Opportunities for ICT Development between India and Japan

Keynote Presentation

By

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(Gov. of India)

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Makuhari Messe, Chiba, Japan

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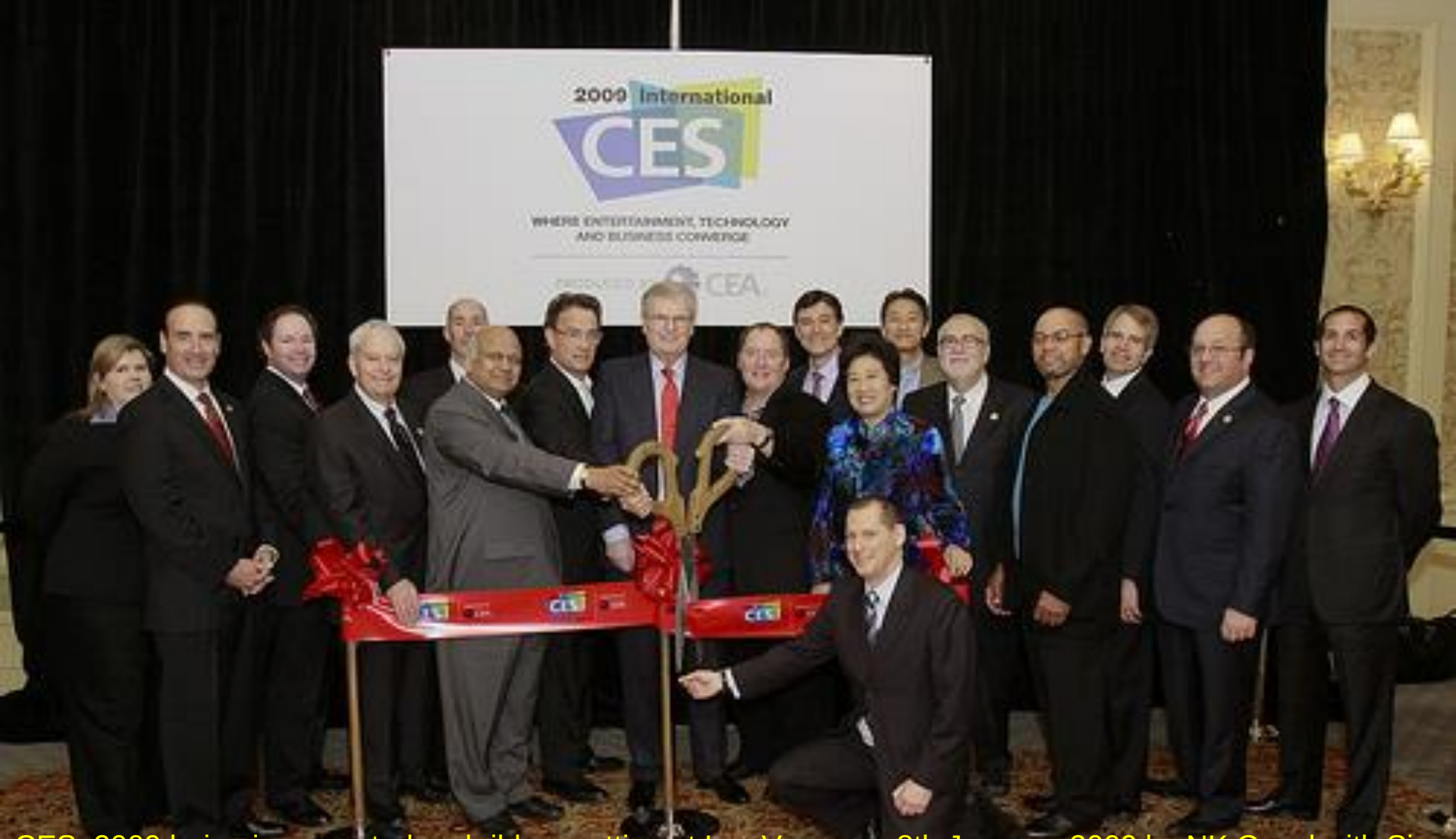


