy independence
- Lack of noise
- Efficiency
- Lighter and longer life time

#### THE MARKET AND OUR CUSTOMER

- Despite an ambitious rural electrification programme, 400 million Indians still have no access to electricity. 80% of Indian villages have at the most an electricity line; while only 44% of rural households have access to electricity.
- The substantial energy needs in India arise out of buildings and according to a report on Indian Urban Infrastructure and Services, about 70% of India's infrastructure that will be there by 2030 is yet to be built. We can therefore think of the magnitude of energy requirements posed by the buildings and as evident in many developing countries, there is nothing much being done to make green buildings and energy efficient infrastructures. Hence there is a need to address the issue of energy efficiency in both commercial as well as residential buildings.

All these villages, towns and urban infrastructure provide a huge market to our project.

#### SALES STRATEGY

The sales strategy of GREEN Co. is to make Green energy more realistic and financially accessible. GREEN Co., provides two options to the customers, by which they can either purchase the equipment and use the green energy for lifetime or avail another economic option wherein GREEN Co's customers will not have to purchase the actual equipment to receive Green Energy. The consumers could purchase energy services under long-term predictably priced contracts and avoid the significant capital costs of ownership and operation of green energy systems. Hence consumers do not have to own the system that supports them. They just have to pay for the energy usage.

## MARKETING STRATEGY – SOCIETAL MARKETING CONCEPT



The A's of effective marketing

#### BUSINESS PROPOSITION AND OPERATIONAL PLAN

#### Phase 1 - Market Entry (first two years):

GREEN Co. will install minimum Green Energy System in various places across the Delhi.

Phase 2 - Vertical Integration (next three years):

After successfully establishing itself in the Green Energy Market, GREEN Co. would vertically integrate towards providing the innovative Green Energy System in and around metro cities like Bangalore, Mumbai and Kolkata.

Phase 3 - Sustainability (future plans):

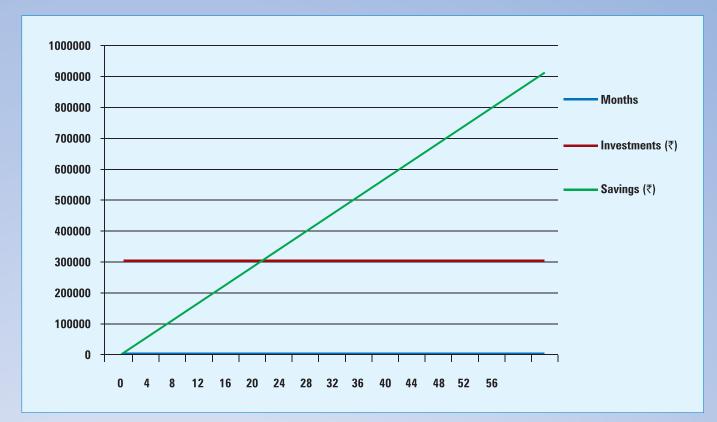
GREEN Co. would upgrade this system to 100kW – 200kW to ensure future sustainability.

#### FINANCIAL FEASIBILITY ANALYSIS

Unit cost: (5 kW)	
Equipment Cost	Cost (₹)
Electrolyzer system (incl S&H)	1,00,000
Photovoltaic modules (solar panels)	75,000
Gas storage tanks, relief valves, tubing, refueling kit	30,000
Fuel cells	50,000
Battery system	20,000
Installation cost	25,000
Total	3,00,000

Months	0	1	2	3	
Initial Investment (₹)					
Equipments costs (FC)	300000	0	0	0	
Maintenance cost (VC)(0.1% of FC)		300	300	300	
Total cumulative cost	300000	300300	300600	300900	
Saving (receivables) per month					
Electricity		1200	1200	1200	
Cooking gas		1000	1000	1000	
Car fuel		12000	12000	12000	
Total cumulative saving per month		14200	28400	42600	
(Assuming 2 cars, each car travelling 25 km per day, 50 km = $>$ 5 ltr petrol = $>$ `400 per day)					

#### BREAK EVEN ANALYSIS



#### **COMPETITIVE ADVANTAGE**

- First mover advantage
- Sustainable equipment procurement
- Sustainable clean technology
- Alternate energy production
- Alternate revenue streams



Bhairawkumar Great Lakes IEMR, Gurgaon



**Poonam Kumari** Great Lakes IEMR, Gurgaon

# GRASS ROOTING GRASS ROOTING TECHNOLOGY

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## Innovation is the whim of elite before it becomes a need of the public. ~ Ludwig Von Mises

Technology has a very peculiar way of permeating the society. In the past, it was harnessed repeatedly to generate a steady stream of profits for businesses all over the world while straying from a holistic social development. Over the last century, technology has been a privilege of the classes rather than an instrument to shore up the masses. It is its empowering nature and the ability to make a difference that has opened doors to its unbridled monetization which is often coupled with exacerbated disparities. The Volkswagen Beetle, after all, was not so much of a people's car as it was rolled out to tap into the growing purchasing power of an average German and also to further the ulterior policies of the ruling Nazi party.



Volkswagen Beetle, first produced in 1931

Along the same line, premium watches with a disproportionately high investment in R&D never adorn the wrists of a common man. This may be similar to the proprietary business policies pursued by much loved technological bellwethers of the modern world, such as Apple Inc. Known for ideating path breaking products in the last few decades, Apple has been largely driven by revenues mainly from its iProducts, which might still burn a hole in the pockets of the middle class. Talk about socio-economic classes and it becomes evident that technology just skims through the surface of the society at large. What we really need here is an overhaul of the existing framework through which technology is distributed so that most of mankind can enjoy the fruits of its labour.

