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GHAZIABAD
(Estd. : 1995)
NAAC Accredited 'A' Grade Institute
NBA Accredited MCA Programme

2nd CXO MEET

Saturday 17th September, 2016

"Digital India Mission : Transforming India for Tomorrow"

SOUVENIR

Editors
Dr. Sunil Kr Pandey
Dr. Umang Singh

www.its.edu.in

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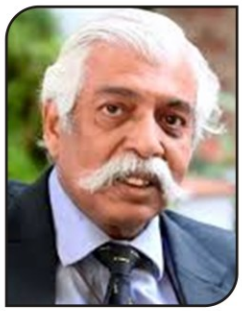
Distinguished Speakers

Dr. V Ramgopal Rao
Director - IIT Delhi

Mr. Manoj Chugh
President (Enterprise Business)
Tech Mahindra

Dr. Anupam Gupt
Dy. Director General - Telecom
Min. of Communication & IT,
Govt. of India

Dr. M.M. Pant
Chairman - PlanetEdu



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From the Editors

The advancements in the field of IT and its applications are touching everyones life in some or other way whether it is Health, Education, transportation, entertainment, businesses etc. This is evident from various research reports of leading agencies including BCG, NASSCOM, IAMAI and many other, that Indian IT industry continues to develop capabilities around conventional and promising markets, verticals & customer segments, expand global delivery presence and increase focus on high value services including product development. The increased usage of technology and its reach, global market conditions, changes in requirements and demand have forced all of us to realize and agree that volatility, uncertainty, complexity and ambiguity is the new normal. However understandings of these dimensions are still meant for a segment which is deeply involved in the domain of IT. To make it more useful, to take maximum benefits to the common man needs a focused attention.

The Digital India Mission is one important initiative of Govt. of India which seeks to lay emphasis on e-governance and transform India into a digitally empowered society. The program is projected at Rs 1,13,000 crore which will prepare the country for knowledge-based transformation. This initiative focuses on ensuring that government services are available to citizens electronically. It also focuses on providing high speed internet services to its citizens and makes services available in real time for both online and mobile platform. The core ideas behind the initiative of Digital India Mission - its provisions, benefits, developments and trends needs to be understood, challenges are to be identified & worked upon strategically so that we are ready with a competent infrastructure, services at affordable price, available & accessible when required and a competent pool of talent which is ready to deliver, when required.

This CXO Meet, being organized by Department of IT, Institute of Technology & Science, Mohan Nagar, Ghaziabad, aims at creating a forum and bringing the Leaders from Academia and Industry to share their views, vision and experience. This will not only be an enriching opportunity for audience but will also lay down a foundation before future technocrats, managers and academicians to realize, understand the industry needs and directions in which it is moving ahead, needs of skill sets and prepare themselves to counter the challenges ahead and at the same time to exploit the opportunities.

The present Souvenir is the collection of Articles which are primarily based on the experience, vision, self contribution and exploration from the experts and practicing professionals. We are confident that this collection of messages, ideas and vision will be a useful source of reference for researchers, practitioners and academicians. Our sincere thanks are due to all those who have, in spite of their pressing professional commitments, contributed articles and shared their thoughts. We wish to take this opportunity to thank all the contributors for their efforts and cooperation.

We are thankful to the Chief Patron and Patrons of this event for their involvement, encouragement and continuous support in organizing this event and boost our morale in this humble effort. The efforts and endeavors made by the faculty members of Department of IT, MCA students and administrative staff should not go unnoticed. We wish to acknowledge that without their efforts, this event would have never been a grand success.

Prof. (Dr.) Sunil Kr Pandey
Dr. Umang Singh

Foreward

Dr. R.P. Chadha
Chairman
I.T.S - The Education Group

This is an era of convergence, collaboration & co-existence. The Information Technology has played a crucial role in this shift of paradigms. The IT and convergence with various different domains and streams are giving way to the development of wide variety of applications impacting virtually every domain of life. This is the key to ensure the inclusive growth of society. The awareness about the facilities & services available online, there accessibility at an affordable price would help in bridging the digital divide and making the line thinner.

The increasing reach of technology to a larger segment of society and ongoing developments & researches has led to their wide diffusion thus increasing their economic and social impact. Virtually every domain such as telecommunications, health science, electronics, business enterprises, transportation, governance, judiciary and other streams are witnessing the developments & inclusion of newer tools, applications & IT services to improve their performance and operations.

This digital strength needs to be taken forward to masses where every citizen of the country owns it, feels it and experiences its power. This requires lots of efforts from Government, Policy Makers and at the same time from businesses, academic institutions and other social organizations to create awareness among people.

The concept for Digital India initiated by the Prime Minister of India, is an attempt to achieve this and to take India at a stage where every citizen is well informed, well connected and digitally empowered. This can succeed only through awareness, a simple mechanism of easy to use and an infrastructure that can enables it to happen all this.

I am confident that high level of deliberations & experience sharing by the Industry leaders, sharing of vision by those who are leading the Industry from the front, will provide the audience an opportunity to understand the current state of affairs and visualize the future, where the Indian IT Industry is marching ahead. This **CXO Meet** with the focal theme **"Digital India Mission: Transforming India for Tomorrow"** will also help in understanding the challenges and limitations, those needs to be understood and countered to ensure the attainment of goals set by the Industry.

I wish the organizing team very best in their endeavor.

Dr. R.P. Chadha

Glimpse of Department of IT

1. About The Institute

I.T.S, Mohan Nagar, Ghaziabad, one of the premier institutes run by I.T.S - The Education Group, established in 1995 and is a NAAC Accredited "A" Grade Institute. The Group is committed to its vision to provide quality value based education with a focus on excellence in academics, offering 20 Under Graduate, Post Graduate and Doctoral programs in the field of Information Technology, Management, Engineering, Dental, Pharmacy and Bio-Technology through its 04 campuses at Mohan Nagar, Murad Nagar and Greater Noida, 08 institutes with a strong base of over 750+ committed faculty and about 8,000 students. The Institute Offers Under Graduate and Post Graduate Programs in the field of IT and Management. The Institute offers NBA Accredited MCA 03 Years and MCA 02 Years (Lateral Entry), PGDM and MBA Programs approved by AICTE and affiliated to Dr. A.P.J. Abdul Kalam Technical University (previously known as UPTU), Lucknow.

2. About Department of IT

The Department of IT offers MCA-3year and MCA (Lateral Entry) courses. The first batch of MCA was admitted in 1997 and then was affiliated to C.C.S University, Meerut. After establishment of U.P. Technical University in 2000, the MCA course was transferred to it which is now known as Dr. A.P.J Abdul Kalam Technical University, Lucknow.

With a strong team of well qualified and competent faculty team the Department of IT always strives for excellence and is continuously engaged in overall development of students through academic rigor unique events and activities including CEO MEET, IT-SUMMITs, Seminars, Conferences, workshops, inter-institutional fest, Alumni Reunion and innovative teaching learning practices.

Our Students have been constantly performing with excellent results and figuring in Merit position in University Merit list which is announced time to time.

The first batch was passed out in the year 2000 and since then we have a strong base of 1650+ Alumni serving across the globe in leading organizations. This is an evidence to the successful journey of the Department of I.T.

2.1 Academic Programme

2.1.1 Placements (MCA)

The placement track of MCA Programme at I.T.S, Mohan Nagar, Ghaziabad, in recent years, speaks about the strength of Department's Academic Rigor, Impact of Value Added Modules conducted by Skill Development Cell and strong coordination among Academic Coordination Team, Skill Development Cell and Placement Team of Department of IT. **Presence of MCA Students in leading IT Companies including: IBM,TCS, WIPRO, NIIT, Oracle, Steria, Syscom, Technologies, Tech Mahindra, JK Technosoft, Ashcomp, Paramarsh Infotech, Mansa Infotech, Pula Tech, Synergy, Logitech, CBS, Mobify, Webking, Web Nexus, Saffron, ASG, NITS Solutions, CSC, Cognizant, Accenture, Ford, Public Sector Banks, Defence Services etc. is an evidence to the strength of our MCA Students.**

2.2 IT Infrastructure & Facilitates

The Department also looks after creating, upgrading and maintaining one of the best IT infrastructures in the vicinity. In recent years the entire IT Infrastructure have been upgraded with latest Configuration of Computers, fully automated Cloud based Wi-Fi network, Racked Server rooms with latest Server equipped with proper security system to protect Networks from any vulnerability. The computer center also ensures the seamless secure Internet connectivity that caters to the need of all the users of the Institute. The Video-Conferencing facility at the Institute leverages to collaborated tie-up with the experts for meeting, seminars & discussion on various issues.

2.3 Initiatives taken by Department of IT

The Department of IT, apart from regular academic curriculum & rigor, has a strong Industry-Academia connect through CEO Meet, Summits, Conferences, Seminars, Guest Talks. Throughout the year various events are organized by the Department.

CEO Meet and IT Summits were ambitious events and probably the first of its kind in an academic Institute, in which Top leadership of leading IT companies participated, addressed the gathering and shared their experience. These included Microsoft, IBM, Infosys, Polaris, Dell, Aircel, Huawei Telecom, Dhiraagu Telecom (Maldives), Tech Mahindra, Planet EDU, Inventors India Foundation, SMAK, Voyzon Technologies,Oracle, Wipro, SAP,TCS, NIIT.

2.4 Guest Talks/ Special Interactive Sessions

The Department of IT provides ample opportunity to its students of MCA Students to meet, listen and interact with the globally renowned experts from Industry & Academia to understand the pedagogy, research activities and explorations being done at other good places which helps them in finding the gaps and work upon them.

2.5 Skill Development Cell & Club Activities

The Skill Development Cell is continuously engaged with Placement Team to understand the trends and requirements of the Industry relevant for the placement of students, identifying the domain areas, identifying Resources and conducting training/ workshops/ value added modules for students of MCA Program to help them in understanding their strength by counseling the students, understanding the technology, sharpening their technical skills. These skills are practiced through Projects. This has yielded good result and placements of our students on specific technologies are evidence to it.

With an objective to inculcate the spirit of organizing capabilities, to engage students with Industry Leaders through exploring, communicating and inviting them in various activities & events, various clubs are formed including DBMS, Java, Web, Dot Net, C Clubs etc.

These clubs are primarily run by students and various activities including Guest Talks, Workshops, Quiz competitions, Programming Contest like SPARDHA, SANRACHNA, ABHIKALPAN are the activities of various club.

2.6 Academia-Industry Interface

1. Throughout the Academic Session Department has various activities to make learning more effective, overall development of students through the work experience on live projects under

the mentorship of IT experts of leading companies always add value to the students overall understanding of Systems, processes being followed and standard to be ensured with.

2. In our efforts to provide a competent forum for students to come forward and compete in a competitive environment with very popular Inter-institutional events of the institute including the participation in recent versions of SAMAGRA, INNOVATION (A Project Development Competition - 27 Colleges from far off places), Technovation. The participation of large number of students from various institutes from various states across the country in these events provide tough competition to all the participants to perform, demonstrate their technical, behavioral & inter-personal skills and win.

3. Exposure of real Industry work environment and culture to the students plays crucial role in their overall development. It provides them an opportunity to see, observe and understand the real work environment and culture and prepare them accordingly. It also inspires them to put their best of efforts to be a part of such leading organization in future. The Department of IT regularly conducts visits of our students to leading IT Companies. The recent visits of our MCA Students include TCS, Noida, SOPRA Group, Noida, Narora Thermal Power Station (to see how IT is used in Atomic Power Generation), Narora, Durlabh Computers, New Delhi

2.7 Alumni Association & Engagement

The Department has very strong Institute-Alumni connect with a base of about 1650+ Alumni of MCA program. Throughout the year, our Alumni are actively engaged with the institute through their participation in Seminars, Conferences, Meets, Reunion, conducting Workshops for existing students, Guest talks, career counseling, support in Placement and so on. In this academic year **86 Alumni visited Institute, apart from about 800 Alumni who participated in recent Alumni Meet** held on 1st Saturday of December, 05th December, 2015.

2.8 Sports

I.T.S motivates students to participate in games and sports activities. Institute is having well equipped Sports Complex with facilities of outdoor and indoor games under one roof. Sports facility include Table Tennis, Carrom, Cricket, Chess along with Badminton and Volleyball courts. Institute also organizes various in-house, intra & inter-college competitions every year. Institute has advanced gymnasium facility in the campus. It is equipped with all latest exercise tools and machines.

2.9 Consultancy

The Department of IT also undertakes the conduct of Training Programs for other organizations too. Our prominent client has been Indian Air Force. In last 05 years we have trained over 600 Air Force Officers/ Staff on various technologies and applications including Database Administration & Maintenance, Computer Hardware, Computer Networking, Management & Maintenance, Network Security Mechanism, Web Application Development etc. Dept of IT was also instrumental in Automation of functioning of Ghaziabad District Collectorate Operations.

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प्रो. वी. रामगोपाल राव, Ph.D.
निदेशक
Prof. V. Ramgopal Rao, Ph.D.
F.N.A.E., F.A.Sc., F.N.A.Sc., F.N.A.
Director

I am glad to learn that Dept of IT, I.T.S Ghaziabad has taken an initiative and organizing its 2nd CXO Meet on the theme **"Digital India Mission: Transforming India for Tomorrow"** with dedicated sessions with Industry Leaders to address different dimensions of Digital India program relevant to the society.

The Digital India is an ambitious program initiated by the Govt. of India with an objective to digitally empower the citizens of the country by creating a competent IT enabled infrastructure for effective delivery of services and products.

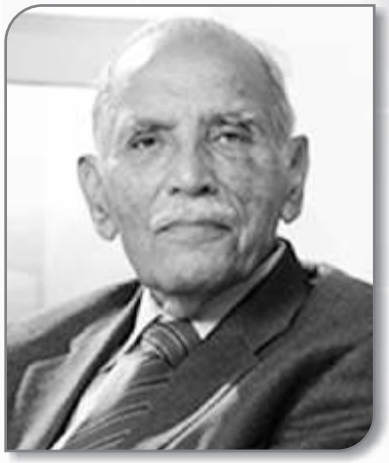
One of the most important aspects for the success of Digital India is creation of awareness about the concept of Digital India Mission, its provisions and how it can benefit the individual stakeholders. Such an awareness will lay down the foundation for a well informed, connected and progressive India.

I appreciate the efforts of organizing team & congratulate I.T.S Ghaziabad and the organizing team of Dept of IT of this CXO Meet. I am confident that this will set a trend for other institutes to follow.

With best wishes & complements,

(V. Ramgopal Rao)

Message



Padma Bhushan (Dr.) F.C. Kohli
Former Dy. Chairman - TCS
Former President - NASSCOM
Founder CEO - TCS

Adoption of Information Technology

India has done well in the export of software all over the world. Last year, India's software development was USD 120 billion in English language. Out of this, USD 105 billion was for export, and the rest for use within the country. This would **indicate that there is very little computerization in India in Indian languages**. There are about 800 million people who are not conversant with English. Further, India has about 22 languages. Rather than viewing these as road blocks, they must be considered as opportunities for introducing computers in Indian languages. Considerable work on Indian language software is being done at CDAC, NCST, IITs, Central University and many others in academia. Therefore, it is well within our capacity to address the matter of computerization in many Indian languages. Incidentally, China's software revenue is same as India **with no exports**.

Information Technology is both software and hardware. We have a **very limited hardware industry.** India assembles 5-7 million PCs a year. Whereas China, which has computerized everything in Mandarin and Cantonese, manufactures over 40 million PCs. In present scenario India needs to:

a) **Upgrade and revamp Micro-electronics education** and introduce **new Nano-electronic** equivalent to what it is at MIT (USA)

b) Study and **upgrade existing electronics manufacturing in the country** and promote and facilitate new ventures.