CES, 2009 being inaugurated and ribbon cutting at Las Vegas on 8th January, 2009 by NK Goyal with Sir Howard Stringer, Chairman & CEO of Sony Corporation, Mr. Tom Hanks, the American movie star, Mr.Gary Yacoubian, Chairman CEA & President of Myer-Emco AudioVideo, Mr. Gary Saprio, Vice President of CEA, Ms. Qu., Presixdent, CECC China, Mr. Patrick Lavelle, President and CEO of Audiovox, Mr. Peter Lesser, President and CEO of X-10 (USA) Inc, Mr. Loyd Ivey, Chairman and CEO of MiTek Electronics and Communications, Mr. Jay McLellan, President and CEO of Home Automation, Inc. (HAI), Mr. Mike Mohr, President of Celluphone, Mr.Grant Russell, President of Kleen Concepts

Advantage India

- GDP crossed USD 1 Trillion Mark
- 4th largest economy in world when adjusted for purchasing power parity
- Growing well in excess of 8% per annum for last three years. Current GDP Growth 8.5%
- USD 380 Bn. Projected infrastructure investment in next 5 years

India's Electronics Potential

- Current India Electronic Hardware market size about US $ 34 Bn. out of which production $16.1 Bn. Ranked 26th in the world in sales, 29th in production
- Demand growing 25% CAGR, from 4% of GDP to 12% by 2015 ie. 320 Bn. Total production may go up to $ 150 Bn. And exports $ 21 Bn. with employment potential of 21 Mn.
- Consumer Electronics (CE) is the largest segment of the Electronics sector. It contributes 33% to the Electronics production in the Country.
- Nationwide TV broadcast to be digital by 2015, significant opportunity for STB consumption & manufacturing
- PC sales, ITES/Software Exports, Internet, Broadband all set to grow

India Telecom Investment Opportunities

- Second largest telecom penetration, world's highest monthly additions.
- 846.32 Mn. Subscribers March 2011….Wireless 811.59, Wireline 34.73. Active subscribers in VLR 573.97 Mn.
- Indian Telecom sector to witness huge investments to the tune of $ 110 Bn. during 2012-2017
- Telecom Subscribers to cross 1.5 billion by 2015 and 5 billion by 2020.
- About 25 per cent (Appx. 300 million) would be 3G/4G subscribers, which would require scaling up the infrastructure.
- About $ 70 Bn. is estimated to be invested in rolling out green field 2G, 3G/4G and WiMax networks, while $ 25 Bn. would be required to set up an extra 200,000-odd telecom towers across the country.
- The total investment in the pan-India broadband rollout is expected to be $ 20 Bn, while another $ 20 Bn. will be invested in augmenting the transmission network.

Innovative ways

- Most economical way of doing business, lowest tariff highest profitability
- Managed services contract for network and IT services
- Lowest recharge less than 20 cents
- Missed call concept
- SMS based earnings due to TV games, greetings, jokes, social networks, VAS contents
- Lowest acquisition cost for new connection ..half dollar for life time
- 92% prepaid connections....low cost of recovery
- Multiple choice of technology and vendors
- Agricultural service, tele education M Commerce
- Strong incumbent behaviours
- Excellent roaming policies
- Handset bundling…...handset less than ten dollars
- Broadband bundling…PC on loan

ICT play a influential role ir the process of E Governance

- Purely Technical: in terms of automation of tedious or repetitive governance tasks, thereby improving the efficiency of the process eg. Automated filling of tax forms
- Facilitating/Supportive Role: in terms of complementing the existing efforts/methods to improve governance eg. Information sharing etc
- Completely Innovative Role: like involving initiating new services and mechanisms to improve levels of governance
- To deliver a range of services – from ration cards, motor licenses and land records to health, education and municipal services
- To enable easy, reliable access over the Internet for timely, efficient, economical, equitable, transparent and corruption-free activities of Government.