Given the current disposition of the corporate organisations all over the world, Inclusive Innovation may seem to be an elusive concept. The economies of scale do not really hold sway when manufacturers are inclined to selling cutting-edge technology at a premium cost which is usually not a true indicator of its value. The shortcomings of such a price mechanism are twofold. Firstly, a major chunk of society is not able to enjoy the benefits of technological advances, and is usually left in the fray in hopes of a better standard of living. Secondly, technology, or the lack of it, is a major deterrent in the overall development of a larger economy as many small enterprises bite the dust in the wake of the absence of technical savoir-faire. Added to this is the complete alienation of certain groups of society, such as the physically challenged and the elderly, from the influx of technology. More often than not, it is not just the ability to buy, it is infact the dearth of technically advanced products which are not available to many. For instance, farmers in India are better off in states like Punjab, Gujarat and Haryana,

where agricultural growth rate is much higher, owing to superior technological infrastructure, than in states like Assam. Consequentially, such an inequitable distribution of technology leads to the stratification of society and the nation at a whole new level.

But as governments and social organisations are coming of age, technology is increasingly slated as the harbinger of an inclusive and egalitarian growth. China's SPARK programme has been conceptualized solely to act as a booster shot for its flagging rural economy. It seeks to utilize the country's technological prowess to enhance agrarian growth. The Council of Scientific and Industrial Research (CSIR) India has been making substantial advances in social growth oriented technology. From a new diagnostic tool for asthma and footwear for diabetics, to disease resistant rice variety and improved water portability in far flung areas, CSIR is leaving no stone unturned to make use of technology in order to bring about inclusive growth. The Solekshaw, a solar power assisted rickshaw may just be the start of a new revolution even as NGOs such as SRISTI and The Honey Bee Network, and major Indian firms such as ITC continue to make forays on digital platforms through educational websites and online kiosks.



Lifeline for many - A Solekshaw, solar power-assisted rickshaw.

The time is ripe to make technology, which is currently a mere plaything for the affluent, a mandate for all. Governments would do well to encourage policies to bolster optimum utilization of technology for the emancipation of all and sundry. With strategic subsidiary mechanisms in place and an effective distribution system, technology has a secure future in the offing for everyone.

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Anubhav Rawat MICA Ahemadabad SWIPING SUCCESS

What is common between Tata Steel, Essar Steel, Hero Honda, TVS Motors, Hindalco, Jindal Power and Steel, Sterlite, Maruti and Hyundai ?

HE

Don't even try! Even the best quizzing brains in the country would not be able to give the answer! It is an unknown logistics support company from the eastern part of the country. It is an amazing success story of a first generation entrepreneur Shoummo K. Acharya, who intelligently used a low tech product to serve these top Indian companies. His company VI eTrans Pvt. Ltd. (www.etransinfo.net) uses magnetic swipe cards - yes, the same (credit/debit) cards all of us love to hate (or is it hate to love?) - to track trucks on the highway.

#### BACKGROUND

India's commercial vehicle population is about 10 million (2 million in 2002) of which 20% are in the organized sector, these vehicles are called permanent vehicles and they serve organizations with whom they have prior contracts. It is actually the remaining population which plays a major role in the Indian transportation industry, they are called bazaar vehicles and are owned by small businessmen or by the drivers themselves. A truck registered in Punjab might carry wheat to Jamshedpur, steel to Guntur and chilli to Kottayam, they do not have a fixed product to carry or fixed destination to go to. Except the Automobile and Oil Industry, the rest of the industries depend on these vehicles for moving their goods across the country.



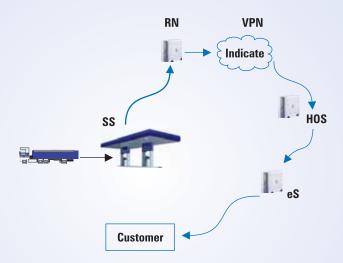
Bankers / financiers / interest / EMI / drivers / brokers / agents / cost and quality of diesel / roads/ spares / tyres / govt. policies / highway robbers all these factors play vital role in the life of a truck owner in India. For a small time businessman in the transport industry every single paisa saved is a paisa earned. Each truck that plies in India would feed at least 15 families per trip. Efforts to bring in discipline in to this sector are always met with stiff resistance from these players. Any new product or system which does not include this segment would not find any takers but convincing this segment to spend even a single paisa extra is a herculean task. In this background Mr. Acharya launched his company in 2002 and made it a mega success.

#### **TECHNOLOGY AND SOLUTION**

Back in 2000 when Acharya, a seasoned logistics person chose asset tracking as his line of business, he did not have many choices. GPS was very expensive and IVR based tracking introduced by a popular company never took off. His chance meeting with a friend who was working for a payment gateway provider to the credit card companies triggered the ingenious idea of using magnetic swipe cards for tracking of trucks on the highway. When a credit card is used in a commercial establishment the data from the magnetic strip gets transmitted to the nearest hub (server) through the PSTN (telephone line) and from the regional hub it gets pulled by the respective service provider through VPN. Acharya decided to use the same route to track assets on the move and the company VI eTrans Pvt. Ltd. (www.etransinfo.net) was born.

The magnetic swipe cards carry unique numbers and when swiped the swipe machines capture this number. These swipe machines are pre-programmed to transmit this data with time stamp to the nearest node (provided by the credit card backbone support company) by dialing a local number at a pre-determined frequency if they are permanently connected or the moment they are hooked to the PSTN line. From the nodes, this data is transferred to the nearest regional servers and in turn get pulled by the national server, from the national server they reach eTrans's host at Kolkata where they get deciphered.

#### SCHEMATIC DIAGRAM



Legends: SS - Swipe Station, RN: Regional Node, HOS: Head Office Server, eS: eTrans Server

#### THE BUSINESS MODEL

Acharya's primary task was to create swipe stations across the country (a place where the truck drivers can get the tracking cards swiped) and these swipe stations have to be the natural stop-overs of the drivers. He zeroed in on STD booths near the check posts, Dabhas on the highways and the petrol pumps, which led him to the next step - a tie up with an oil company. BPCL (Bharat Petroleum Corp Ltd.) was the natural choice because it was the most aggressive of the public sector oil companies. BPCL also saw an opportunity in the tie up as this would attract more non regular vehicles to its diesel station which could lead to increase in revenue.

eTrans established site offices at the clients' factories, where the cards were issued to the truckers. These site offices also collected details about the trucks like the truck numbers, destination, product details, transit time (if it was not prefixed) and sent them to eTrans head office. These site offices train drivers on the benefits of swiping and gave them the swipe station list on their routes. When the drivers started swiping the card, the back office linked the data provided by the site office and created several reports about the truck's movements including their expected time of arrival at the destination.