It is estimated that extensive computerization in India will **create millions of jobs in manufacturing** and other areas. It will lead to better Government, Education, and improvement in every aspect of life in India. It is **estimated that India can achieve business of $ 300 billion in software and hardware in 5 years.**

I appreciate the efforts of organizing team and wish all the best to the organizing team and the management of I.T.S, Ghaziabad for thinking, conceptualizing and organizing this ambitious event at an academic institute.

I wish the event a grand success.

Dr. F.C. Kohli

Message

Shri Manoj Chugh
President (Enterprise Business)
Tech Mahindra

India is becoming a robust domestic data consumption market with digital data consumption expected to increase at twice as fast as the worldwide rate from being around 40,000 petabytes in 2010 to 2.3 million petabytes in 2020. The market is expected to see a strong resurgence of growth-related projects across verticals viz., banking, insurance, telecom and government segment and further with the liberalization of the Information Technology market, digital-commerce and social media, the quantitative impact of Datacenter traffic is apparent. The Indian data center infrastructure market is valued at $2.2 billion and is poised to be the second largest market for data center infrastructure within the Asia/Pacific region by 2020. India can grow to an infrastructure hub attracting $7 Billion or 4.5% of the world's investments by 2020 and there is an urgent need to create appropriate incentives to attract the investments and enable better connectivity, data speed and create more jobs in the country.

Indians will use digital instruments to make payments worth $500 billion by 2020, contributing to 15% of the country's gross domestic product (GDP)

With the liberalization of the Indian economy, the Information Technology and Business Process Management (ITBPM) sector has seen exponential growth in the country-- from a mere 1.2% of the GDP in 1998 to 9.5% in 2015. With strong IT-capable human resources, the country's data processing needs are only going to expand with the growth in digital business and the thrust towards e-governance. India's technology and BPM sector (including hardware) has generated US$ 146 billion in revenue during FY15, growing by 13% over the previous year where the sector earned $118 billion in revenues. This growth has been largely backed by the export of IT-BPM services with industry driving non-linear growth through platforms, products and automation, leading to 1.2 times increase in revenues and employees since 2009. Worldwide IT-BPM spend was USD 2.3 trillion, growing at 4.6% over 2013-2015, and India holds a massive 55% market share. The industry today is India's largest and most diverse private sector employer, with a direct workforce nearing 3.5 million, and effecting over 10 million indirect jobs.

Department of Industrial Policy and Promotion (DIPP), the computer software and hardware sector attracted foreign direct investment (FDI) worth $13,238.58 million between April 2000 and September 2014. According to a recent survey, cloud services in India are expected to be strong across all cloud segments through 2017. In the period between 2013 and 2017, business-process-as-a-service (BPaaS) is anticipated to grow from $63.6 million to $168 million, software-as-a-service (SaaS), from $174 million to $552 million; and infrastructure-as-a-service (IaaS), from $59.2 million to $156.3 million43.

Various research studies reveal that private cloud in India will help save Indian companies up to 50% of their infrastructure costs and will also create more than 1 lakh jobs by 2016-17.

It is my immense pleasure to share my views on Digital India as it is the most in demand happening taking place in IT industry. I'm grateful to the organizing committee of the CXO Meet-2016 & ITS Ghaziabad for holding such a great event.

Manoj Chugh

Dr. ANUPAM GUPT,

Dy. Director General Telecom

सत्यमेव जयते

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TO,

Dr. Sunil kr. Pandey,

Professor & Director(IT),

Institute of Technology & Science,

Ghaziabad-201007

Dear Sir,

MESSAGE

I feel great pleasure to know that Institute of Technology & Science College, Ghaziabad; a great pioneer in imparting quality management& IT education for more than two decades; has taken a lead and much needed initiative in organizing 2nd CXO meet with focal **theme "Digital India Mission: Transforming India for Tomorrow"**. It is a dream project and long term vision of our beloved Prime Minister of India, Hon"ble Shri Narender Modi- **a program to transform India into digital empowered society and knowledge economy.**

It would provide further momentum to cover digital infrastructure as a utility to every citizen, digital empowerment with universal digital literacy to common citizen mandated delivery of various government's services electronically through **"e-governance"**. And would promote inclusive growth that covers electronic services, products, devices, manufacturing hub and generation of employment opportunities.

On this great occasion I convey my sincere greetings and heartfelt warm wishes for grand success of this mega show and would definitely bring another feathers cap in name of this great Institution.

With Warm Regards

Date-8.9.2016

(Dr.Anupam Gupt)

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Message

Dr. M.M. Pant
Chairman - PlanetEdu

I am delighted to learn that the I.T.S is a organizing yet another event where the CXO's of today will address and inspire the CXOs' of tomorrow.

This is even more important now as we enter the 4th Industrial Age and TIFAC has formulated India vision 2035 for its technological journey.

I wish to convey my greetings and best wishes to the Institute, the present business leaders and the leaders of the future.

Dr. M.M. Pant

Message

Shri Arpit Chadha
Vice Chairman
I.T.S - The Education Group

The societies, in modern days, are differentiated mostly on the basis of access of technology & its usage. This has led the formation of two segments one is privileged to have access, usage and benefits of the technology, IT in particular, and other deprived of it. This is what has created a serious issue of digital divide. To take society and thus country as a whole forward, this gap of Digital divide needs to bridged, or at least reduced..

The concept of Digital India is basically a collective effort to connect the diverse rural communities to the internet and provide them free access to basic online services. The 'Digital India' programme aims to transform India into a digitally empowered society and a knowledge economy. It symbolizes the Government of India's vision for connecting and empowering 125 crore citizens; creating unprecedented levels of transparency and accountability in governance; and leveraging technology for quality education, health care, farming, financial inclusion and empowering citizens. Under the 'Digital India' Programme, technology will play a central role to achieve easy, effective and economical governance.

I am confident that this CXO Meet on the theme "Digital India Mission: Transforming India for Tomorrow" shall be an unique event of its nature and shall be a milestone in creating awareness among future technocrats and Managers to understand the vision of Industry Leaders, the direction in which the Digital India Mission is heading to.

I congratulate each member of Department of IT for planning and organizing such an event.

Arpit Chadha

Message

Shri B.K. Arora
Secretary
I.T.S - The Education Group

It has been the endeavor of Digital India Mission to digitally empower the citizens of the country. Digital India comprises of various initiatives under the single program each targeted to prepare India for becoming a knowledge economy and for bringing good governance to citizens through synchronized and coordinated engagement of the entire Government.

The concept of Digital India is very ambitious and can address to core issues if implemented in true spirit as it has been proposed. However, awareness about these initiatives among the masses is a must so that they understand, use and experience their benefits. I understand that success of such initiatives cannot be left upon the Government & implementation agencies but it is responsibility of each of us to take it forward till it reaches to last person of the queue.

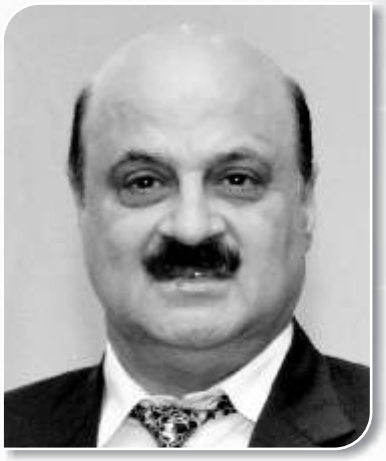
The core competencies of Indian IT Industry and the strengths have attracted significant investments from major countries. All these developments are contributing significantly in ensuring availability, accessibility and affordability of Information Technology tools & ITeS. The vision of Industry leadership, with which the Indian IT Industry is moving ahead, is opening new opportunities for businesses, speedy communication and ease of information flow to keep everyone well informed.

I am confident the vision sharing of Top Industry Leaders, policy-makers and academia shall help the delegates of this CXO Meet to understand the underlying principles of Digital India Concept, their perspective and how Industry is prepared to contribute towards it and thoughts which will help them in taking a long way.

My best wishes to the organizing team for their success in their endeavor.

B.K. Arora

Message



Shri Romy Chopra
Sr. Vice President
NIIT Technologies

I am pleased to be associated with ITS college for the past 2 years as an Industry expert. I have witnessed many initiatives of the college of showcasing the current technologies and industrial trends to the students of the college. It is really commendable how the college keeps the students and the teaching staff abreast of the changing environment.

2nd CXO meet on 17th September is another initiative, which will focus on national agenda of Digital India. We have seen empowerment of both urban and rural India with the power of digital. Millions of farmers are now using smartphones for latest information on weather, Mandi prices, expert advice on crops etc. in their respective geographies in India.

I am sure such initiatives and many more will be discussed in this CXO meeting. I wish ITS college and the organizing committee a big success.

Romy Chopra

Message

Dr. A.K. Puri
Director General
I.T.S, Ghaziabad

I.T.S promotes creation and dissemination of knowledge as part of its commitment to provide excellence to its stakeholders.

CXO Meet at I.T.S will provide an opportunity for exchange of information and ideas on diverse issues and challenges in organizations from top management perspective. We have best of the thought leaders on the panels as speakers to share their wisdom and present their analysis of contemporary world through well recognised and illustrated expertise.

I am sure it will provide thought provoking insights in to the state of industry and technology from present and futuristic perspective.

I welcome the distinguished speakers and participants to this august gathering.

My best wishes.

Dr. A K Puri

Message

Dr. Sunil Kr Pandey
Director (IT)
I.T.S, Ghaziabad

The Indian IT industry has witnessed a rapid growth from the late 90s with regular shifts in paradigm consistently. Computers which were considered to be purely scientific computing machines has now transformed and undergone sea changes - from Mainframe to hand-held devices with better processing & storage capacity, domain specific applications to highly customized applications, specific to generic applications, domain specific to Convergence of various domains (Humanities, Sciences, Medical Sciences, Bio Technology, Physical Sciences and so on) giving way to development of Cross-functional applications, static response machines to Human-Computer Interaction and responsive computing, restricted storage space to Cloud, owning infrastructure to renting services & infrastructure and so on.

According to latest reports, India has established itself as the world's largest sourcing destination for the Information Technology (IT) industry accounting for approximately 67% of the US$ 124-130B market. The IT industry itself employs about 10 million workforces and even more importantly, the IT industry has led the economic transformation of the country and altered the perception of India in the global economy. Social, Mobility, Analytics and Cloud (SMAC) are collectively expected to offer a US$ 1 trillion opportunity. Cloud represents the largest opportunity under SMAC, increasing at a CAGR of approximately 30 per cent to around US$ 650-700 billion by 2020. The social media is the second most lucrative segment for IT firms, offering a US$ 250 billion market opportunity by 2020. The Indian e-commerce segment is US$ 12 billion in size and is witnessing strong growth and thereby offers another attractive avenue for IT companies to develop products and services to cater to the high growth consumer segment.

There is trend that now all the developments are directly or indirectly focused towards finding way & means to reach out to the masses and empowering each individual of society through digitalization and thus empowering society digitally and socially both. The Digital India Mission, as ambitious initiative of Government of India, seems to be aligned to achieve these objectives.

But then all this does not happen without understanding the objectives, benefits, provisions and challenges. It needs a strong and effective campaign to take these details to citizens by the individuals those who foresee the future, craft technology vision and have ability to lead from the front. I am confident that this CXO Meet will play a very important role in creating awareness about the Digital India concept, awareness about its provisions, its long term impact on businesses, society, health, education, governance, media etc.

Dr. Sunil Kr Pandey

Message

Shri Ashok Sharma
Associate Vice President
Amar Ujala

The recent past has witnessed the noticeable transformation in our Society through several periods of dramatic changes, driven by innovations such as transportation systems, communication networks, education and Healthcare etc. Last few decades have experienced technologies that are evolving so rapidly, altering the constraints of space and time, and reshaping the way we communicate, learn and think. These fast changing scenario and advances in, especially in the field of IT and other digital systems are reshaping our ecosystem. The new innovations, applications emerging out of the convergence of different diversified domains with ICT allow us to transmit information quickly and widely, propelling the growth of new urban communities, linking distant places and diverse areas of endeavor in productive new ways, which a decade ago was unimaginable.

With the current digital trends, there is a huge spike in content consumption across various digital media be it Mobile or desktop. It is not very difficult to foresee that we are going through an information revolution era, which is impacting economic, social and technological arenas of our lives. One of the biggest target base is the youth of today, wherein digitally led teaching techniques have been introduced in schools & colleges to give real time understanding of various subjects. The penetration of this revolution is not only restricted to Tier 1 cities but is becoming a widespread phenomena in Tier 2,Tier 3 cities and so on.

I am happy to learn about the Department of IT at I.T.S, Mohan Nagar, Ghaziabad is organizing a focused event CXO Meet with theme **"Digital India Mission: Transforming India for Tomorrow"** of such stature where Top leadership from Industry, Policy Makers, Researchers, renowned Academicians and Media shall come under one roof to discuss & present their perspective and giving a glimpse of direction where country & society is headed towards.

This event is very timely and I sincerely hope that the presentations and following discussions will inspire the community to take up any challenge and make the Digital India concept to a reality very soon.

I wish to congratulate the Organizers for their wonderful efforts to make this event happen. All the best!

Ashok Sharma

Message

Prof. San Murugesan, Ph.D
Director, BRITE Professional Services
Adjunct Professor, Western Sydney University
Sydney, Australia
http://tinyurl.com/sanbio

I'm delighted that the 2nd CXO-Meet, organized by Institute of Technology and Science (ITS), Ghaziabad, will take place on 17th September 2016 and deliberate on a timely theme, **"Digital India Mission-Transforming India for Tomorrow."** I'm also pleased that, unlike many traditional conferences, several industry leaders will share their views on and ideas to realise the digital India mission. I congratulate ITS for organising this meet and speakers and audience from business and industry for taking part in this event.

Innovations in computer science and engineering, information technology and communications have been phenomenal. Not only that new technologies and standards were developed, they were put into use in novel ways, in India and abroad, disrupting and benefiting businesses, individuals and society.

The digital disruption is, however, not over-digital transformation of India as we know it has only just begun. So what's next, and how can we further transform India embracing digital technologies. The opportunities digital technologies present will continue to outweigh associated risks and limitations. The key to transforming India is to recognize and harness their full potential to our advantage. Of course, as we examine what the new digitally-transformed India could -and should - be, we must recognize that the digital technologies are a means to an end rather than the end itself.

Senior executives and IT professionals working in industry must conceive, design, develop, and deploy creative IT-enabled solutions to real problems facing India. They must also uphold their professional, social, and ethical responsibilities and work collaboratively with other professionals and colleagues in other sectors on applications of relevance and value to society. They must also address issues such as cyber threats, scalability and resilience, privacy concerns, and increased complexity satisfactorily.

I'm confident that you will make effective use of the opportunities this meet present to you to identify key areas that need transformation and implement strategies and solutions to transform India in several areas for better.

I convey my best wishes for an enjoyable and productive meet.

Prof. San Murugesan

Message

Shri Rajiv Garg
Executive Director
Corporate Digital Transformation
Bharat Heavy Electricals Ltd.

Traditionally, developments in Information Technology was being driven by the requirements of Enterprise, however with the beginning of consumerization in 2004 has resulted in paradigm shift in IT development and the new product development & innovation is being driven by the consumers. Convergence of SMAC i.e. Social, Mobility, Cloud & Analytics is the outcome of this trend. The of Integration of SMAC with physical products through Internet of Things (IoT) will result in smart products. These smart products with the convergence of Information Technology with Operational Technology, offer exponential growth opportunities for businesses. The convergence of these technologies has opened up now possibilities for creation of new businesses and business models which are agile, responsive & innovative. This is the Digital Transformation or more correctly it is Business transformation. Now, IT is not merely a Business enabler or a source of competitive advantage but is Business. Some the so called brick and mortar companies are now Digital companies and over the time all the companies have to transform into Digital companies else they cease to exist. The organizations that exploit this opportunity will be the leaders of the industry. Thus, in the near future, 'digital' and 'business' will be nearly synonymous for the industry. One integrated system can manage all steps, from conception to execution. Thus, the Digitalization is the Key to Increased Productivity, Efficiency and Flexibility.