India's e-Governance Plan- *Giving bir an entire web-based economy*

- The size of Indian IT industry estimated as $76 Bn.
- National e-Governance Plan (NeGP) announced in May 2006 by Government of India envisages massive countrywide infrastructure reaching down to the remotest of villages and large-scale digitization of records. It comprises of 27 Mission Mode Projects and eight components.
- Government`s own State Wide Area Network (SWAN) project already in place for intra-government connectivity under which every block level government office in the country across 27 states is connected. The speed is planned to be upgraded to 2 Mbps.
- Projects are upcoming for computerization including public sector banks & insurance co. with estimated cost Rs 20,000 Cr
- In the next couple of years the industry is expected to grow by 22-25 percent.

National E-Governance Action Plan

Apex Committee

Program Management Structure

Central Government Projects

- National ID
- Central Excise
- Income Tax
- DCA 21
- Passports/Visa & Immigration
- Pensions

State Government Projects
(Sub Programme)

- Land Records
- Property Registration
- Road Transport
- Agriculture
- Municipalities
- **Gram Panchayats**
- Commercial Taxes
- Treasuries
- Police
- Employment Exchange

Integrated Projects

- EDI
- e-BIZ
- Common Service Centers
- India Portal
- EG Gateway
- e-Procurement
- e-Courts

- Core Policies
- Core Infrastructure
- Support Infrastructure

Program Components

- Integrated Services
- Technical Assistance
- HRD & Training
- Awareness & Assessment,
- Organization Structures
- R&D

Indian Government push fc ICT in Rural Areas

- One-third of the people in the Country of 1.2 Bn. population are below the poverty line. Government is pushing ICT in rural areas to empower them so that the Country would grow by 11 per cent against the present 8.5%.
- Govt. is focusing to connect 2,50,000 Panchayats in the Country by 2012. Total villages are 6,00,000 would be planned to be covered later.
- Under earlier plan there are close to 94,000 telecentres at block level each having a computer, a scanner, a printer and technical staff to help villagers with their work with 256 Kbps

Indian Software Industry

- India's software and services exports are seen rising 16-18 percent from 2010 to 2012
- India's share in the global outsourcing market rose to 55 percent in 2010 from 51 in 2009 and continues to increase.
- Nascom forecast export revenue of $68 billion to $70 billion for outsourcing sector in fiscal 2012.
- The Indian software industry is remarkable in a number of respects. It is service rather than product oriented, heavily export oriented, and is largely managed by professional and entrepreneurial managements.
- India has 16% of the global market in customized software, and that more than 100 of the Fortune 500 had outsourced to India.

Opportunities/ Potential Areas

- 3G and Broadband Wireless Access and applications
- Triple Play Services
- Next Generation network and services
- Cell phones , 2G & 3G : Fastest growing Cell phone market.
- FTTH (Fiber To The Home) -Passive Optical Networks
- Value added services in Mobile segment
- Transition from Ipv4 to Ipv6 in Indian Network
- Voice on IP protocol (VOIP) and Internet Telephony
- Security Equipment for IP networks (Internet, NLD ILD)
- MVNO

Electronic Components

- Consumption of electronics equipment in India will be $363 bn. by 2015.

  (Frost & Sullivan)
- India has the potential to manufacture electronics equipments worth $155 bn by 2015.
- Most of this growth is expected to come from manufacturing of information and communication technology products, and office automation.

The expected Electronics Market for 2010-11

	Total Sales		
	2010-11	2009-10	% Growth
Desktops	6,200,000	5,525,992	12%
Notebooks	3,560,000	2,508,564	42%
Total PC	9,760,000	8,034,556	21%

Convergence

- Tremendous convergence of the Information Technology is happening now a days. There was a time when handsets were used to make phone calls and talk to the people and desktops and laptops were used to surf the net. Now, the handset is being used via 3G technology, to do video conferencing, to talk to each other, to have night chats on handsets and we are using mobile to surf the net.
- There are more opportunities, now, for youth to find new and dynamic ideas, to be more creative, to participate in this ever changing dynamic sector.