It did not take very long for Acharya to realize that transporters were not his direct customers and he started addressing the shippers. He got his first break through at TISCO; the Tata company made tracking compulsory for all transporters and the rest as script writers would say is 'history'.

The logistics heads of shippers are not interested in receiving voluminous data on truck's position, this data would give them headache rather than any solution. eTrans realised this at an early stage and have created many reports to help the logistics personnel guys. eTrans sends daily exception report to all their customers giving them the details about the delays and the projected arrival details of these trucks. Clients can also log on to their home page on eTrans' server and get details about individual trucks.

Companies like Maruti understood the true power of asset tracking and exploited the services of eTrans to the hilt. In fact, it was customers like Maruti who made eTrans realize the potential of tracking and made them create many reports which later became eTrans' USP. TISCO intelligently used the reports to redefine the transit time to many locations and renegotiated better pricing from transporters. The client list of eTrans proves how successful the business model has been, even companies like Ashok Leyland, Tata, Reliance could not replicate the success of eTrans in this business domain.

eTrans proves that technology is only an enabler and not a means to success; it is actually the excellent domain knowledge, customer centricity and sound business sense that would make firm a real winner. Mr. Shoummo Acharya, when quizzed on his phenomenal achievement in his decade of business, says "We are not in 100 m race. We are in marathon. A single most achievement has been our trust in this domain and commitment to creating long term value and our ability to retain customers for about 10 years."

P.S.: Acharya has introduced GPS in his product line and the success story continues.

K. Subaash





Food security has emerged as one of the greatest concerns for countries around the world. Increasing population , diminishing agricultural land due to urbanization, increasing climate changes and changing lifestyles in developing economies have posed a serious threat on building a sustainable model to ensure food for all. This, clubbed with the lack of integrated technology in the agriculture sector, insufficient infrastructure for production, processing, storage and distribution, government regulations and price speculation in agricultural commodities leads to surplus and wastage in one part of the world and famine in the other.

The problem is becoming more challenging day by day. This leaves many questions unanswered. From India's perspective, is there a second green revolution that is to be seen in the near future? Is average productivity going to increase from current figures of 40% of developed economies' productivity? Will the people from rural India stop moving towards towns and cities in search of greener pastures, leaving farming on the back foot? Will the government bring about a change and revolutionize the agriculture sector or will it keep growing only at 3%? Will policies be formulated to support inventions, innovation and diffusion of technology or will it be neglected?

There are a lot of questions that come out but let us look into possible solutions. Technology, mostly Information and Communication Technology (ICT), Biotechnology and Nanotechnology have great potential in providing solutions to the problem. Among the three, ICT has the most crucial role to play in the present context.

ICT is defined as "a diverse set of technological tools and resources used to communicate, create, disseminate, store, and manage information". These technologies include computers, the Internet, broadcasting technologies such as radio, television and telephony.

ICT can open up new avenues in knowledge management which can play an important role in meeting the prevailing challenge related to sharing, exchanging and disseminating knowledge and technology from where it is available to where it is required. Today, Agricultural Institutes are rich with research and best practices know-how, but the farmers lack even the basic knowledge and expertise to come out of their subsistence farming practices and participate in commerce.

ICT can integrate various knowledge bases, research work, best practices know-how at the various agricultural institutes at regional and national level, research organizations, corporate and international organizations and pass on the information to the value chain participants effectively, wherever required, at the right time. It can also stop the duplication of research work at the various organizational levels and educate farmers on the various government schemes, subsidies, training programmes and facilities available to them for their benefit. Today, farmers do not know what to grow or how to grow or when to grow so that they can sell their produce and find the right buyers. Buyers have a very limited idea about what is grown where and at what point in time. At a national level, though remote sensing data can estimate the expected production, at the local level, the knowledge about which crop is grown where is not available to the buyers. This leads to 30% wastage due to lack of reliable information and poor supply chain management. The end result is that farmers do not get enough buyers and crops perish in their fields. Secondly, though technology and financial support is available for farmers to adopt newer technologies and increase their productivity manifold, this information still remains in books and marginal farmers do not benefit from it.

ICT is, thus, the most efficient and cost effective way to increase productivity, reduce losses and provide a solution to the ever increasing food security issue. The sooner we understand its value, the better the future we can secure for ourselves.

#### ABOUT THE AUTHOR

The author aims to address the above issue and be a contributor to bring out a solution for the farmers, corporate and government agencies, integrating them with technology. With this in mind, he started his startup 'CropEx technology' with a vision to trace every farmer and create an integrated system where information is available to the right person at the right time.

His initiative, 'CropEx' is an effort to provide agriculture businesses the software solution and technology needed to create a smarter, safer food supply for consumers around the world. They integrate the agricultural sector with Information and Communication Technology (ICT), by putting in place a network of ERP and BI (Business Intelligence) across rural India and collaborating with the different value chain participants along the supply chain to monitor farm produce status more closely. Their robust software solution has an in-build traceability system to track every farm on a real time basis and ensure quality and safety of food for end consumers.

Kunal Prasad Entrepreneur Founder – CropEx Technology Solutions Great Lakes – Gladiator Batch Kunal.prasad@cropextechnology.com





Destinations are the places that have some form of actual or perceived boundary, such as the physical boundary of an island, political boundaries, or even market-created boundaries.