I look forward for this CXO meet with its theme on "Digital India Mission - Transforming India for Tomorrow" will go a long way in formulating and standardising the strategy to be opted and adopted that will impact on socio -Economic framework for our country aligning the vision of our Prime minister. The value of a digitization strategy lies in enabling the core competencies and aligning them with our unique core capabilities to create competitive differentiation. I wish a great success to this CXO Meet.

Rajiv Garg

Message

Ms. Karnika Seth
Cyberlaw expert & Advocate, Supreme court of India
Managing Partner, Seth Associates.

It is indeed heartening to know that ITS is organising the 2nd CXO Summit to discuss the leadership in thought and action in the IT Industry and its changing contours in the digital age. India is facing a paradigm shift, akin to a revolution emanating from the Digital India mission, and this event is certainly a significant contribution to spreading awareness, instilling innovation and entrepreneurship! I congratulate with my sincere appreciation the entire faculty and team of ITS Ghaziabad.

It is my pleasure and privilege to speak at the event and interact with distinguished guests, faculty and students on this very pertinent subject, leadership initiatives in IT Industry. Such interactions not only give experts an opportunity to share their knowledge and views on the subject but also learn through interaction with industry leaders and participating delegates and students.

I wish ITS success in all its educational endeavors!

Sincerely,

Karnika Seth

Message

Shri Sathya Venkatraman
Consulting Partner -GTS
IBM Asia Pacific, Chennai

It is matter of great pleasure and privilege for me to write this message for the Souvenir of 2nd CXO Meet being held on 17.09.2016 at I.T.S, Mohan Nagar, Ghaziabad. Organizing such unique event provide platform to academicians, researchers & industry participants for sharing creative, novel ideas and to listen thoughts of industry leaders of the corporate.

I have been a part of the first CEO Meet and really impressed for such initiatives of the Institute which increases learning capabilities of an individual.

I wish all the best for grand success of this event.

With Best Wishes

Sathya Venkatraman

Message

Shri S. Sridhar
Vice President - Sales, HCL Insys Pte Ltd
Singapore

It gives me immense pleasure to learn that I.T.S, Ghaziabad, affiliated to Dr. A.P.J. Abdul Kalam University, Lucknow, India, is organizing its 2nd CXO Meet on **"Digital India Mission - Transforming India for Tomorrow"** on 17th September, 2016. This is an important event and would help in bridging and the gaps between Academia and Industry expectations.

I appreciate the efforts of the Institute of Technology & Science (I.T.S), Mohan Nagar, Ghaziabad for such a nice initiative and contribute at such a large scale.

I wish all the very best to the Organizing Team and Management of the Institute.

With best wishes,

S. Sridhar

Message

Dr. M.N. Hoda
National Chairman, Division - I,
Computer Society of India (CSI)
Director, BVICAM, New Delhi

I am happy to hear about that 2nd CXO Meet organized by Institute of Technology & Science, Ghaziabad, India. The theme of event **"Digital India Mission - Transforming India for Tomorrow"** is very pertinent and a must to know for everyone. This is a good initiative and will go a long way with the participants. This will also help in highlighting leading technology vision along with future directions of Indian IT industry.

I am really delighted after seeing growth of the Institute in all dimensions which is very important aspect of today's scenario. I wish to congratulate the organizers for their wonderful efforts to make this event happen. All the best.

Best Wishes

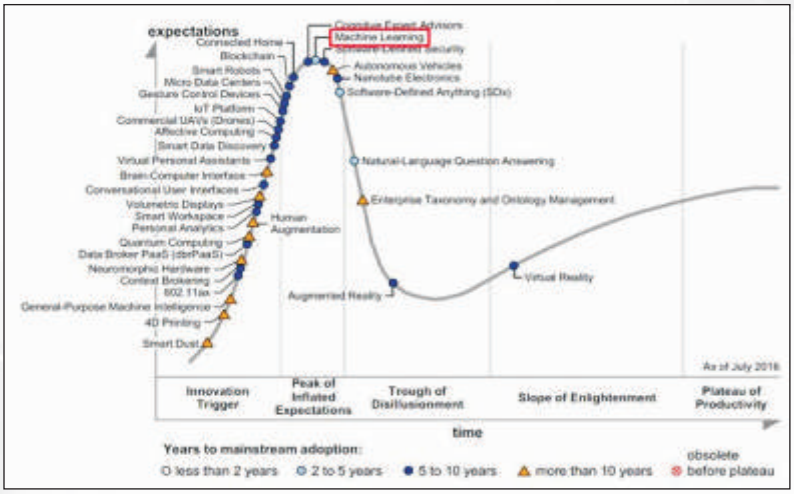
Dr. M.N. Hoda

The Case for Machine Learning in Business

Matthew Mayo
Deputy Editor of KDnuggets
Canada

Achievements in machine learning are coming increasingly quickly over the past several months. You are likely familiar with the recent accomplishments associated with machine learning, especially those of so-called deep learning, or the use of multi-layered artificial neural networks. These specific achievements include the high profile AlphaGo and Deep Dream, along with numerous others in the realms of computer vision and natural language processing. Interestingly, a number of these recent mainstream successes are primarily attributable to Google in one form or another.

Machine learning is closely related to, and often confused with, artificial intelligence (AI). When we think of AI, we generally think of robotics, intelligent agents, and perhaps even absurd doomsday scenarios courtesy of Hollywood. We don't, generally, think of business cases involving general AI, or even leveraging more narrow automated learning to solve specific business problems. But that's exactly what machine learning in the enterprise can accomplish, and exactly why you should be considering it today.



Source: Gartner (August 2016)

Gartner's 2016 Hype Cycle1 shows that machine learning is now in the "peak of inflated expectations," having made its way out of the "trough of disillusionment," which can be interpreted as meaning that its usefulness is now understood, even if harnessing this is not (yet).

The following explores 3 distinct machine learning avenues you can pursue right now to help develop and achieve your business goals.

Deep Learning for Business

Convolutional and recurrent neural networks have played important roles in recent state-of-the-art computer vision and Natural Language Processing (NLP) advances. These often sound like esoteric research goals, but these technologies have legitimate business applications, and can have profound affects on bottom lines, and can spawn entire industries.

Computer vision is making automated driving cars a reality. This is a huge industry set to explode in the next few years, and one which will generate billions of dollars in revenue. Computer vision is also responsible for the development of specialized applications such as eye, head, and gait tracking. These have practical applications in health and safety fields, and, aside from increasing the quality of life for individuals, their development and implementation will also drive an entirely new industry. Open source deep learning frameworks such as Google's TensorFlow2, when matched with the required hardware, can be used to build and train models which are able to perform these types of tasks.

NLP is even more universally-applicable to a variety of business types. Natural Language Understanding (NLU) involves computers actually understanding natural language and free form conversation and text. Such systems can help to make sense of vast amounts of text that an organization may have acquired, be it from social media interactions, customer emails, or any other body of text you may have available. TensorFlow, when paired with currently available pre-trained models such as Google's SyntaxNet3, provide powerful out-of-the-box implementations for organizations to easily begin taking advantage of these previously out of reach technologies.

From here, all sorts of additional processing on text can be performed. Sentiment analysis is a related technology which automatically gauges the attitude or emotion associated with written text, the results of which can be actionable. Think of identifying products which garner overwhelmingly negative reviews on social media, and being able to make improvements based on this data.

Social media analytics is also closely-related, and indeed overlapping, and can extend additional technologies into the realm of analyzing social data. In today's technological economy, what business would not be able to make use of techniques such as these?

Automated Machine Learning

If, as Sebastian Raschka4 has described it, computer programming is about automation, and machine learning is "all about automating automation," then automated machine learning is "the automation of automating automation." Follow me, here: programming relieves us by managing rote tasks; machine learning allows computers to learn how to best perform these rote tasks; automated machine learning allows for computers to learn how to optimize the outcome of learning and to perform these rote actions.

This is a very powerful idea; while we previously have had to worry about tuning parameters and hyperparameters, automated machine learning systems can learn the best way to tune these for optimal outcomes by a number of different possible methods.

This sounds very theoretical, but it is most assuredly not. While previously organizations had to worry about having teams of highly knowledgeable data scientists and similar analytics specialists at their disposal to be able to even tinker with machine learning or data mining, such automated systems can alleviate much of this required know-how by sheer automation. Of course, interpretations of results still requires statistical savvy, and more complex problems are not for the unskilled, regardless of current technological assistance.

However, the important takeaway is this: with some basic technical understanding and some time investment, organizations can employ one of several open source systems like TPOT5 or Auto-

sklearn6 to dabble in automated machine learning for specific problems and see what insights, if any, can be gleaned. If deeper analytics and statistical modeling are desired, especially anything that would be used for steering business practices, certainly employing qualified individuals to helm such automated systems is necessary; however, automated machine learning is able to lower the barrier of entry, and remove the potential uneasiness surrounding the prospect of, machine learning in the enterprise.

There has not been any time in the past where machine learning has been as accessible to business.

Application Programming Interfaces (APIs)

Like so much of contemporary technology, machine learning is no longer solely an in-house operation. Pairing locally- or cloud-hosted data with available machine learning Application Programming Interfaces (APIs) is becoming an attractive manner for which to pursue routine analytics within the organization. A wide variety of machine learning, data science, and cognitive computing tasks can be accomplished using such APIs.

Whether looking to make predictions based on "conventional" data, or to extract text from audio or video and perform subsequent analysis, there are numerous options now for such an approach.

Hewlett-Packard Enterprise (HPE) offer its Haven OnDemand7 machine learning APIs, which are made up of more than 60 such APIs for processing, connecting, and analyzing data in a variety of ways, including text extraction8 and a variety of other data science tasks9. Microsoft Azure Cognitive Services10 is another option, offering a number of APIs for accomplishing similar tasks as well.

For more on the open API economy and how it has boosted analytics, see this article11 by Kaushik Pal of TechAlpine.

Conclusion

With everything taking place in machine learning these days, and given its ease of access and low barrier of entry, there is little reason not to be employing these technologies in your business right now. I encourage everyone to search out the best way in which to take advantage of machine learning, and wish you the best in your pursuits to do so.

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How to Predictably Fill Your Sales Funnel Using Cold Email Prospecting

Patty Laushman
Founder, Revenue Catapult
Denerver Area, Colarado

Senior business executives process hundreds of emails every day, many of them salespeople asking for a piece of the executive's most precious possession - his or her time. With this kind of competition for an executive's attention, many people believe cold email prospecting has no place in the sales toolbox. The reality is that if it's done well, it can be the most powerful tool for predictably filling a B2B company's sales funnel. I know because I've successfully implemented a system based on cold email prospecting for companies in a wide variety of fields.

For one global software company that targeted banks, over about 20 months of part-time effort, I personally dropped more than US$30 million in potential sales opportunities into the top of their sales funnel using cold email prospecting. These efforts resulted in the company acquiring its largest client, one of the world's largest banks, and many other bank clients from the United States, United Kingdom and Australia. Even though I haven't worked with them in eight months, they report that sales opportunities I identified are still closing.

For another client, the system was so effective, a junior-level sales development representative (SDR) was able to schedule one introductory sales meeting with consumer product manufacturing companies for every two hours worked and half of these meetings turned into viable sales opportunities. For yet another client targeting U.S. hospitals, an industry with traditionally low email open rates, the system was still successful at predictably scheduling meetings with hospital executives.

How Does It Work?

The basic idea behind a cold email prospecting system is that a prospect receives a series of emails from an individual at the organization with the intent of arousing the prospect's curiosity and getting them to commit to a phone call with one of the company's sales executives. This seems like a simple idea, but the process only works if you are following the formula below, which enables the email to stand out among all the other emails the prospect receives:

right person + right message + right time = sales opportunity

The formula assumes that your company solves a real pain point for a specific type ofperson, known as a persona. The most common mistake companies make is trying to be all things to all people, which dilutes the message. In order to be successful and create a scalable system, the company's focus needs to be narrow in order to have a compelling message. Consider the examples below.

No: We help small- to mid-sized companies put a strategic marketing plan in place

Yes: We help independent optometrists acquire new patients through a comprehensive strategic marketing plan

Notice in the first example how the company's message tries to be all things to all people and the second example focuses in on a niche (optometry practices), a persona (independent optometrists) and has a results-focused message (acquire new patients). Optometrists who are struggling to make their practice profitable after years of schooling are more likely to wonder how your company has helped others like them and be willing to talk with you, whereas the first message doesn't have the same impact.

Timing is also a factor, just like everything in sales. Ideally your company solves a pain point that a sizable marketplace is trying to solve at the same time. In the first example at the beginning of this article, my client who was targeting banks could solve a pain point that nearly every bank in the world was trying to solve at that moment - how to acquire new customers digitally rather than having them visit a bank branch.

Once we figured out the messaging, the whole system became powerfully scalable. The software company could effectively communicate in a short email that:1) they could solve a problem the bank was actively trying to solve, 2) they could do it better than the bank could do it themselves, and 3) they had done it very successfully for other banks who were just like them. Many bank decision-makers were willing to give up 30 minutes of their time to find out more.

What About Cold Calling?

Cold calling is also part of the system, but it's important to put it in proper perspective. As part of the system, I coach SDR's on how to focus their time on the activities most likely to turn into an introductory sales call. Calling someone on the phone is a relatively expensive activity from a time perspective, even if the SDR has the prospect's phone number, and many times they do not. Think about how many emails can be sent in the time it takes to look up a phone number, dial it, wait for an answer and typically end up leaving a voicemail. If the SDR has to go through the company's switchboard to call the prospect, that takes even more time and reduces the likelihood of the executive answering the phone.

The ideal scenario is to use an email automation platform that will enable the SDR to focus on calling the prospects most engaged with the cold emails as evidenced by how many times the email is opened. For example, my preferred email automation platform, Outreach.io, can be configured to create a manual task for the SDR to call a prospect if an email sent is opened at least a certain number of times. That way the SDR is able to call only people with whom the message has resonated in some way rather than calling people for whom the message was meaningless.

Another factor to consider is the industry being targeted and how receptive they are to cold emails. I've found great variability between industries. In some industries the decision-makers conduct the vast majority of their business over email and almost no phone calls are required to get meetings scheduled with them. In other industries decision-makers seem to spend far less time on their email and require a voicemail or twoin addition to the cold emails to engage them enough to agree to a phone call.

A final factor to think about when deciding which prospects to spend an SDR's precious phone time on is how important the account is to the organization strategically. If there is little evidence the prospects at an account are engaged with the message, but you are confident you can make a big difference for them and there is a very high value in acquiring the account as a client, this is a good reason to spend extra time cold calling executives at that firm.

Wash, Rinse, Repeat

Once the SDR is scheduling meetings, the next critical piece in developing a scalable, predictable system is listening carefully to prospects on the intro calls for how they talk about their own pain points, how they phrase the solutions to these pain points and what they are most interested in. You may start out thinking your clients will be interested in solving one pain point only to find they care more about another problem you can solve for them.

This information should be fed back into the system and used to A/B test new cold email messages and see how well they perform compared to the existing messages. Over time, the SDR team should be able to very effectively communicate how the company solves a specific pain point for a specific persona and maximize response rates through an iterative process of testing, measuring and improving everything they do.

The initial messaging will typically start out fairly broad. Then feedback from prospects can be used to fine-tuned for individual personas. As the system matures, a chief transformation officer should receive a slightly different message than a chief technology officer. Some personas will be more responsive than others and more effort can be applied to the most responsive personas. Some personas will be abandoned completely either because they just don't respond or they are not decision-makers and the sales team is not able to drive the sale process beyond the introductory call.

A final critical element to optimizing the system is measuring everything, not just email open rates and response rates to cold emails. It's important to track other metrics like what percentage of responses are positive responses, hours worked per introductory meeting scheduled, what percentage of introductory meetings become viable sales opportunities, what percentage of these opportunities close within six months or 12 months and which lists of prospects perform best so you can get more lists just like them. Constant experimentation with an eye towards improving all the relevant metrics will result in a powerful lead generation machine that produces a very predictable flow of sales opportunities.

Conclusion

Cold email prospecting is a viable option for building a B2B lead generation machine. In order to be successful, the system needs to narrowly target the right people with the right message at the right time and not try to capture a broad array of people with a broad message. If structured correctly, the system enables testing and fine-tuning resulting in constant improvements to the results achieved. The system is highly measurable and can produce a steady, predictable stream of new sales opportunities to fill the company's sales funnel.

Rakesh Malik
Founder & MD
Combine Ways

Digital India

Digital India - A program to transform India into digital empowered society and knowledge economy. This is a follow up to the key decisions taken on the design of the programme on Digital India Programme and to sensitize all ministries to this vast programme touching every corner of the government.

This programme has been envisaged by Department of Electronics and Information Technology (DeitY).

The vision of Digital India aims to transform the country into a digitally empowered society and knowledge economy. The programme will be implemented in phases from the current year till 2018. The Digital India is transformational in nature and would ensure that Government services are available to citizens electronically. It would also bring in public accountability through mandated delivery of government's services electronically, a Unique ID and e-Pramaan based on authentic and standard based interoperable and integrated government applications and data basis.

The source of funding for most of the e-Governance projects at present is through budgetary provisions of respective Ministries/ Departments in the Central or State governments. Requirements of funds for individual project(s) for Digital India will be worked out by respective Nodal Ministries/ Departments.

The vision areas of Digital India:

I Infrastructure as Utility to Every Citizen:

(i) Easy access to a Common Service Centre within their locality.

(ii) Shareable private space on a public Cloud.

(iii) Safe and secure Cyber-space in the country.

II Governance and Services on Demand:

(i) Seamlessly integrated across departments or jurisdictions to provide easy and a single window access to all persons.

(ii) Government services available in real time from online and mobile platforms.

(iii) All citizen entitlements to be available on the Cloud to ensure easy access.

(iv) Government services digitally transformed for improving Ease of Doing Business.

(v) Making financial transactions above a threshold, electronic and cashless.

(vi) Leveraging GIS for decision support systems and development.

III Digital Empowerment of Citizens:

(i) Universal digital literacy.

(ii) All digital resources universally accessible.

(iii) All Government documents/ certificates to be available on the Cloud.

(iv) Availability of digital resources / services in Indian languages.

(v) Collaborative digital platforms for participative governance.

(vi) Portability of all entitlements for individuals through the Cloud.

Scope of Digital India:

The overall scope of this programme is:

(i) to prepare India for a knowledge future.

(ii) on being transformative that is to realize IT (Indian Talent) + IT (Information Technology) = IT (India Tomorrow)

(iii) making technology central to enabling change.

(iv) on being an Umbrella Programme - covering many departments.

(v) The Digital India Programme will pull together many existing schemes which would be restructured and re-focused and implemented in a synchronized manner

Digital India aims to provide the much needed thrust to the nine pillars of growth areas, namely

1. Broadband Highways,
2. Universal Access to Mobile Connectivity,
3. Public Internet Access Programme,
4. e-Governance: Reforming Government through Technology,
5. e-Kranti - Electronic Delivery of Services,
6. Information for All,
7. Electronics Manufacturing,
8. IT for Jobs
9. Early Harvest Programmes.

Approach and Methodology:

i Ministries / Departments / States would fully leverage the Common and Support ICT Infrastructure established by the Govt of India.

ii The existing/ ongoing e-Governance initiatives would be revamped to align them with the principles of Digital India.

iii States would be given flexibility to identify for inclusion additional state-specific projects, which are relevant to their socio-economic needs.

iv e-Governance would be promoted through a centralised initiative to the extent necessary, to ensure citizen centric service orientation.

v Successes would be identified and their replication promoted proactively.

vi Public Private Partnerships would be preferred wherever feasible.

vii Adoption of Unique ID would be promoted to facilitate identification, authentication and delivery of benefits.

viii Restructuring of NIC would be undertaken to strengthen the IT support to all government departments at the Centre and State levels.

ix The positions of Chief Information Officers (CIO) would be created in at least 10 key ministries so that various e-Governance projects could be designed, developed and implemented faster.

x DeitY would create necessary senior positions within the department for managing the programme.

xi Central Ministries/Departments and State Governments would have the overall responsibility for implementation of various

Program Management Structure :

A programme management structure would be established for monitoring implementation. Key components of the management structure would consist of the Cabinet Committee on Economic Affairs (CCEA) for according approval to projects, a Monitoring Committee headed by the Prime Minister, a Digital India Advisory Group chaired by the Minister of Communications and IT, an Apex Committee chaired by the Cabinet Secretary and the Expenditure Finance Committee (EFC) / Committee on Non Plan Expenditure (CNE).

Background:

Even though India is known as a powerhouse of software, the availability of electronic government services to citizens is still comparatively low. The National e-Governance Plan approved in 2006 has made a steady progress through Mission Mode Projects and Core ICT Infrastructure, but greater thrust is required to ensure effective progress in electronics manufacturing and e-Governance in the country.

The Digital India vision provides the intensified impetus for further momentum and progress for this initiative and this would promote inclusive growth that covers electronic services, products, devices, manufacturing and job opportunities. India in the 21st Century must strive to meet the aspirations of its citizens where government and its services reach the doorsteps of citizens and contribute towards a long-lasting positive impact. The Digital India Programme aims to transform India into a digitally empowered society and knowledge economy by leveraging IT as a growth engine of new India.

What is Digital India?

- Digital India is a Programme to prepare India for a knowledge future.
- The focus is on being transformative - to realize IT + IT = IT
- The focus is on making technology central to enabling change.
- It is an Umbrella Programme - covering many departments.
- It weaves together a large number of ideas and thoughts into a single, comprehensive vision so that each of them is seen as part of a larger goal.
- Each individual element stands on its own. But is also part of the larger picture.
- It is coordinated by DeitY, implemented by the entire government.
- The weaving together makes the Mission transformative in totality

The Programme:

- Pulls together many existing schemes.
- These schemes will be restructured and re-focused.
- They will be implemented in a synchronized manner.
- Many elements are only process improvements with minimal cost.
- The common branding of programmes as Digital India highlights their transformative impact.

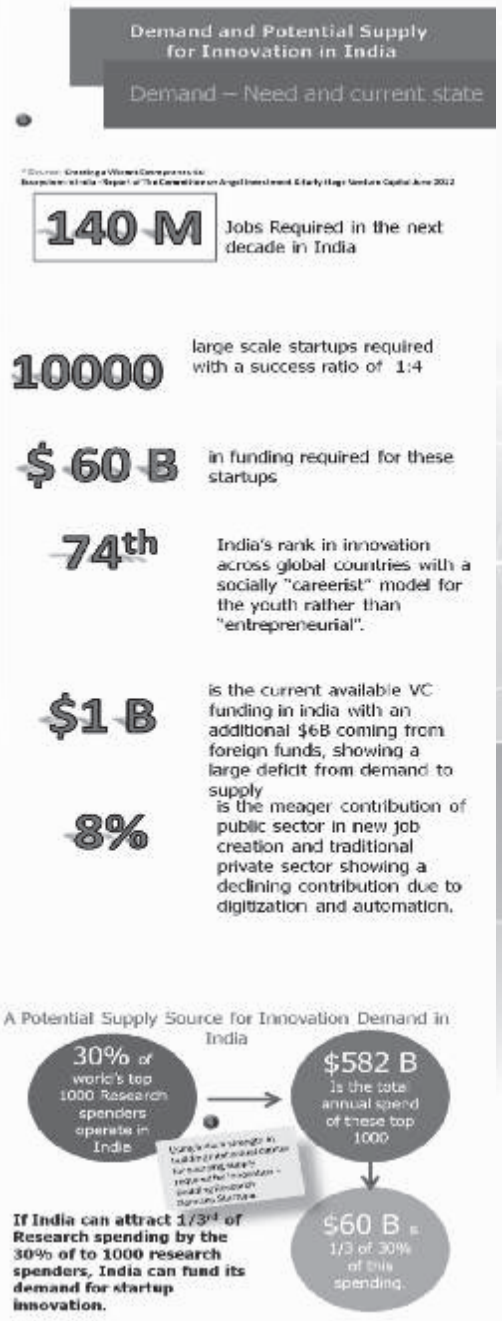
Vision of Digital India is Centered on 3 Key Areas

1. Digital Infrastructure as a Utility to Every Citizen
2. Governance & Services on Demand
3. Digital Empowerment of Citizens

Reimagining Indian IT Industry- 10 K Googles from India

Pavan Malladi
CIO - Dhiraagu Telecom, Maldivees

India missed the industrial revolution and had to incur an absorptive capacity loss and therefore missed out on building competence on industrial production, infrastructure. However India jumped from Farming and Resource based economy to a Skill based economy quickly in the 90's via the technology space which had a net positive economic effect on the economy via setup of reasonable infrastructure, healthcare, standard of living besides many other things leading to a different sort of economic evolution. An evolution that is a skill utilizing rather than going from resource utilizing to industrial efficiency as purists might imagine in traditional economic sense. Re-imagining India now, with a dominant young demographic requiring 140 M jobs to be created in the next decade, requiring 10000 large-scale startups with a 1:4 success ratio which amounts about $60B in funding requirements, India certainly needs to take the next step as a Knowledge and Innovation economy using the knowledge position as a key strength where it has begun the evolution and move into innovation. However this challenge needs a "Leap Frog" if you compare a $60 B demand for start-up funding to the supply India has which is $1B in funding for startups inside the country from VCs with another $6 B coming from foreign sources. In addition the demand for 140 M jobs in a decade cannot be met by a meagre 8% contribution from public sector the largest employer a large deficit to stares India in its face today. (Figures from planning commission report listed in references)



So what does India have? And what can it use to take a leap of faith from an economy that is skill utilizing to a knowledge based innovation economy, while still being valuable to the world?

Looking at the problem slightly differently we may conclude that the actual challenge is that the Indian economy has a deficient absorptive capacity to utilize the capacity to offer by

virtue of our STEM educated population. Doing what we do today in terms of offering this capacity at a price attractive to other economies but not locally will probably not be a sustainable solution. However the same problem could also be an opportunity in terms of the fact that Indian companies going global now, and other countries with a lack of STEM educated capacity will pay for innovation in virtually equal likeliness due to the multiplier effect of innovation which provide "Leap Frog" type jumps to economic growth world over. Again it seems that we have been blessed with yet another opportunity to grow our economy and this time into the highest level of economic existence which is driven by world economic growth and only India can do that.

To quantify the solution to the $60 B funding problem here is the equation. The world's top research spenders spend $582 B in total. 30% of these already operate in India albeit for different reasons. If India can capture 1/3 of this funding towards research the funding requirement has the potential to be solved (30% of $582 B ~ $180 B; 1/3 of this ~ $60 B). (Figures from Zinnov report listed in references).The next step would be to make the ratio of success which is 1:4 and that would require a system. A system that directs the capacity of knowledge from the young educated demographic with a deep sense of insecurity towards start-ups and pressure from society to earn at a young age towards well-funded startups emerging from trusted corporate governance. The answer potentially could be "Research Service Innovation Centers" where customers will use these centers to convert their "inventions" in fundamental research to business applications via use of research services provided. The system provides a faster mechanism to convert fundamental research into application as well as provide for protection of intellectual property via accelerated and focused patent mechanisms. The government has a huge role to play in this controlled system, as India will need to provide a strongly administered distributed local system with local administration, and global market perspective would be required.

A possible model is explained in a series of action statements to be performed by stakeholders, highlighting the benefits. As a small example of this the Kerala Govt has already setup the startupvillage (www.startupvillage.com) partially providing some features below already albeit not with this big objective vision.

1) Establish Public & Private Partnership model for Technology & Business Incubators.

Promoters/stakeholders should involve R&D Government agencies (RGA), Government of India (GOI), Providers of Hard Infrastructure (HI) (ex: SeZ spaces) and Common Services and Mentors from Established Indian Companies/Educators/Universities (EI)."Fresh graduates from colleges or in process of graduating as part of mandatory internships for qualification", "R&D Global companies operating already out of India as consumers of the output generated".

Stakeholder Roles and Benefits:

a) RGA: Provide the research methodology and mentality to these institutions to industrialize the process of research. **Benefits: Extension of research and availability of work and resources to make academic work more relevant.

b) GOI: Provide ease with administration, good governance and access to incubated startup farm space, provide central patenting legal help which is focused to generate patents.**Benefits: generation of employment and meeting targets of building startup funding required in India in a controlled manner.

c) HI: Provide common hard infrastructure such as real estate (capital costs), and machinery for research, for early stage ideas for fixed periods and timesharing across the startup

base.**Benefits: generating income out of the large SeZ infrastructure solely dependent on economic growth.

d) EI: Provide common support services such as high-level consulting advice, on a no fee basis from an Indian tax and regulatory perspective, litigation services to streamline use of intellectual property from such centers and mentorship for successful startup companies.**Benefit: Generating high revenue per resource ratio and first rights on Intellectual property and acquisition investments. Ability to build innovation outside of established and low agility corporate systems based on "Depreciation Capitalism".

2) Build Partnerships with WW top 1000 research spenders already operating in India as an extended lab for their R&D operations:

Stakeholder Roles and Benefits:

a) R& D Global Players: Provide technology infrastructure, funding for Research (exclusive from current captive centers) and Research problem statements to be solved within fixed time by the incubated center. **Benefits: getting access to competent resources built for R&D purpose in a large scale for global innovation at optimal costs and evangelizing custom technology built by these companies in larger applications across the globe. Test on a larger sample sizes within India.

3) Establish a new STEM capacity network among Young India.

Stakeholder Roles and Benefits:

a) Colleges and Schools: Provide connect between Research requirement and education among colleges and schools from which students are taken as interns during summer and then employed via merit tracking at these incubation centers.

Use of Social Networking Tools is highly recommended for outreach, to connect the spirit of entrepreneurship and the relevant information on new R&D work is passed on from innovation centers to colleges and from colleges to schools. **Benefits: Early access to cutting edge technology and infrastructure for innovating into newly formed careers, job Security provided by common center for research innovation allowing for failures and higher risk propensity and generate social impact via instilling the entrepreneurial spirit leading to further possible startup Companies.

A strong belief that such a system would work in solving probably the most important challenges in fostering "Innovation Capitalism" comes from pure qualitative and quantitative proof demonstrated in this article that the solution exists well within the reach of India's core strength which is "India's Knowledge People" and Local Innovation on a system to change them from Careerist to Innovationist capacity. The next set of large scale innovations will be from India with more capacity than the world has ever imagined producing "10K Google's from India".