CHARACTERISTICS	DESCRIPTION	EXAMPLES
Prime Attractors	The main attractors that appeal to visitors and that differentiate one destination from another	Rocky Mountains and national parks in Canada; pyramids in Egypt; Niagara Falls in the United States and Canada
Built Environment	The physical layout of a destination, including waterfronts, promenades, historic quarters and commercial zones. Major elements of infrastructure such as road and rail networks, plus open spaces and commercial facilities	London Docklands in the United Kingdom; Venetian canals in Italy; West Edmonton Mall in Canada
Supporting Supply Services	Essential facilitating services such as accommodation, communications, transport, refreshment and catering, entertainment and amenities	Essential at most destinations
Socio-cultural Dimensions	Cultural attributes; bridges between past and present, the mood or atmosphere – ranging from sleepy to vibrant. The degree of friendliness and cohesion between the host community and visitors	The friendliness of Canadians; chaotic transport in China; the music in Ireland; the laid-back attitude of Fijians

Characteristics of a Destination<sup>1</sup>

### **DESTINATION IMAGE**

A visual or mental impression of a place, a product, or an experience held by the general public (Milman and Pizam, 1995).

It could be organic images formed by individuals themselves through such things as past experiences with destinations and through unbiased sources of information (for instance: articles, travel blogs, etc.), or induced images created through information received from external sources, including destination advertising and promotion. It is during this induction of destination image that destination branding comes handy.

### **DESTINATION BRANDING**

Destination branding is about consumers' perception of a destination. It tries to differentiate and communicate the uniqueness of a particular destination with respect to other similar destinations. It is about combining all things associated to a place (tourist spots, culture, people, art, technology, etc.) and selling them together as a unique brand to the tourists so that their belief about the place changes and the destination find its place in their itinerary.

# COMPONENTS OF DESTINATION BRANDING

Destination Branding is not only about the logo or slogan. It incorporates many components that work together to form the destination brand concept. Their management is part of the brand strategy. The components are identity, image, personality, essence or soul, character and culture. The details are in the figure alongside. Brand Identity: How a strategist wants it to be perceived in tourists' minds

Brand Character: The promise of the brand to deliver the experience associated with its name

Brand Personality: The set of human characteristics that are associated with the place. like warmth and love

Brand Image: The reputation of the brand in the marketplace

Brand Culture: The system of values that surround a brand much like the cultural aspects of a people or a country (Upshaw, 1995)

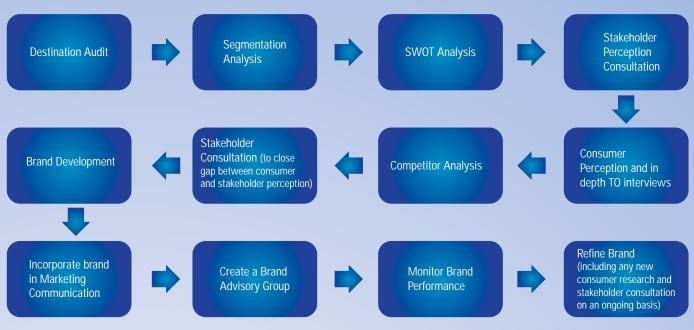
Brand Essence: The emotional elements and values of the brand

Components of Destination Branding

## PHASES OF DESTINATION BRANDING

The destination branding process starts by assessing what a destination's assets are and focuses on how best to present these to each customer, as the assets are largely inherited and not manufactured.

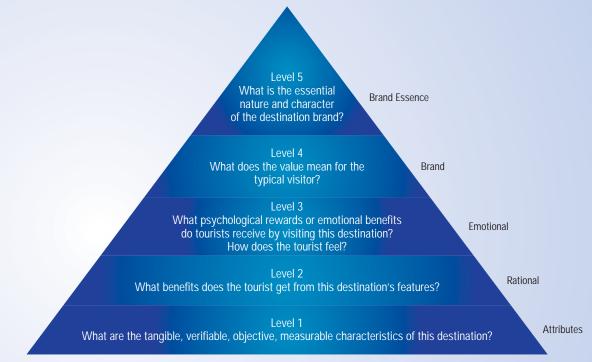
# **CREATING A PLACE BRAND**



The Destination Branding Process

**Phase 1 - Market investigation, analysis and strategic recommendations:** First of all, a destination audit is carried out, where assets are prioritized. A SWOT analysis of the destination and segmentation analysis of the key consumers is done. This drives brand development. Also, key stakeholders are identified and qualitative in depth discussions are carried out with them to understand the perception of key stakeholders and visitors.

**Phase 2 - Brand identity development:** The brand pyramid is a tool that builds up a brand logically from an assessment of the destination's main strengths to a distillation of its essence.



The Destination Brand Benefit Pyramid<sup>2</sup>

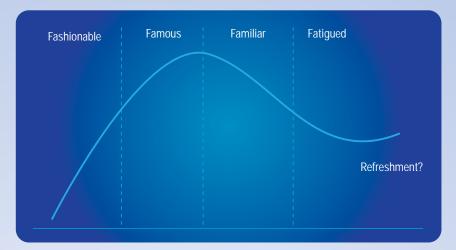
**Phase 3 - Brand launch and introduction, communicating the vision:** It involves the integration of brand with marketing activities, where we are clear about the strategic message that needs to be communicated via various online and offline media.

**Phase 4 - Brand implementation:** The various strategies that are implemented to make the brand a success are the part of this phase.

**Phase 5 - Monitoring, evaluation and review:** It involves the periodic review of the campaign. Hence, destination branding process should be a virtuous circle: the final stage in which brand impact is monitored brings out any refinements that are needed. These are then incorporated in a new stage 1, in which the brand pyramid is revisited and relevant elements are revised.

Holland's national colour 'Orange' being used.