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Digital India Mission:

No longer an initiative by the government, but evolved into a revolution, a movement

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The Digital India is an ambitious program initiated by Govt. of India with an objective to digitally empower the citizens of the country by creating a competent IT enabled infrastructure and delivery of services and product effectively & efficiently. While this is an important initiative and have potential to transform the society, success of such initiatives require proper ground work including laying down appropriate infrastructure, a mechanism to apprise and make aware the targeted segments of society, ensuring timely, accurate and successful delivery of services to make sure that users have a next time use experiences as a measure for trust and confidence building. It is difficult to measure how much we are prepared with this but one thing for sure that this is an ambitious initiative and if implemented in true spirit it has potential to transform the processes which are need of hour.

The vision of Digital India programme aims at inclusive growth in areas of electronic services, products, manufacturing and job opportunities etc. To achieve this with the aim to make all citizens digitally literate and bring internet and e-governance to all sections of the society and focus on three key vision: Infrastructure as a Utility to Every Citizen, Governance and Services on Demand and Digital Empowerment of Citizens, the focus should be on being transformative to realize:

IT (Indian Talent) + IT (Information Technology) = IT (India Tomorrow)

There have been positive signs from the Industry and leading organizations like Tata, Reliance, Wipro, Birla, Bharti, Vedanta and many more have come forward to support this initiative with open hands and they have announced encouraging support, as mentioned in Table below.

S.No.	Company	Amount to be invested	Purpose
1	Govt. of India	1,00,000 Crore	to transform the country into a digitally empowered knowledge economy
2.	TCS	To hire 60,000	Professionals to implement DIP
3	Reliance Jio	Rs. 2,50,000 Crore	Infocomm

4	Reliance Group	Rs. 10,000 Crore	To create 05 fully operational Cloud Xchange points that "can help government departments access 240 times the amount of compute power currently available in government data centres, and over 6 times the high-speed storage currently available in India.
5.	Bharti Enterprises	$16 Billion	as part of the Digital India campaign and will start manufacturing in India to reduce the import burden
6	Vedanta	Rs. 4,000/- Crore	to expand fibre and cable manufacturing capacity
7	Bilra Group	$2 Billion	for network rollout & enhancements, broadband implementation and Wi-Fi deployment.
8	Idea Cellular	$7 Billion	

And many more in the list……..….

In spite of all above good signs we feel that some of the challenges which needs to be understood and addressed include, as they may badly affect the actual implementation and success of such good initiatives include:

1. India, as a nation, has done well in the export of software all over the world. In recent years, India's software development was USD 120 billion in English language. Out of this, USD 105 billion was for export, and the rest for use within the country. This itself presents a serious issue that merely software worth USD 05 billion were used in the country. It clearly shows that the focus till recent past has not been to address the issue of writing Software in local languages and it itself creates lots of potential & opportunity. This would indicate that there is very little computerization in India in Indian languages. There are about 800 million people who are not conversant with English. Further, India has about 22 languages. Rather than viewing these as road blocks, they must be considered as opportunities for introducing computers in Indian languages. Considerable work on Indian language software is being done at CDAC, NCST, IITs, Central University and many others in academia. Therefore, it is well within our capacity to address the matter of computerization in many Indian languages. However, it surprisingly true, if we compare ourselves with China, the China's software revenue is same as India with no exports.

2. Dr. F.C. Kohli in his remark rightly mentioned that IT in its own is a combination of Hardware & software both but the state of affair as far as Hardware manufacturing is concerned, is very less. It is evident from the data that we, in India assembles 5-7 million PCs a year whereas China, which has computerized everything in Mandarin and Cantonese, manufactures over 40 million PCs. In present scenario India needs to strengthened on this front to reduce the dependency on USA & European countries to remain unaffected from any Industrial turmoil in their countries.

3. Poor Electricity & Energy challenges

4. Considering the Digital India initiatives and Make in India campaigns, two very important initiatives of Government has potential to change the entire landscape of businesses. In fact it is estimated that in view of heavy computerization and IT upgrades in India - particularly in Government Departments & Public Sector organizations at mass scale will definitely create millions of jobs in manufacturing and other areas. If implemented appropriately at every level, it will lead to a transparent, speedy process for good governance, Education, Health etc and shall improve the quality of life of common man by touching every aspect of human life. It is estimated that India can achieve business of $ 300 billion in software and hardware in 5 years.

Among all these the most important issue is of creating awareness about the concept of Digital India Mission, its provisions and how it can benefit each individual is of utmost importance and if it can be done, it will lay down the foundation for a well informed, connected and progressive India, which will be prosperous.

However, to realize these benefits participation of each and every one is very important and to ensure this a mass campaign for creating awareness in the masses, particularly in rural areas, villages and small towns is very important. There are instances when people have all basic infrastructure including device, connectivity and proper bandwidth but they do not use it except to be on social media, listening music or some other non-productive usage. In many of these cases either they are not aware of the services available or they refrain themselves as they do not have confidence or trust whether the access would be safe. This needs to be addressed.. At the same time such initiatives needs to address various issues & challenges to ensure the availability and accessibility of services on demand. This involves a competent infrastructure, seamless Internet connectivity with appropriate bandwidth, security mechanism to counter any malicious transaction and the trust on the system.

This initiative really have potential to help in growth and development in country, especially in the rural areas, by creating a well connected, well informed and up-to-date society and will help in connecting rural regions and remote villages with high-speed internet services. Citizens of digital India may improve their knowledge and skill level after getting covered under the umbrella of internet. It is an ambitious project and we wish this succeeds as it is must to take forward our nation at a different level. To sum-up Digital India is no longer an initiative by the government, it has evolved into a revolution, a movement.

Digital India Mission : Transforming India for Tomorrow

Vijay Gunti
Industry expert Digital Enterprise Services
- SAP, Smart Grid, IoT, Big Data, Analytics,
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The digital India program is to transform India into a digitally empowered society and a knowledge economy. It was envisaged by Govt of india under the leadership of Prime Minister Shri Narendra Modi.

The program symbolizes the Govt of India vision for connecting and empowering all the citizens, creating unprecedented levels of transparency and Accountability in governance especially leveraging technology across various departments for quality education, health care, farming, financials and empowering citizens.

The scope of the program is to bring about a transformative revolution, that is to realize: 'IT (Indian Talent) + IT (Information technology) = IT(India Tomorrow), to restructure, revamp and re-implement existing services and schemes in a synchronized manner, to fuel an umbrella programme that covers multiple government departments and ministries and to provide a common platform to all the services provided by each for easy distribution, to fuel the progress of the nine pillars as envisioned under the programme.

The main aim of Digital India program is to have a effective and economical governance through technology.

The three key areas identified are

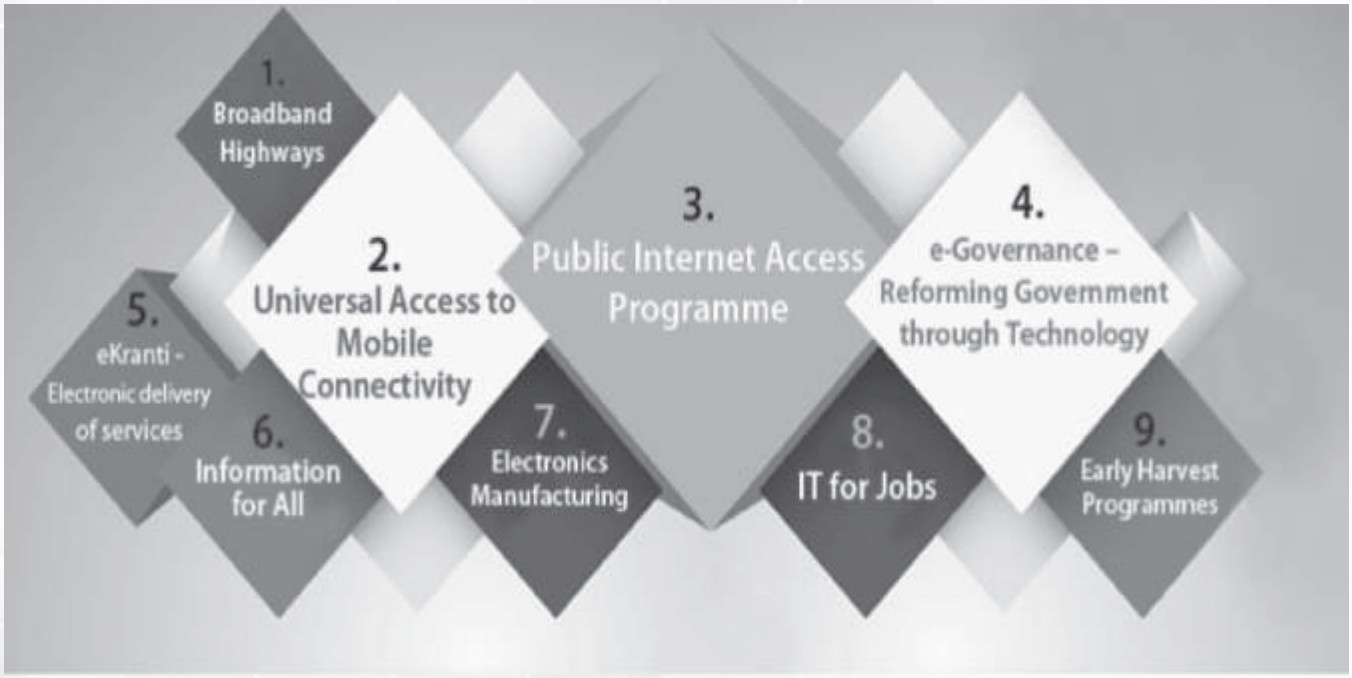
- Digital Infrastructure
- Digital services and Governance
- Digital Empowerment of Citizens.

Digital Services : Digital Empowerment of Citizens

- **Seamlessly integrated** across departments or jurisdictions
- Services **available in real time** from online &mobile platform
- **All citizen entitlements** to be available **on the cloud**

- Services digitally transformed for improving **Ease of Doing Business**
- Making **financial transactions electronic & cashless**
- Leveraging GIS for **decision support systems & development**

Nine Pillars for Digital India



Broadband Highways Providing broadband services to all sections of society. The broadband highways are divided into three subcomponents viz. Broadband for All Rural, Broadband for All Urban and National Information Infrastructure.

Universal Access to Mobile Connectivity This initiative focuses on network penetration by covering villages across the country

Public Internet Access Programme: Common Service Centres (CSCs) and Post Offices in the remote pockets to be strengthened as a part of the campaign, providing viable, multi-functional end-points for delivery of government and business services

e-Governance: Reforming Government through Technology - This includes providing simplified forms, online repositories for important certificates and documents, Integration of services and platforms, automated government workflow and public grievance redressal and etc

e-Kranti - Electronic Delivery of Services e-Krantiaims at bringing an overall revolution(Kranti) by providing e-education (which also includes free WiFi for schools and colleges), e-Healthcare, online consultation, Online cash, technology for farmers, e-courts, e-police, e-prosecution and so on.

Information for All This point refers to online hosting of information and documents.

Electronics Manufacturing : building semi-conductor fabrication plants; manufacturing set-top boxes, VSATs, mobiles, consumer & medical electronics, smart energy meters, smart cards, micro-ATMs and similar products

IT for Jobs The aim is to train people from smaller towns & villages so that they can work for IT sector, IT services and become part of IT workforces

Early Harvest Programmes: Programmes/services which include IT Platform for Messages, Biometric attendance, Wi-Fi in All Universities, School Books to be eBooks, Public WiFi hotspots, SMS based weather information, disaster alerts, National Portal for Lost & Found children

To Conclude Digital India aims to encompass all those facilities and services and utilize our country's available resources, especially manpower.. Given right attention and ensuring none of its aspects are unseen, the nation can be truly digitized and the vision of Digital India, to convert the nation into a digitally empowered society and knowledge community

City ScaleUp: from "Wow!" to "Now!"

Renato de Castro
Smart City Expert
Padova Area, Italy

The challenges of enabling large scale solutions in Smart Cities

During the first semester of 2016 I have been exploriong the concept of ***"City SmartUp"***. I have explored four preeminent trends, described as tools and illustrated with some global cases: *(#1) Rethinking the Smart City Pitch; (#2) Smart City Concept Design; (#3) "Appsation" Reconnecting with Citizens and (#4) Attracting and Promoting ICT Pilot Projects.* The main argument is that you can leapfrog the traditional phases of the development process. It works perfectly for newbies, cities and companies. It is now faster and much cheaper to get there, it is almost like playing lego when it comes to start pilot projects. The city hires an experienced and empowered CDO, Chief or City Digital Officer to quick off the show. And it starts really quickly, a "sampling group of citizens" get connected to the city hall; a fantastic solution for smart lighting is tested in a street or even in a district; car sharing is working well along "some" charging stations; smart meters; smart sensors; smart, smart, smart and successful pilot cases! Officials are glad, private partners are excited and citizens are anxious for the next round. This was the ***"WOW!" momentum***. Congrats, your city gets its first badge - ***Junior*Smart City**. It is absolutely a good start, but definitely not enough. It is time to Scale it Up, **"NOW!".**

This article will address the challenges that follow after piloting a Smart City project - how to Scale-it-Up. If you have done your homework well, things will be easier. At this stage it is not only clear to you but to all stakeholders that your Smart City project is in your city's DNA. Probably the successful pilot projects that your city managed were due to this initial orientation. Remember, your citizens don't want a new city but a smarter city. Second point, if for the pilot projects your city got to attract partners to 'sponsor" and execute it, now it is time to understand how successful the projects were also for them. If it is true, they will be the first one to support you to scale. In the last article I listed 4 tools to SmartUp, so I will start from tool #5 to illustrate the ScaleUp. I will try to illustrate with at least 2 successful cases each one of the next tools, so probably it will be one article for each one of them, following a minimum logical order of implementation.

Tool # 5

Enabling 24x7 full connection in your city.

We all agree that the core of a smart city project is not anymore technology but people. Having a citizen-oriented project is already half way to the success. But we should also agree that the main driver to smart city projects is ICT. It is important to reinforce that the old concept IT (Information

Technology) was upgraded with the addition of communication. In this case, communication is related to the ability of not only one-way flow of information but creating an interaction between the two sides : one that wants to inform and the other that is using and reacting to the information.And the tendency is to go even deeper in the use of technology when we reach the IoT (Internet of things) era. Information and communication technology is being used to connect people to people, people to machines and machines to machines. Daily use things like home appliances, bikes and Cars are being connected. Public Lights are becoming smart and connected; car parking; water meters; you can name it. That said, the first step to scale any smart city project is to enable complete, ubiquitous and full time internet connection in your city. No shadows, not interruptions, no crashes. Internet is becoming as important as a reliable and stable utility supply (power, water or gas) to a city. It is (or was until now) very costly because it implies infrastructure investment. Doesn't matter if we are talking about satellite, optical fiber nets or mobile 3, 4 or future 5Gs, all known technologies up to now were based on complex and expensive hardware and urban infrastructure. So, if you have not realized about it before, this will be the first big headache in scaling-up. But we are here to discuss about solutions not problems, so allow me to detail two successful cases I visited personally this year:

Case 1 - New York smart growth

First one is called LinkNYC in New York. I had the opportunity to visit the project personally last February 2016 and I got really impressed. The main idea behind the project is to replace all the 7.500 to 10.000 old public phones booths with modern wifi kiosks, a new technology developed by Civiq from Massachusetts. According to The Wall Street Journal the project is being managed by a consortium named CityBridge, a joint venture between three main companies: the smartphone chip maker Qualcomm Inc., networking company CIVIQ Smartscapes and Intersection, which is connected to Google parent company Alphabet Inc. CityBridge says it is investing more than $200 million in the project. The kiosks have basically 3 core functions:

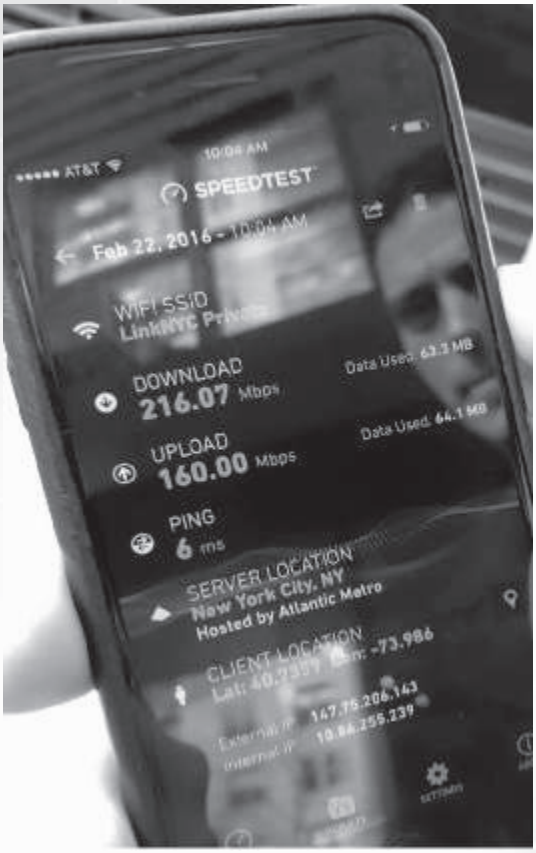
1. **Enable free ultrafast wifi** connection for pedestrians. Until February, the faster real public free connection I had experienced was in Seoul in 2015, reaching 25 Mbps and believe me, I was really happy! In Italy I pay for 20 Mbps (the maximum offered in my town) and the local operator is obliged by law to assure me at least 10% - 2 Mbps - It is not a joke! So Korea was offering me 11 times faster for free! Paradise, I thought! Back to New York, when I managed the test, 1 week after the launch of service my mobile almost collapsed, 216 Mbps - almost 10 times faster than Korea and amazing 100 times faster than my home connection.

Pic 1- Wifi Kiosk used in New York to replace the of phone booths.

2. **Free national calls**: As the main idea was to replace the public phones, you can also make phone calls. There is a built in tablet that can be used to call as the old phones, but here the good news, you can call for free any American land number!

3. **City Info**: The tablet also allows internet navigation. From consulting any city service or to get tourism information again, all for free.

The business model: As the old phones, kiosks are being installed in every single corner of Manhattan, less than 50 meters of each other. As state of the arts pieces, each kiosk costs around $30.000 American dollars, so how to afford it? New York is a rich city so they have budget enough to permit such luxury commodity right? Wrong again. The project is not costing a penny to the city hall, or even better, to the tax payers, it is a PPP based in public concession. The business model is based in advertisement. Each kiosk is equipped with a screen, that works as a billboard. Indeed, by licensing the service, New York city become a business partner in the project and will receive royalties from the revenue. The business plan forecasts that in 10 years time the city will get paid over half billion dollars. So, summarizing : Smart City project in large scale + no public investment + new revenue for the city. Sounds like music for any mayor, don't you agree?



Pic 2- ultra speed for free in New York.

Now you are probably thinking: well, it was possible to do it in New York, because it is New York! Besides being the 6th largest metropolis in the planet, whit a metropolitan population, considering Newark, of 19.43 million people, what is fantastic to the media business model, the whole "basic" infrastructure such as optical fibers were already there, so it was a" perfect storm" "to attract the project! Yes, now you are right! According to U.S. Department of Transportation, the costs per meters on all new projects in the U.S from over the past 15 years have ranged from $4,00 to $49,00 American dollars and even more expensive in place like California that can reach over 62 American dollars per meter. So we are talking about some millions of dollars to get level zero of the connectivity were talking about.

Case 2 - The magic box - a "plug-and-play" Internet connection on a national scale

Good news here is our second case. I was really glad to visit a a company called Athonet located just some few kilometers far from my home. They were not only nominated but won the Global Mobile Awards 2016 in the category of - Best Solution for Growing Smaller or Independent Networks issued by the World Mobile Congress in Barcelona. It definitely caught the whole industry's attention. Athonet's CEO is also named as one of WIRED magazine's 's 17 Global Influencers expanding human

possibility through technology. Interestingly, Athonet has successfully enabled customers worldwide to deploy local internet networks, simply, cost-effectively and in record time. Basically, they can enable a complete full internet network in a vast area with an initial cost less than 5% of a normal investment budget because they have replaced all that expensive hardware I talked about before with simple software running on standard IT servers.

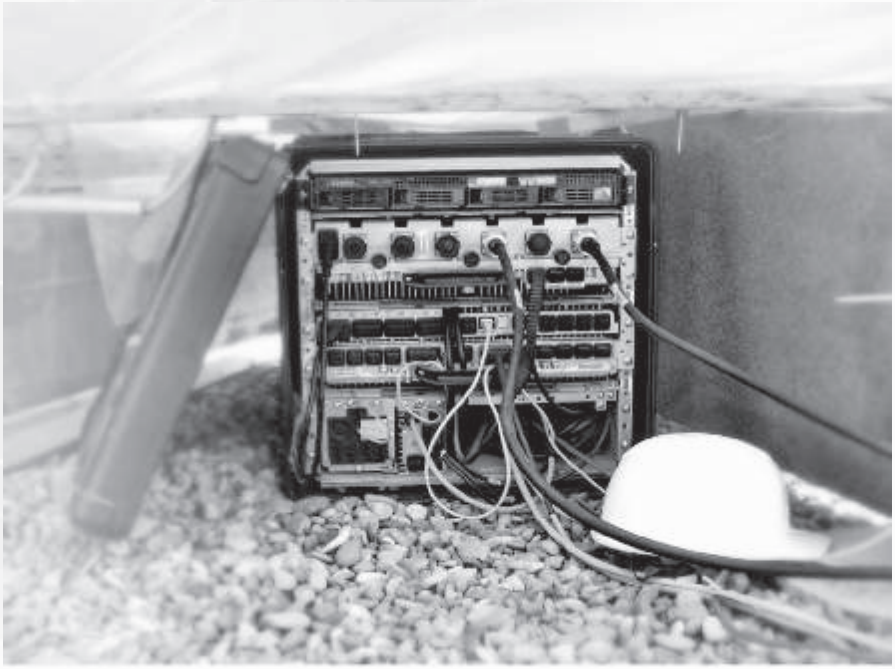
Among the projects they have implemented, there two in particular I would like to highlight. The first one was a humanitarian service developed during the last big earthquake in Italy in 2012. Within just a few hours they deployed a complete local wireless internet network in the disaster area, 35 kilometers north of Bologna. It allowed the Italian Civil protection teams to run operations using HD live-streaming videos of the disaster area to control centers, communicating and coordinating the activities of emergency personnel and helping save lives. More than 2km radius of LTE coverage was immediately available for emergency response workers. 24 LTE wireless cameras were instantly deployed for video surveillance of key areas and a command and control center was settled. Athonet was awarded a medal by the president of the Republic of Italy for this project. They are now applying this to provide instant ubiquitous coverage for smart cities.

A second remarkable project, using the same technology, was managed in 2015. Access, a mobile operator in Malawi, Africa, approached Athonet with the challenge to implement a 4G/LTE network, the first in the country, in a matter of weeks to enable them (Access) to launch the latest generation broadband wireless service. Malawi is among the smallest countries in Africa and it is among the

world's least-developed nations with around 85% of the population living in rural areas. The network had to be scalable nationwide, very cost-efficient, IT-friendly and simple to integrate with Access' existing infrastructure including its CDMA network. In 2011, there were 3.952 million mobiles and almost 1 million Internet users, very few numbers for a country with more than 17 million inhabitants. We can easily figure out how important can be an affordable infrastructure project for a developing country.

Without going through all the complexity behind technical terms as Home Subscriber Server (HSS), Home Location Register (HLR), Voice-over-LTE (IMS for VoLTE), Voice-over-WiFi (WiFi calling) and LTE Broadcast (eMBMS) and make it simple to understand, imagine a wifi router that you install at home in a plug-and-play connect. Athonet plugs-and-plays on a a city or national scale..

The business model: the big competitive advantage of the system is the low initial costs for the government or company that need to establish city-wide internet networks. It removes the huge barrier to deployment of city-wide networks that comes from the cost of conventional technologies. We come down from 7 or 8 zeros figures to few thousands of dollars. It is a pay-for-use model, where app companies, developers and finally the end-user will pay the bill in a long term perspective. Just to remind you, at the end of the day it will be "us" anyway to pay the bill by taxes, consumption or both. if your city or country still doesn't have a full internet infrastructure developed, they will add it to a list of concerns that includes public health, education and security. If we consider the traditional expensive infrastructure such as optical fibers, probably internet will not the first priority. So, new solutions in this field are really welcome.



Pic 4- Athonet "plug-and-play" device used after the earthquake of 2013 in Italy.

The new concept of Smart Cities is definitely based in smart citizens and smart technical solutions. We need to go out of the box to achieve our goals. Be focused, don't lose track and mainly, keep it simple! It is time to **ScaleUp!**

Book Keeper App

Most Simplified Accounting Solution

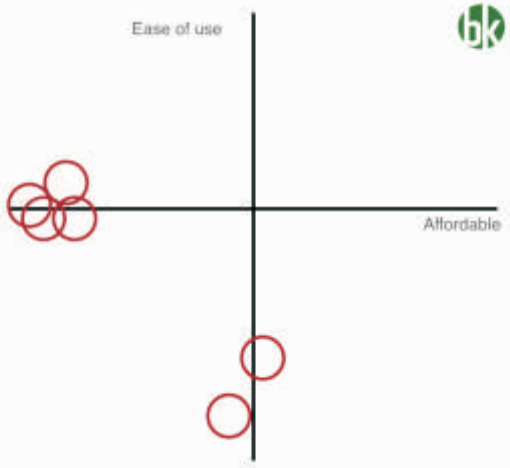
Rohit Kumar Birla
Co-Founder, Book Keeper App

We just made one small accounting app and pushed it on Play Store, Android was newly launched mobile platform in 2012-13, and we received tonnes of responses from users. People were actually looking for something like that. We were receiving hundreds of emails everyday with suggestions for improvements, some complaints, and so many thank you messages for this app.

We were literally wondering, is it real? and then we started digging about accounting systems across world and there were already hundreds of them available over internet. Then we searched, what do users/businessmen really need and result was shocking!!!

There are hundreds of accounting systems but most of them fails to fulfil simple promises. Half of them need internet to operate but in India, you know the condition of internet. Few of them are so complex, you really need to go to school again to learn how to operate a software. Being a businessmen, you don't even have time to breath, forget about going for some course. Another option is to hire some accounting officer to do all your accounting stuff. Really? I am small businessman, I can't afford to hire another manager to do just accounting part. Instead, I will manage on paper. Huh. and Most important point, pricing. Most of these softwares are too costly, so either users will download pirated copy or will manage business of paper.

So, if I draw 1-1 business graph, it looks something like this:



Well, we don't wanna do either one of these things. What we wanna do was to make a leapfrog product that is affordable for everyone, and super-easy to use. This is what Book Keeper is. "Most Simplified Accounting Solution".

We started with features one by one and started brainstorming and came up with most simplified solutions, we have removed all the complex terms and made it super-easy to use, so that any person can operate it. "Designed for non-accountants".

Over a period of 3 years and continuous development, Book Keeper has got hundreds of features, here are few of our favourites:

- Professional Invoicing
- Inventory Management
- Barcode Scanning
- Receipt/Payments/Estimates/Orders
- 25+ Comprehensive Reports
- Role Based Access
- Sync Across Devices
- Cross Platform Compatible
- Import/Export From Excel Format

Book Keeper App is not just helping people to manage their business, it is changing the way, people manage their business. Most of our users are working on mobile when they travel and as soon as they reach their office, they switch to system. In background, Book Keeper synced their data seamlessly.

We have integrated some of the most advanced features to take benefit from latest technologies. Here are some of the examples:

- Share via WhatsApp: Who doesn't have WhatsApp now a days, so, instead of printing invoice or sending over email, you can share copy of invoice via WhatsApp. Super-fast. isn't it?
- Work online/offline: Book Keeper can sync across devices, if you are online. Worried about your data, no problem, you can work offline too.
- Sync via Dropbox: Yes, most of the users are worried about their confidential data. Book Keeper allows sync without storing anything on our servers.
- Printing: Book Keeper uses core printing options by native OS, so you can print via Google Cloud Print or Air Print.

Let's talk about technologies supporting Book Keeper App:

- Java for Android

- Objective C for iOS
- .NET for Windows platform
- SQL for connecting to backend
- JSON for syncing across devices
- XML for connecting with other softwares
- CSV/Excel for Export/Import
- HTML5/PDF for Printing purpose

Users across the world. It feels so great to serve users across 30+ countries and supporting "Make In India". Let's categories type of businesses, Book Keeper can support:

- Retailers
- Traders
- Wholesalers
- Manufacturers

Future of Book Keeper App: There are still hundreds of features we are going to add in coming months like Warehousing, Payroll etc. With Book Keeper, we are focussing more on users and making sure, we are developing something meaningful for them.

Digital India Mission : Challenges and Opportunities

Sushovon Saha
E-governance Specialist
Consultant for Smart Cities

Our country or "the land of billions" is the seventh largest in terms of area and the largest democracy in the world. It is generally referred to as by two names, "India" which is as per our constitution and "Bharat" which is a translation. Although in both cases, the reference is to the same country, there is a stark difference between the two names. While India is a notional entity being the better of the two and has had the legacy of being colonially exploited by the British during the period of the Raj, its counterpart "Bharat" is still rural, relatively backward and predominantly agricultural country. It is in a sense still subjected to colonial exploitation even decades after the end of the British Raj. While "India is on the path to become an economic superpower in the near future, its counterpart "Bharat" still is struggling with issues like poverty and corruption. While "India" is scaling new heights in technologies and making its presence felt in the globalized world, "Bharat" is still struggling with the lowest literacy levels as compared to the other countries of the world. While "India" is making rapid strides towards providing the most advanced healthcare facilities in the world, "Bharat" is still struggling to save millions of its expecting mothers from dying.

And all of these is because of digital divide. Simply put, **'digital divide'** is defined as the gap between persons who have access to ICT and the tools to use it effectively and those who do not, resulting in imbalances in access to technology as well as skills needed to compete in modern day's highly competitive environment. And like so many other services, ICT penetration fails to reach the most vulnerable and disadvantaged across Bharat, alienating them further. Digital Inclusion along with financial inclusion is the need of hour. Increased Internet penetration across the country -- in both urban and rural India - is an imperative. Such a move will only help the second fastest growing economy in the world connect to its vast and varied population, bringing even those in the hinterlands to the mainstream. The importance of bridging this digital divide in order to achieve and inclusive growth for India is also well understood by the present Modi government under which the ambitious Digital India Initiative has been launched with an initial corpus of Rs.1.13 lakh crores and slated for completion by 2019. It basically aims to connect all gram panchayats by broadband internet, promote e-governance and transform India into a connected knowledge economy. It is one of Modi's government top priority project and has three core components that include creation of digital infrastructure, delivering services digitally and creation of digital literacy. The project shall be monitored and controlled by Digital India Advisory group and chaired by the ministry of Communications and Information Technology. Within a short span of 5 years the government aims to make 1 crore people digitally literate.

The road to India's development goes through its villages. There is no way a nation can grow by ignoring two-thirds of its population.

The existing infrastructure in the country results in an unequal flow of communication between people. The constantly evolving ICT landscape has not been able to include the vast rural majority -- many people are yet to have access to telephones let alone Internet. Rural tele-density is abysmally low, at just 8 per cent, and a JuxtConsult report pegs India's rural Internet usage at just 5 million.However, with effective deployment of network, millions of people could be of brought into education-fold, helping create jobs for an estimated 21 million rural citizens over the next five years.High-speed Internet connectivity could make rural BPOs a feasible option, providing employment to the local population. This will also discourage the current migration trends of the rural populace to cities in search of work, reduce their dependency on agriculture, and contribute towards inclusive growth.