# CHALLENGES OF DESTINATION BRANDING, RESULTING IN MAKING THE DESTINATION FORGETTABLE



• Lack of funding

- Image without cliché: At times, getting away with the past negative image of a place is really challenging
- Destination marketers have little control over the destination mix they are branding

Besides this, creating differentiation about the destination gets difficult at times

- Various organizations are involved in crafting and delivering on the branding; getting a sync between them is a big challenge
- Lifespan of the brand: when strategy needs to be refreshed or completely changed

The Destination Brand Fashion Curve<sup>3</sup>.

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Prachi Garg PGPM Great Lakes Institute of Management, Chennai



# **GREAT LAKES SPARTANS AWARD WINNERS**



# **GREAT LAKES SPARTANS ACHIEVEMENTS**

- Vivek Gupta won for innovative ideation at Proto.in organized by Great Lakes Institute Of Management.
- Amit Gupta, Basu Agarwal, Vivek Gupta the first runners up at Finnix at the All India Level Finance Competition by IIT Madras.
- Ashish Malhotra, Jananee Kumaresan won the Leaders Challenge an event by VGSOM IIT Kharagpur, that involved developing marketing strategies to boost sales of Toyota Etios Q Class and Toyota Etios Liva Q Class Hatch.
- Eklovya Jain, Pranita Dhamdhere, Amit Mehendi won 3<sup>rd</sup> position in the Entrepid, an Online Business Strategy Simulation Game by IIM Indore.
- Abhilash Mohapatra won the Video "A DAY IN COLLEGE" contest conducted by Brain Gain Magazine.
- Anshul Sharma, Debashree Chatterjee and Shashank Shekhar won Drishtikon The Sustainability Challenge, a National-level B-School Competition for ideas/business model by XLRI Jameshdpur.
- Priyakshi Gupta won the Bloomberg UTV Assignment Confluence 2011 by IIM Ahemdabad.
- Amit Gupta and Debdyuti won 2<sup>nd</sup> position in the Inter B-School Debate Competition 'It is not in Public interest to rescue the PIIGS Nations' conducted by Great Lakes Institute of Management.
- Kush Sharma, Rakesh Tripathi and Sahil Raka won 3rd position in the Game On Confluence 2011 by IIM Ahemdabad.
- Richa Chauhan won 2<sup>nd</sup> position in the ET Prodigy 2011, an annual competition based on case study organized by Economic Times in partnership with KPMG.
- Tripta Kishore, Navin Chand and Shoib Rahman won the Back to the Roots event at Confluence 2011 by IIM Ahemdabad.
- Avani Mittal won the 2<sup>nd</sup> position in the Special article writing contest by Brain Gain Magazine.
- Dagar Katyal, Saurabh Srivastava, Vishak Raja, Vivek Joseph won the Direct Case study B-Plan competition to start a Online Dating website.
- Prachi Garg & Suresh Ponnuru won 2<sup>nd</sup> position at the Mercurise- B-Plan competition by SIMS Pune.

# **GUEST LECTURES @ GREAT LAKES**

Mr. Gopal Vittal Executive Director, Home & Personal Care, HUL

Mr KovaiSelvan, Senior VP - HR & TQC of TVS Motor, addressed Spartans on "Careers as a Manager"

Mr.VVijayendran - Chief Executive - Domestic Formulations, Orchid Healthcare, addressed Spartans on "Careers as a Manager"

# **EVENTS @ GREAT LAKES**

Yale Conference – 28<sup>th</sup> December 2011





NASMEI Conference – 29th & 30th December 2011





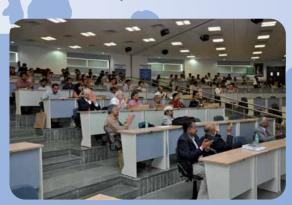
Gravity Release – 29th December 2011



**ISDSI Conference** –

- 4<sup>th</sup>, 5<sup>th</sup> & 6<sup>th</sup> January 2012





# **GRAVITY RELEASE – 29TH DECEMBER 2011**

L'Attitude 13° 05' - 19th & 20th January 2012





International Entrepreneurship Conference – 3<sup>rd</sup> February 2012



Convocation – 27<sup>th</sup> April 2012





# AN IDEA TO CHANGE LIVES

The 7th annual festival of Great Lakes – L'Attitude 13° 05' – was inaugurated by Dr. Bala Balachandran, Chairman and Dean of the institute on 19 January, 2012. Dr. Daniel Heiser, Associate Dean of the Chicago-based DePaul University's College of Commerce and Mr. Faizal Kottikollon, Founder and CEO of the UAE-based KEF Holdings also graced the occasion. The speakers shared their views on the growth of entrepreneurship in emerging economies and the current state of BRIC countries during the ceremony.

Many events were organized during the business festival, among them Spandan which turned out to be one of the most popular events. The case study competition with a cash prize of `30,000 and `20,000 focused on a social issue in rural India. The event received a great response with students from all over the country participating in the competition. The final round of the competition was held at the Great Lakes Campus, during which the top five finalists from the different business schools were invited to present their papers. Mr. Mani, the President of Orchid Pharma and Head of the API Process Research, and Corporate SHE and CSR units of the company, and Dr. M. Sai Baba, Associate Director of the Resources Management Group at the Indira Gandhi Centre for Atomic Research, Kalpakkam, served as judges for the final round of Spandan.

The home team – the Shadow Hunters – won first place while the N&M team from SIBM, Bangalore were awarded second place. Abhilash Mohapatra, Rahul Ray, and Abhinaya Chandra Bose comprised 'The Shadow Hunters' from GLIM. Neelima Makani and Mohit Gupta formed the N&M team.

# TOWARDS A BRIGHTER FUTURE

Mohit Gupta and Neelima Makani, Team N&M,

SYMBIOSIS INSTITUTE OF BUSINESS MANAGEMENT BANGALORE

"Give a man a fish and you feed him for a day.

Teach a man to fish and you feed him for a lifetime."

# **INTRODUCTION**

A small village may not have the best of opportunities but can be abundant in talent that could 'create' the opportunities. Talent when nurtured brings positive changes in the community. One such change can be brought about in Tamil Nadu's Kuzhipanthandalam village by giving the rural women's talent a shape of business idea.