With this background, **Digital India** project was launched by the Prime Minister Narendra Modi on 1st of July in 2015. It aims to give India a digital push for good governance and more jobs. The PM of India has tried his best towards digitizing campaign for India in order to bridge the gap between government services and people. Digitization was the need to be implemented in India for bright future and grow more than any other developed country. Following are the identified **benefits of Digital India campaign:**

- It makes possible the implementation of digital locker system which in turn reduces paper work by minimizing the usage of physical documents as well as enabling e-sharing through registered repositories.
- It is an effective online platform which may engage people in governance through various approaches like "Discuss, Do and Disseminate".
- It ensures the achievement of various online goals set by the government.
- It makes possible for people to submit their documents and certificates online anywhere which reduces physical work.
- Through e-Sign framework citizens may digitally sign their documents online.
- It may ease the important health care services through e-Hospital system such as online registration, taking doctor appointments, fee payment, online diagnostic tests, blood check-up, etc.
- It provides benefits to the beneficiaries through National Scholarship Portal by allowing submission of application, verification process, sanction and then disbursal.
- It is a big platform which facilitates an efficient delivery of government or private services all over the country to its citizens.
- Bharat Net program (a high-speed digital highway) will connect almost 250,000 gram panchayats of country.

- There is a plan of outsourcing policy also to help in the digital India initiative.
- For better management of online services on mobile such as voice, data, multimedia, etc, BSNL's Next Generation Network will replace 30-year old telephone exchange.
- National Centre for Flexible Electronics will help in the promotion of flexible electronics.
- Large scale deployment of Wi-Fi hotspots has been planned by the BSNL all across the country.
- There is a Broadband Highways in order to handle all the connectivity related issues.
- Open access of broadband highways in all the cities, towns and villages will make possible the availability of world-class services on the click of mouse.

There is much to be done, from the creation of smart cities to the comprehensive availability of broadband, from connectivity in education, healthcare, agriculture, and manufacturing to a National Digital Literacy Mission (NDLM).

The challenges ahead are last mile connectivity and electrification to every village along with digital literacy of our rural mass. Availability of scalable massive data servers to cater to the gigantic population and efficient and optimized Apps would be the need of the hour. The opportunities are endless, with such a heavy load on network on real time even todays available technology resources will be pushed to limits for evolution of next generation technologies.

What is important to understand is that like any elephant, Digital India has many parts and each has to be addressed to make the big vision a reality.

Future of SIM

Manish Sharma
Technology Lead
Safran Identity & Security

1. Introduction

As we move forward into the future; a new horizon of requirements for new products are needed in every field of technology and so is our urge to develop new **wirelessly connected devices** to solve our daily needs. Such expansions are also defined and attained in smartcard devices so that they also become useful for new plethora of devices that are waiting to invade our lives in the near future.

Such devices were already there in our lives in the form of **Embedded Devices** or devices used in our day to day life. But since we are living in a wireless age there is a demand to development their wireless counterparts. Now with their extension to the wireless space, a need to connect them to the internet arises which could be utilized by different embodiments of different solutions for connectivity. Now this continuous connectivity can be provided with the help of telecom infrastructure.

We know that SIM plays an important role to authorize a device to connect to a mobile network provided by MN0's (Mobile Network Operators). But there are following challenges by going with a conventional SIM for a device:-

1. It is a hindrance for device engineers to provide space for a SIM in today's continuously shrinking packaging of mobile devices (or says some other embedded device).

2. There is a cost involved for distribution and changing the SIM. Like in future if subscriber wants to switch to some other MNO, there will be a need to procure new SIM and installing it into the device.

3. There are also factors from some physical conditions that include heating, vibration and humidity that the connecting device and card holders are exposed to.

Now with above problems in mind device engineers provided a surface mount technique to add SIM permanently on the device as a raw configurable chip with additional capabilities to provision a profile related to the MNO at a later stage of lifetime of a device. Now this surface mounted device is known as **Embedded SIM or embedded UICC.**

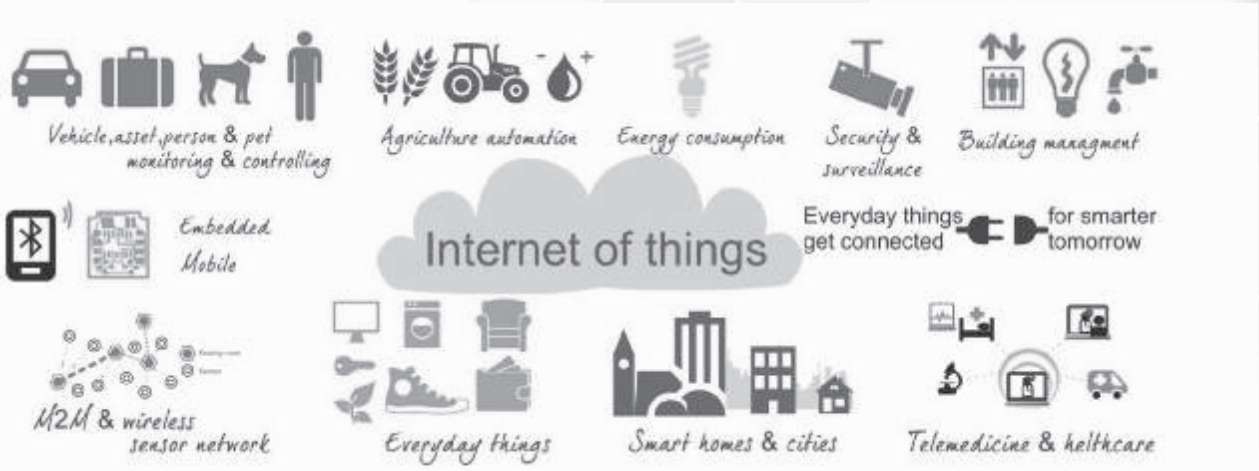
It requires data, files and applications present onto an embedded SIM (or eUICC), which when enabled will make eUICC to access mobile network. All the former requirements are collectively called profile of eUICC and to enable it is called provisioning of profile. Profile provisioning of SIM makes the way to utilize Embedded SIM in Automation industry, M2M devices, IOT (Internet of things) for wireless connectivity.

2. Flexibility of Choosing Operator

In eUICC, it will be easy to maintain any operator whenever a user wants. Any profile can be configured through "over the air" installation, thus the management of operator profile becomes easier. Apart from this, it involves no operational or physical cost in changing operator because there is no physical SIM involved in the complete process and the profiles are switched on embedded SIM which are fixed in the starting of the lifetime of the product.

3. Embedded SIM in "Internet of Things"

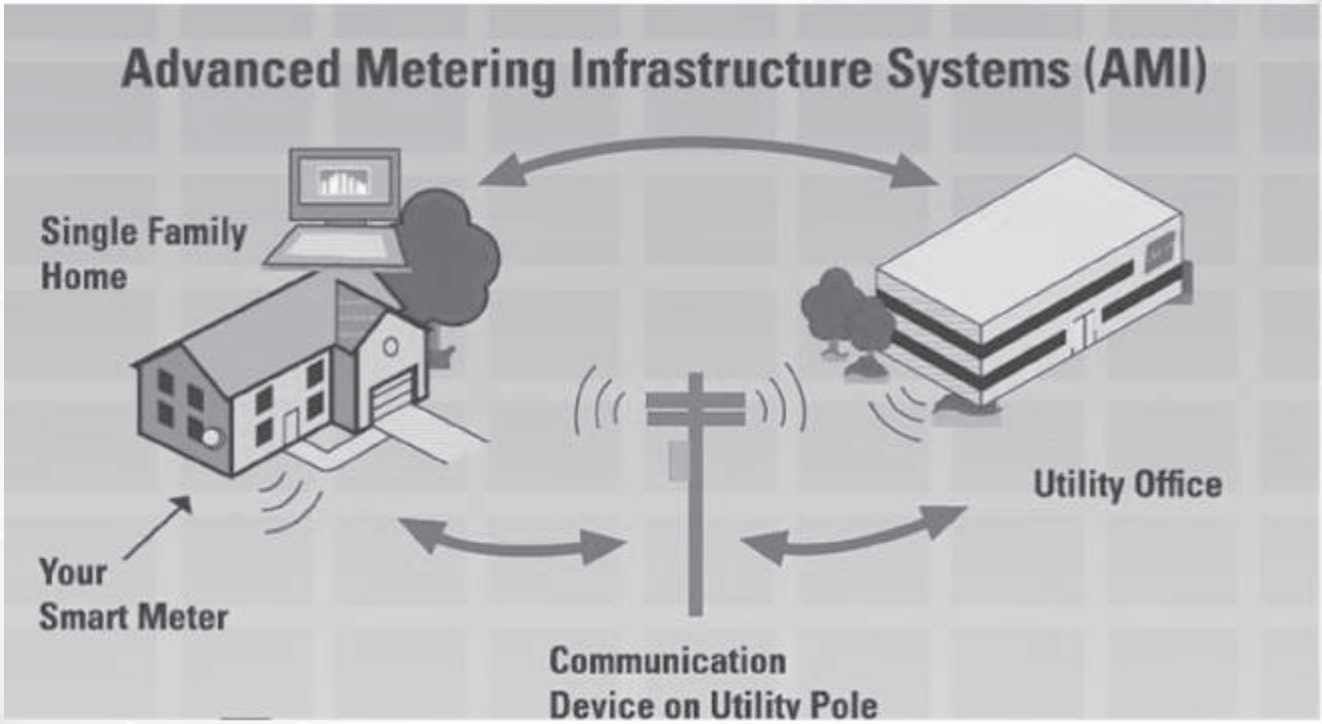
Internet of things (IOT) is not a technology but an idea of **seamlessly connected devices under the umbrella of internet**. It is a concept in which every possible device around us which can be our car, home appliances or media and health systems are connected through internet and communicates



through each other on network protocols. Embedded SIM's are providing them an opportunity to use "telecom network bandwidth" for flawless and uninterrupted connectivity. Also, with latest surface mount dual in-line packaging of embedded SIM directly on the circuit of these devices provide them a compact and easy to use packaging.

M2M (Machine to Machine) though considered as part of internet of things, it is different in the sense that this term is use both for wired and wireless devices. With continuous increase of M2M applications or new business models and usage scenarios, the SIM in its communication modules give rise to the following problem. A physical SIM tied the user (or its device) to a single network. Thus M2M device provider has to change the SIM physically, if they wish to switch to a different network provider. Consider this scenario on a large scale if the SIM cards across the city in Smart Meters or Security Cameras need to change? It will be a difficult task.

Consider following Smart Meter example of eUICC in daily routine M2M device.

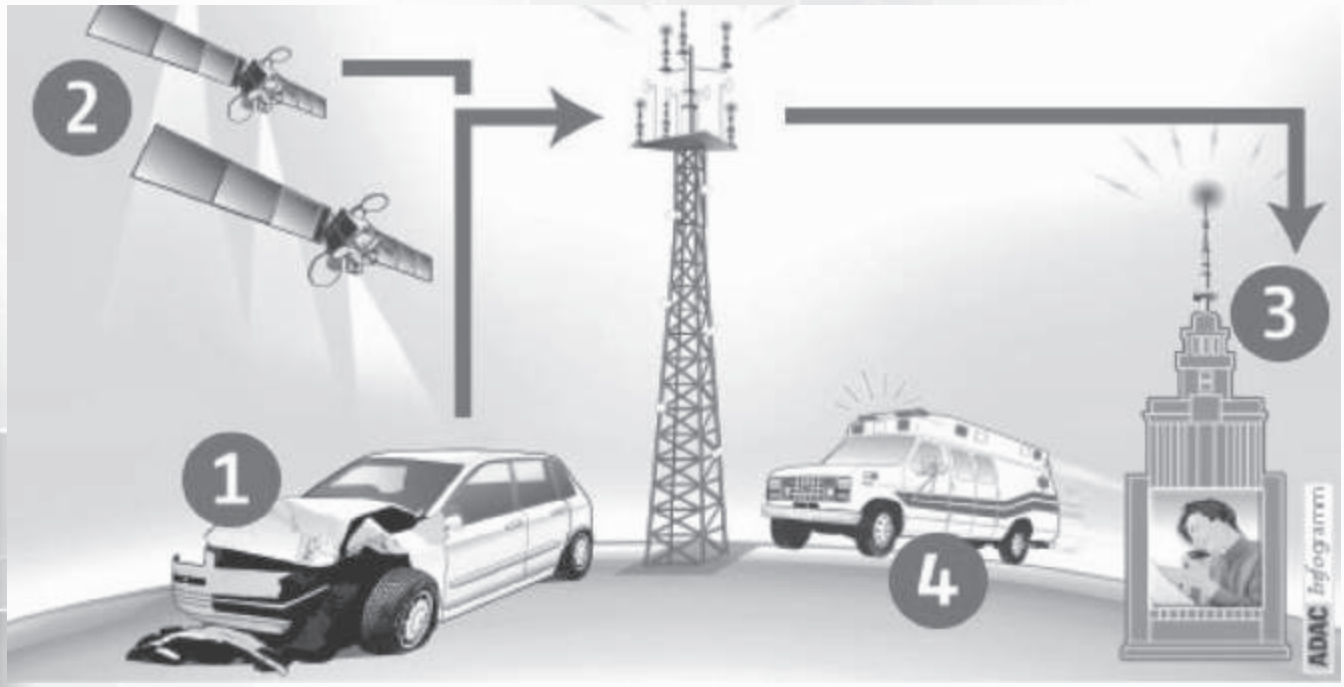


In Utility Meters: M2M service provider may setup a subscription for connected M2M devices with a telecom operator. This operator could provide services for connection and data transfer between the utility meter and grid. Then later when the contract expires then the profile for service provider can be easily changed on eUICC remotely without even involving cost of physically changing the SIM.

The same above example can be applied to different applications such as **security cameras, parking meters, fare collection devices, tracking devices** etc.

4. Embedded SIM in "Automated Emergency Response System"

An emergency response system is always design for its spontaneity, speed and reliability. Such system may be employed in a car and on any accident; it will notify any public safety system through cellular network call/sms/ussd. For this the system must be connected to the network on an emergency profile which will provide minimal call drops and maximum coverage on emergency cases.



A typical example for this could be eCall/Era-Glonass call system. This system is based on GPS (Europe) and GLONASS (Russia), fitted in cars; will monitor the sensors of the car such as its air bag or shock sensors. On an even of accident these sensors activated and inform the eCall/Era-Glonass about an accident, here it will trigger eUICC to switch to emergency profile. Now the call system can be activated and thus informing a public emergency handling system about an accident along with the coordinates of car.

Hence for future connected world Embedded SIM would be an essential element

inMorphis - an ITS Alumnus Start-up

Experience Wow at Work!

We all are no stranger to great user experience the B2C applications - web, and mobile apps - have on offer to us. From Uber to Ola, from Amazon to Flipkart, we love the online and app experience so much that we expect the same when at work. Click 1, Click 2 or Tap 1, Tap 2, we are done. In a few seconds, we place the request for what we want. No sweat!

Let's step into our office space, and become employees who are requesting services. We have an online application for everything - HR, Finance, GRC, Help Desk, Sales, Marketing, etc - you name it, and we have it. Each one of them has their own unique user experience to offer, their own service providers, their own work flows, and if we are lucky these applications talk to each other.