Many women of Kuzhipanthandalam want to contribute to their overall family income by making special ethnic items, and apparel etc. and selling these products into the market. There is a need to identify such women and train them in order to improve their economic conditions. It will also give them (women) a business opportunity that will not only empower them but also will help them in sustaining their families.

**Targeted Market Segments:** 70 percent of the Indian population lives in villages that means there lay a huge opportunity for such a plan. This rural population is a big resource in itself when it comes to answering questions such as the mindset of people living in villages and insight into the rural market. Many companies tend to ignore the people living in rural areas who have a good purchasing power. The women living in Kuzhipanthandalam village can tap this gap to introduce the products made by them.

The potential buyer for them (women) could be both the villagers and the urban population, who are interested in ethnic and traditional clothes and home furnishing items.

**Demographic/Geographic profile:** It is important that the skills be imparted to women from different age groups and capabilities. In the rural parts of India, it is often difficult to motivate the women force but the challenges are easier to address in Kuzhipanthandalam fortunately. The village has a location advantage and the women can target customers from nearby villages and surrounding towns. A help from an NGO or the government support can help them spread the business in the cities too.

**Political Scenario/Government Policies:** The TamilNadu Government is focusing on various women related welfare schemes. The women of Kuzhipanthandalam can seek help from the government to work out a model under one of these schemes. Some of the women oriented welfare schemes by government include:

Sathiyavani Muthu Ammaiyar Ninaivu Free Supply of Sewing Machine Scheme: under which sewing machines are supplied free of cost in order to boost self employment potential for rehabilitation of destitute widows, deserted wives, socially handicapped women and physically handicapped men and women.

**Village Poverty Reduction Committee:** It is a community based organisation formed under the project pre-dominantly with representatives of the target population. Each hamlet of the Panchayat is represented by a woman SHG member from the target population in the VPRC. The Panchayat Level Federation (PLF) Secretary, a representative of the disabled, 2 members representing from youth, 2 members representing other Village level committees are also nominated to the VPRC by the Gram Sabha. The Village Panchayat President is Ex-officio Chairperson of the VPRC.

**Self Help Groups (SHG):** These are self-managed groups of poor women which primarily came into existence to mobilise financial resources through their own savings and lend the same amongst themselves to meet the credit needs of their members. These groups are small homogenous entities of 12-20 women from BPL families.

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS): The scheme focuses on empowering the villagers and has made many villages financially independent. A recent study says that women workers had a national average share of 40.65 percent of total MNREGS person-days in 2006-07, 42.52 percent in 2007-08, and 47.88 percent in 2008-09, exceeding expectations and the stipulated 33 percent share. Tamil Nadu has exceeded the national average of 47.88 percent in 2006-09.

**The Cooperative Movement:** The movement in Tamilnadu has witnessed over the decades substantial growth in diverse areas of economy. To strengthen the economic status of women, the interest rate on the priority sector loans issued to women through cooperative banks, has been reduced by 1 per cent. Under the Revamped Micro Credit Loan Scheme, the interest rate has been reduced to 10 percent from 15 percent. Under working women loan scheme and women entrepreneurs scheme, the rate of interest has been reduced to not exceeding 14 percent from 15 percent. Tamil Nadu was the pioneer in Consumer Cooperative movement that developed even before Independence. The Consumer Cooperatives do market intervention and cater to the needs of the consumers. They aim at giving quality consumer goods, to the public at reasonable price and at correct weight.

**Market Size and Growth Opportunity:** According to the current census report, the total rural population of Tamil Nadu is 3.7 crore (i.e 51.55 percent of the total population in Tamil Nadu) out of which 2.47 crore are literate. The female literacy rate is 65.52 percent and male literacy is 82.08 percent. The figures indicate the vast rural market which can be tapped through this business.

**Seasonality Factor:** In rural market, there will always be a seasonal factor for every business. The consumption level goes high post monsoon and dries up during non-crop period. In this case, the dry period is the non-fishing season.

# **PROPOSED IDEA**

Our key objective is to create a completely sustainable model which is not only economically productive but also is tangible when it comes to building a better and brighter livelihood for the women of Kuzhipanthandalam.

These women would be working for the first time, so it is important to counsel, and guide and train them for skill building, and help them grow their business.

During the initial phase of training, the skill sets of women can be judged and catagorised to know who is more aligned towards the production of which items. An initial group may consist of around 30 women.

Three groups each having 10 women could be formed to be trained to excel in a particular field. The three groups would be: Tailoring Group, Embellishment/Ornamenting Group and Distributing and Marketing Group.

Sathiyavani Muthu Ammaiyar Ninaivu Free Supply of Sewing Machine Scheme would certainly help these women acquire the required sewing machines and support of NGO and educational institutions (like NIFT or Pearl Institute) would play a major role in training them to become skilled.

Categorising the entire group will not only help in training them according to their individual capabilities and creating better products efficiently but also will give these women a chance to excel in the field of their choice.

It is extremely important to ensure that the Initial products tailored by the first group are well embellished by the second group and the third group sells the products door to door and also to the small retailers in the villages and nearby towns.

The embellishment/ornamentation group can ornament the tailored products (by the tailoring group) and take orders for embellishing saris or ornamenting a blouse from other villages.

The most important group would be the marketing and distributing group. These women need to have ample time and social interaction ability. The Government may possibly allow/permit these women to exhibit products in the Tamil Nadu Khadi and Village Industries Board. In 2010-2011 Part-II Scheme was started according to which the government can sanction Rs. 5 lakh to conduct an exhibition. The orders for the scheme were issued on 27 May 2010.

Similarly, government's approval for corporative markets, handloom markets and exhibition will help the women to market their products to various retailers in nearby towns and cities.

**Next Phase:** After the initial phase is completed, it becomes important to identify the people in the village who can lead and help the business grow. This will play an important role in the sustainability of the business. The growth of the business would also depend on identifying the new products which can be made and sold in the market.

The products these women can come up with include:

- Apparels
- Handbags
- Scar
- Craft pieces
- Jute bags
- Socks
- Sweaters
- Purse
- Home furnishings etc

**Final Phase:** NGOs can help the women by tying-up with online retail companies who can sell the products online. This tie up would help the women in promoting and selling their products in the urban areas. The online retail companies will also benefit by showcasing the products made by the rural women. The initiative will help these companies in fulfilling the social corporate responsibilities.

## FINANCIAL

### **Strategic Partnership**

**Government:** In order to start the business, the women of Kuzhipanthandalam would require some initial investment to buy the equipment and raw material. The government can help these women by initially investing through various schemes available. The District Industries Centre in Tamil Nadu is the institution at the district level, which provides all the services and support facilities to the entrepreneurs for setting up small and village industries. The NGO can contact this centre for initial support for the business. The government can also help the rural women in getting the fabric for the apparels at subsidised prices. This can help in reducing the overall cost of the product.

**Suppliers:** The raw material for the products has to be sourced from the nearby supplier. Thus, it becomes really important to build strategic relationship with the supplier. Since, the women would require much less fabric as compared to other customers, the women may have to bear the cost of transportation. Also, the supplier should not be a big player, the NGO should find a supplier who runs a small and medium scale industry so that the women could get the material at reasonable rates.

**Retailers:** After the women make the finished goods, it becomes important to sell these products. The products can be sold through various exhibitions, and stalls in melas etc. but kirana shops and retailers will play an important role in the sales of these products. NGOs may help in tying up with the online retailers to sell the products in the urban areas.

# **OPERATIONS AND LOGISTICS**

**Raw material:** In order to make various products for the business, the women would require raw material such as fabric, thread, needles, cloth, scissors, lace, mirrors, measuring tape, shells, chalk/marker etc. The supply of some of these raw materials would be one of the challenges these women may face. Since, the raw material required would be less, the supplier may not transport the material as it won't be cost effective for him. So, initially one team of women may go and buy the fabric from the government's supplier (from Karur & Erode area) at subsidised prices and transport the material to their village. As the business will grow the quantity of raw material would increase and then the suppliers can be asked to deliver the material.

**Machine:** In the initial phase of the business, the women would require some tailoring machines, pico machines, overlocking machines etc. NGO may take help from the government for the supply of the above machines to the village (15 machines to start with, under government scheme).

**Finished goods:** One of the important aspects of this business would be to forecast the amount of goods to be produced in the initial stages of the business and the transportation of these goods to the various shops. One of the ways to overcome this issue is exhibitions that can be organised by NGOs. This will help in understanding which products are liked by the customers, and then a small quantity can be produced for test trial. Initially, a team of women from the village has to transport the goods produced to various kirana shops and exhibition centers.

#### CONCLUSION

Our objective to provide a sustainable livelihood for rural women can be achieved in the long run with the initial support from the government and other institutions. Various Government schemes will certainly help these women to a large extent. At the same time, the social contacts among the retailers has to be potentially utilised. Our proposed idea would help in building a strong self-help group for Kuzhipanthandalam village.

It is very important to educate the individuals about their needs. Our idea would make them self-sufficient and more importantly independent and skilful. The idea is proposed while keeping in mind the women of various age groups. The younger women are expected to market products and accordingly trained. Similarly, the ornamenting group could consist of elderly women who can come up with a wide range of products. The tailoring group may include middle aged women for effective and efficient results. The effort to uplift the lives of rural women can began with a thought provoked inside them that can give them hope for a brighter future.

# A step TOWARDS sustainability



### VISION

SHILPA SEVA is a sustainable business solution that aims to uplift the quality of life in rural India by providing alternate means of livelihood to rural women.

# SHILPA SEVA - A Sustainable Change Agent

Most of the people living in Indian villages are dependent on agriculture, which due to the paucity of irrigational setup is further dependent upon the monsoon. A part of the rural population work as migrant labors and are now engaged in NREGA activities. Though this provides an additional source of revenue to the village households, the labor work do not employ the skills of people and hence do not seek to increase those skills and therefore the income of the people. SHILPA SEVA is born out of this need – to provide an alternate source of livelihood to the rural women by utilising and enhancing their skills and thus acting as an agent of change in rural India.

# THEORY OF CHANGE

It is believed that the additional income generated from these activities will be utilised by the rural women to better meet their families' daily needs in terms of nutrition, education and healthcare. Future generations, aided by better fulfillment of these basic needs will be able to seek out better sources of livelihood and prosperity. At the same time, those excelling under the present ambit of SHILPA SEVA, will have the opportunity to usher into a better level of sustenance. Thus we believe that SHILPA SEVA, acting as an agent of change, can uplift the quality of life in rural India.

### MISSION

To be a sustainable business solution for uplifting rural masses by manufacturing and marketing of tailored and embroidered clothes that will offer customers great quality and value. This can be done by employing modern designs and traditional motifs through harnessing the sewing, stitching and tailoring skills of the rural women who live in and around Kuzhipathandalam in the Tirukkalukunram block of Tamil Nadu.

### **BUSINESS PHASES**

# Phase 1: Implementation and Spreading Awareness to Target Group

The business would be implemented with 10 women who have the basic skills and interest required for tailoring activities. A school room would be used after school hours as a tailoring center after the necessary permission is obtained from the concerned authorities. Five basic

sewing machines would be procured during this phase. A trainer would teach these women sewing, stitching and embroidery. For the first month, the training would be conducted regularly, 5 days a week. The 10 women would be given an initial remuneration of Rs 3000 starting from the second month. A full time manager would be appointed who would be responsible for managing the tailoring center and for handling the orders and deliveries from the tailors and shops. A transport facility would also be rented for collection and distribution of clothes from and to the tailors and shops.