If nothing works, we have emails, phone calls. And we love emails don't we. Always better to write an email about what we want, than to click, type, and shriek in agony when using archaic applications built to serve us. Well, if no one replies, we can always call, if called the wrong person, get the contact of the right person, and call, and call some more.

According to the Service Now white paper - State of Work Report 2016 - available on their website, Workplace Services Lag Far Behind the Consumer Services workers are used to. According to the survey from Research Now on which this paper is based, Only 30% of the managers request for services online. And this is based on the survey conducted in Australia, France, Germany, Singapore, the U.S. and the U.K. We can imagine what would be the state of affairs in developing economies.

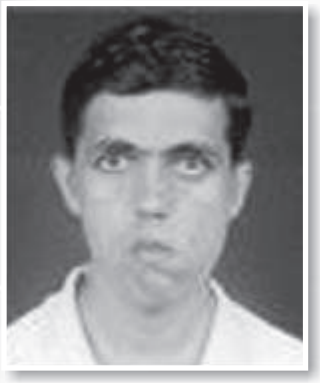
What could be the reasons behind manager not going online to request services? After I read through the report, here's what I definitely concur with:

- Manual Workplace Services Deliver a Poor Front-End Experience [Yes, we do not have Amazon, and Uber like applications for sure.]
- Difficult to find the service one needs, and in case we are lucky to find, well the forms run into several pages if printed.
- Not all services are online, can access only when inside, on the outside, forget it
- Accessing all of these services on the mobile, well that would be termed too demanding
- Backend fulfillment Process is a drag [Appropriate assignment, capacity utilization, and turn-around times often make us switch to emails, and phones]
- Status of our request [Well, we do get to know it's shuttling from one department to another, but when should we get it delivered to us, no one cares to share]

No guesses on how much productivity, and efficiency is lost.There is obviously less time for strategic initiatives, and ultimate outcome is stress.

At inMorphis, we are using ServiceNow to transform our employees' experience. We are making it easy and enjoyable to get work done at inMorphis as it is to consume Services from Amazon, Uber, Flipkart, and Ola.

Experience Wow Now with inMorphis!



Mobile Health Apps Today and Tomorrow

Manoj Kumar
Technical Architect
Ebix Software India Pvt.Ltd. Noida

"We have since found that it's nearly impossible to afford for health navigators to take care of all patients. So we have adapted forward using information technology to stay in connection with patients with chronic diseases on a daily basis."

"That communication has improved the quality of care and outcomes tremendously. More importantly, it has decreased readmissions."

The mobile health industry, along with remote monitoring and telehealth systems, has a wide impact on reducing hospitalizations and emergency room visits throughout the healthcare spectrum by improving communication and care coordination among specialists, doctors, nurses, and others. Research has shown that hospital readmission rates have been cut by 92% while emergency room visits dropped by 87% with the use of mobile health apps and greater communication.

The use of mobile communication tools has also allowed for greater patient engagement, which means more individuals are focused on improving their health and wellness such as sticking to a healthy, physician-recommended diet, continuing exercise routines, and adhering to their medication schedule along with follow-up appointments.

"This was an area of high uninsured patients. We found that in one year, we were able to reduce the cost of healthcare by over 80 %, reduce hospitalizations by 92 %, and emergency room visits by 87 % by communicating."

"Back then, we did it with healthcare navigators. From that, it became awfully clear that the big problem in healthcare is adherence. Once the patient leaves the office, most of them forget almost everything that they're told. By the time they get home, they go back to their regular activities."

Benefits of Mobile Health Apps in emergency care

One interesting area in which mobile health apps can assist individuals was found in the emergency room among hydrocephalus patients. One mobile health apps was able to store important information about a patient's surgery, shunt or medical device installed, medical history, and vital notifications.

This was vital in the emergency room because patients with hydrocephalus and a shunt installed in their brain could have health issues related to the failures of the medical device. Having a mobile health app that can offer assistance to a healthcare provider by detailing everything they need to know about prior operations and medical devices is a major advancement for this particular patient population.

Mobile Health Apps for diagnosing disease

Mobile health apps and devices are really making a strong impact in the healthcare industry, as they may even be able to diagnose disease and prevent the likelihood of developing dangerous medical conditions like heart disease or diabetes.

Using Mobile Health Apps to bridge the gap between healthcare and health management

"Mobile health solutions can bridge that gap and provide timely information and psychological support tools both when, and where, the person needs it. In an age when technology is at our fingertips, it makes a lot of sense to provide online health programs that reinforce key concepts and assist the user with stress management tools. Chronic illnesses, like diabetes, take attention day-in and day-out and that can lead to burnout. Offering online mental health programs can help the person with diabetes cope and persevere."

The benefit of Mobile Health Apps in healthcare

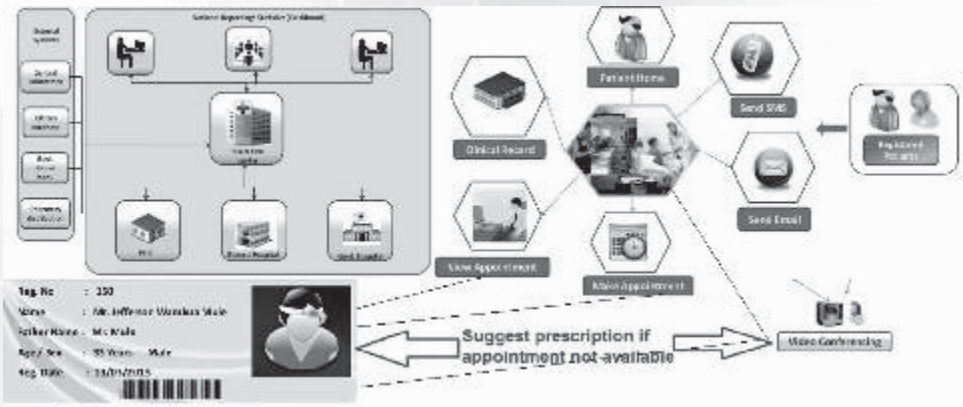
Mobile and tablet apps enormous potential for training and professional development in healthcare. The health industry is responding to the increasing popularity and availability of technological innovations, such as tablets and Smartphone's.

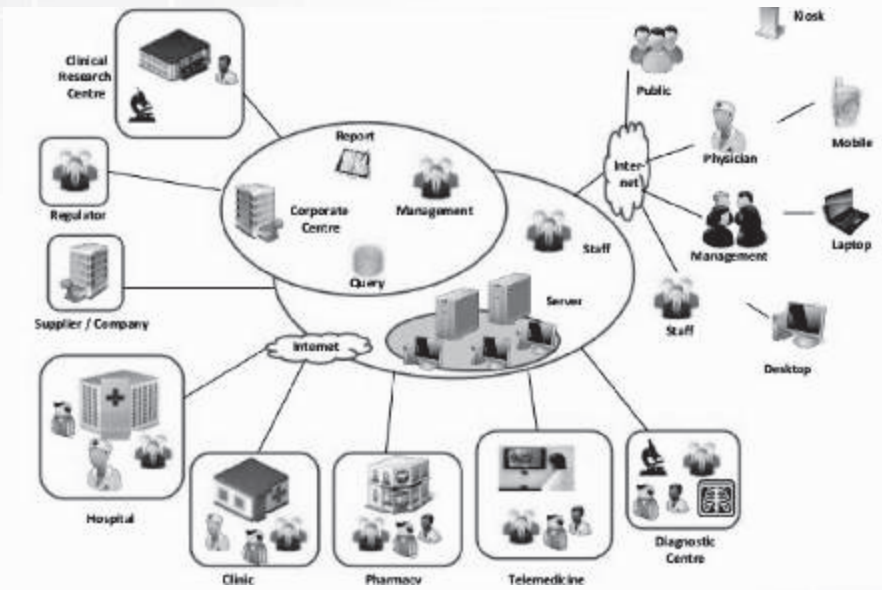
- Health and well being applications are estimated to make up approximately 40% of new Smartphone apps currently being developed. This is a huge market and only set to increase as the benefits become more apparent and Smartphone and tablet technology become more widespread.
- Health applications have the potential to be adapted and used by healthcare professionals and consumers, helping to revolutionize the sector and reflect the digital age we live in.
- Tablets and Smartphone's are readily available and the technology is relatively low cost when compared to other health technologies and professional training tools.
- Smartphone's and apps incorporate a range of features which can be utilized for interactive learning, such as 3G, Wi-Fi, Bluetooth, sound and video, voice recorder and camera.
- Further more, applications are designed to be simple - there is no new learning curve. If you know the basics of how to use a smart phone or an app, you can quickly learn to use new apps, reducing training time.
- As mobile technology becomes more sophisticated, apps have huge potential to deliver simple, effective, inexpensive, and personalized solutions to healthcare professionals' training needs.

mHospital app screens

Login screen for Dr/ Patient processing in progress to authenticate Dr/ Patient from Hospital database server.

USE CASE DIAGRAM





Digital India Initiative and Education Sector

Ms Swati Mehra
Senior Business Analyst at NIIT Ltd.

Education system and the teaching methodologies have come a long way. From the Gurukuls of ancient times, to classroom trainings to the even more recent world of computers and e-learning, education system has come a long way.

Advancements in ICT tools and devices has taken learning to all together a new height with classrooms becoming digital, easy availability of open educational resources, MOOCs (Massive Open Online Resources), e learning, mobile learning, social learning, collaborative learning and so on.

These changes are not limited to schools and colleges alone and has also made a foray into the corporate sector as well. With BYOD (bring your Own Device) concept becoming common, corporates of today are also moving towards mobile learning, collaborative, social and e learning as means of learning and development of their employees.

However all this requires a solid digital infrastructure to be setup that penetrates deeper into geography of every country to reach all citizens. Unless and until the digital landscape has been setup and is easily accessible to people, technological advancement and new teaching methodologies will remain concentrated to small pockets of population only.

Till date, use of technology in education sector in India has been limited and has largely been concentrated in metros and big cities. The Indian education system to a greater extent still follows the traditional 'chalk and talk' methodology. Though in urban India and particularly in big cities, ICT advancements have made their foray into public schools and colleges, the class B cities and rural sector has largely remained untouched with these changes as they still lack the basic infrastructure and training needed to support the new technologies and tools.

Government of India's ambitious project Digital India is a giant step forward towards redefining the digital landscape of India. The focus of this initiative is the digital empowerment of the people of India by creating digital infrastructure as a utility to every citizen for governance and services on-demand. The Digital India initiative is built over it's following 9 pillars.

- Broadband Highways
- Universal Access to Phones
- Public Internet Access Programme
- e-Governance - Reforming government through Technology

- e-Kranti - Electronic delivery of services
- Information for All
- Electronics Manufacturing - Target NET ZERO Imports
- IT for Jobs
- Early Harvest Programmes

Once the digital backbone is setup under the Digital India Initiative only then we can visualize the advancements in the way knowledge and learning is imparted across India.

Education is one of the sectors that is covered under e-Kranti- electronic delivery of services. Under it, the Government has launched projects like eBastaand Nand Gharto use technologies like internet and mobile devices for imparting education to students even at far flung places where teachers cannot be physically present. National Optical Fibre Network (NOFN) project is going to be backbone of the Digital India campaign. Expansion of broadband connectivity and setting up of broadband highways is going to help growth of e-learning along with the various other schemes setup by the Government.

Thee Basta projectis currently live and has created a frame work to make school books accessible in digital form as e-books to be read and used on tablets and laptops. In addition to the portal, a back-end framework to facilitate the organization and easy management of such resources has also been made, along with the web based applications that can be installed on tablets for navigating the framework.

The project aims to bring publishers and schools together on one platform. A portal has been setup that acts as a single point of interface for publishers to reach out to schools across the country. Likewise the teachers and students can register on the eBasta portal (and even download the app) to access the various e learning content available. The wide spectrum of e learning content that is available in different forms like text, simulation, animation, audio book etc. enables the teachers to choose and bundle the content accordingly to their need and teaching method. Eventually it will enable the schools with lesser teaching resources to gain from the resources of better schools

The Nand Gharyojna is another initiative launched under Digital India umbrella that is built on the concept of 'Building as a Learning Aid' piloted by UNICEF. The scheme is aimed at modernizing the 4000+ anganwadis across the country. With corporates like Vedanta partnering with Government in Nand Gharyojna, steps have been taken to modernize the anganwadis. This includes setting up solar power systems to make them stand-alone, and television for teaching purpose. First such modern anganwadi has already been inaugurated in Sonepat and many more are under construction.

Corporates have also pledged their support in a big way to Digital India initiative and this support will definitely play a major role in making this whole initiative a success.

Microsoft and NIIT have partnered to train women IT professionals across India. This initiative will

be rolled out across 5,000 schools, colleges and NIIT centres across 200 cities. In addition, Microsoft will also be taking low cost bandwidth connectivity to 5 lacs villages in India. Intel has launched 'Digital; Skill' for India' initiative to introduce digital skills. Vedanta has pledged their support in modernizing the anganwadis. These along with other corporates like Qual Comm and Tata are some of the other big-wigs who have pledged their support to the Digital India Initiative particularly in the education and skill development segments.

Though the Digital India Initiative has just started yet work done till now is evident to prove that the objectives and predicted outcomes and impact of this initiative by 2019 look achievable and once achieved will not only change the digital landscape of India but will also make it's people more digitally empowered. All this initiative needs is support, acceptance and faith in the defined vision to become a reality.

Glimpses of Events of Department of I.T.@I.T.S, Ghaziabad

Awards & Recognition to I.T.S - The Education Group

Dr. R.P. Chadha, Chairman I.T.S - The Education Group with Late Former President Dr. A.P.J. Abdul Kalam

ASSOCHAM Education Excellence Award 2015

All India Excellence Award

Rastriya Shiksha Shiromani Award

Rastriya Ratan Award

NAAC Accreditation With Grade-A received by Dr. R.P. Chadha, Chairman I.T.S - The Education Group

Life Time Achievement Award

Jewel Of UP & Uttarakhand

Best Computer Application College Award to I.T.S, Ghaziabad by CEGR

Department of IT@ I.T.S, Mohan Nagar Ghaziabad

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- Prestigious National Board of Accreditation (NBA) accredited MCA @ITS, Mohan Nagar, Ghaziabad for overall outstanding performance of the course.
- Imparting Technical rigor among MCA students through various clubs like C-Club, Java club, Dot Net-club and Database Club.
- Round the year learn by fun activities and fests such as Samagra (an inter-institutional techno-cultural fest), Spardha (C-Club contest), Sanrachna (Java-Club Contest), Abhikalpan (Dot Net-Club activity) etc.
- Computer Society of India membership is provided to every MCA student that provides opportunities for participating in various regional and national activities of CSI.
- Our students have been regularly appearing in Top Merit List of the University.
- ITS MCA students regularly participant and win in several national and international events like ACM-Mega Event, Microsoft-Imagine Cup, IBM - TGMC, IIT, IET - Visit round the world contest etc.
- Round the year opportunities to interact with learned scholors like Dr. Richard Stallman, Dr. E. Balagursamy (famous technical author), Dr. Pankaj Jalote (famous writer in the field of the software Engineering), Mr. Som Mittal (Ex-President NASSCOM), Dr. Sartaj Sahni (Renowned Computer Scientist & Researcher), Mr. Ron McLuckie (WIAL).
- Lots of fun activities such as live concerts of Benny Dayal (Play Back Singer), Shibani Kashyap (Play Back Singer), Ashok Mastie (Pop Singer) and interaction with various other celebrities like Ayushman Khurana (Actor), Ram Gopal Verma (Film Director and Producer), Ashish Nehra (Cricketer), Vinod Kambli (Cricketer), Dr. Kiran Bedi (Social Worker and Politician) etc.

Souvenir of CXO Meet on

"Digital India Mission: Transforming India for Tomorrow"

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