During the first month, the manager in coordination with SHILPA SEVA, will develop contacts with tailoring shops in and around Kuzhipathandalam. He would promote the objectives of SHILPA SEVA and work towards obtaining contracts for supplying basic sewing and stitching work. This would also help the tailoring shops to grow and expand their business and also provide the initial revenue stream to SHILPA SEVA. Samples of the clothes stitched by the participant women would be showcased for obtaining more contracts. SHILPA SEVA will also organise regular visits for shop owners to the tailoring centre. After the initiation of the supply to the tailoring shops, SHILPA SEVA would work towards obtaining contracts for manufacturing uniforms for the schools in the different villages of the Tirukkalukanram Block.

# FINANCIAL ESTIMATIONS FOR PHASE 1

Estimated Expense for Year 1 and 2: Considered: All expenses in Year 2 increases by 10% of Year 1 expense (Excepting the Rent of School Room for tailoring)

	Year 1			Year 1		
Item	Per Unit Yearly Expense	Units	Total Yearly Expense	Per Unit Yearly Expense	Units	Total Yearly Expense
Rental of School Room for tailoring activities	12000	1	12000	12000	1	12000
Sewing Machine	2000	5	10000	2100	5	10500
Maintenance of sewing machine	100	5	500	110	10	1100
Training for first batch of workers	5000	1	5000	-	-	-
Rental of Transport facility for collection and distribution of clothes from	5000	1	5000	5500		11000
and to the tailoring shops	5000	1	5000	5500	2	11000
Salary to the workers	33000	10	330000	39600	10	396000
Salary to manager	60000	1	60000	66000	1	66000
Cost of sewing and stitching equipments	1500	10	15000	1650	10	16500
Cloth for uniform(Half of Revenue)			80000			220000
			517500			733100

## **REVENUE ESTIMATION:**

Revenue estimation from supply to Tailoring shops

			Monthly Revenue of XYZ
	Tailoring Cost Per Item for		at 30% of total tailoring
Item	tailoring shop	tailoring shop per month	cost
Shirts	100	20	600
Pants	120	20	720
Saree fall	20	15	90
Blouse	80	20	480
Petticoat	50	15	225
Total Monthl	y Revenue of XYZ from supply	2115	

46

Quarter	Average Number of tailoring shops with contract for supplying tailored items	Average Quarterly Revenue of XYZ from supply to tailoring shops
1	5	31725
2	10	63450
3	15	95175
4	20	126900
Total Revenue of 2	<b>XYZ from supply to tailoring shops in Year1</b>	317250

# **REVENUE ESTIMATION FROM SUPPLY OF SCHOOL UNIFORMS**

	Number of students		
Number of students in 1	requiring uniform	Average revenue per	Total Revenue from 1
school	during a year	uniform	school in 1 Year
300	200	400	80000

# TOTAL REVENUE:

# Considered:

- 1. No. of schools in Year 1 = 2; No. of schools in Year 2 = 5
- 2. Revenue in Year 2 increases by 10% of Year 1 revenue.

Revenue		
Item	Year1	Year2
Supply of basic tailoring work to tailors	317250	348975
Selling of school uniform	160000	440000
Total Yearly Revenue	477250	788975

# SUMMARY OF FINANCIAL ESTIMATION FOR YEAR 1 AND YEAR 2:

	Cost	Revenue	1000000
			800000 -
Year1	517500	477250	600000 - Cost
			400000 - Cost
Year2	733100	788975	200000
			0
Total	1250600	1266225	Year1 Year2

HENCE, SHILPA SEVA WILL BREAKEVEN WITHIN 2 YEARS OF LAUNCH.

### Phase 2: Future plans and supplementary activities

After the first two years, SHILPA SEVA would broaden its market to the more profitable readymade garments business. It would obtain contracts from retail shops in Mahabalipuram, Kalpakkam and Chennai to provide garments like kurtas, scarfs, sarees and other apparel. These garments would have embroidery and embellishment works, involving modern design patterns and traditional Indian motifs. The target customers for these would be premium local customers, and foreigners and other tourists who visit the tourist spots throughout the year. The possibility of increasing the sewing machine training batches would be estimated simultaneously so that new machines could be procured to train more women. Since the new batches of trainees would be trained by the women from existing batch, the model would be sustainable and not dependent on external trainers. As the business plan envisions empowering rural women we are also planning to look into segment of women who find it difficult to continue or take up stitching. SHILPA SEVA would also plan and setup a Mushroom farming hut. This would supplement the income level of the overall unit. This diversification is justified keeping in mind the favorable climate, and low investment. A higher return from such activities can help the rural women to magnify their income levels considerably. SHILPA SEVA would also identify various talents of women in the village and would engage them in administrative and book keeping tasks that would further make the SHILPA SEVA operations wholly sustainable.

#### **Replicability of Business Model for Implementation in different regions**

The business model of SHILPA SEVA is fundamentally built around the skills and talents of the women in Indian villages. As in Kuzhipathandalam. The market feasibility for such a model could be studied for other regions also and similar sustainable business models could be evolved for other parts of the country. Studies would be made to analyze the feasibility of setting up of a dyeing unit in a nearby village. This would not only provide the women of that village a sustainable source of livelihood but also form a supply base of the tailoring unit at Kuzhipathandalam. Moving in this direction, SHILPA SEVA's mission of uplifting the quality of life in rural India through engaging and enhancing the talent and skill of the village women would be realised.

THE SHADOW HUNTERS Abhilash Mohapatra Abinaya Chandra Bose Rahul Ray Great Lakes Institute of Management



# WRITE TO WIN

# INVITING ARTICLES FOR GRAVITY XV

The next issue will focus on THE new mantra for businesses today, which introduces *ownership* to make work productive.

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Email your articles in a .doc (or) .docx format along with a high resolution image of the author to gravity@greatlakes.edu.in. Please use the following file naming convention: <article name>\_<author name>\_<institute>

The last date for the submission of articles is 31<sup>st</sup> August, 2012.





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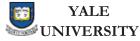
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