Broadband Global Status

- Universal broadband service has become a national priority
- 578 million worldwide broadband subscribers as of December, 2010
- Consumer enthusiasm for broadband service. By 2013 the number of global broadband subscribers will surpass 1 billion.
- The growing popularity of bandwidth-intensive applications, such as watching online video, using IP-based telephony services, and downloading music files, is spurring global demand for broadband Internet connections.

India Broadband Status

- 11.87 Mn. Broadband subscribers(256 Kbps) as on March, 2011.
- 10% increase in broadband penetration increases GDP of a developing Country by 1.38%.(World Bank)
- The penetration would also generate 20 million jobs
- Targeting a whopping 14-fold increase in the broadband from 1.1 Crore Subscribers during 2010 to 7.5 Crore by 2012 and 16 Crore by 2014.

National Optical Fiber Netw
(NOFN)

- NOFON envisages to connect 5,00,000 villages with the internet broadband services in the next two years.
- This was in response to TRAI, Indian Telecom Regulator proposal to create National Broadband Backbone with around Rs 17,000 Crore laying fiber cables from Universal Services Obligations (USO) funds
- The optical fibre network would help various service providers and users get broadband through a variety of wired and wireless solutions.

Opportunities for Green Technologies

- In spite of having low greenhouse gas emissions per capita, India has already become the 3th largest emitter in the world, according to the International Energy Association. That means immense international pressure to respond.
- As per Greenpeace the I*ndian telecom* sector requires 14 billion units of energy and it ends up consuming around 2 billion liters of diesel. .Energy requirement projected to reach 26 billion units by 2012
- TRAI, Indian telecom regulator proposed 50 per cent of all towers in the rural areas are powered by hybrid renewable sources by the year 2015. Total towers estimated 4,00,000.
- Hence large opportunity to develop and cooperate in alternate energy for telecom sector.

Solar Energy Potential

- Solar energy potential in India is estimated about 70GW by 2022 with Over $42 Bn. investment
- India gets 300 sunny days a year that can help generate estimated 5 trillion MW of energy
- Govt. Committed to support the solar energy scale-up while also reducing solar costs. Over 1,600 MW of Power Purchase Agreements(PPAs) have already been signed.
- Capital costs for solar projects have dropped from INR 15-16 Crore/MW to INR 12-13 Crore/MW.
- Renewable Purchase Obligation (RPO) is being implemented across the country. Under this Distribution companies and captive consumers will have to source 5% to 15% over ten years of their energy from renewable sources. Within this, there is a solar-specific RPO of 0.25%, slated to grow to 3% over the same time frame. The RPOs will be implemented through Renewable Energy Certificates (RECs)

Indian UID Project

- India Govt. has started first of its kind project in the world Unique Identification Authority of India (UIDAI)
- Over 10 $ Bn. projected investment in National ID and E Governance.
- Under this unique identity number will be issued to 600 Mn. of Indian population by 2014.
- Single identity paradigm would facilitate giving identity to citizens, enable tracking of end to end service delivery, subscription to new services, help tracking people related with security concerns.
- This project offers tremendous opportunities for technology and products.

Mobile Entertainment Opportunities

- Asia Pacific has more than 57% share in global mobile entertainment industry.
- Global Mobile Entertainment industry expected to grow at CAGR of 19 % from 19 $ Bn. In 2008 to $54bn by 2014.
- Mobile music, the largest contributor, expected to grow at CAGR of 13 % from $10bn in 2008 to $21bn by 2014.
- Mobile video, the second largest revenue generator, expected to grow 36 % CAGR, from $2bn in 2008 to $14bn 2014.

Indian VAS Market

- SMS continues as world over highest revenue generator
- Ring tones and SMS account for large portion of VAS market. About 8,00,000 ring tones downloaded daily
- In India Revenue from VAS presently is 10-14% of total revenue, expected to grow 30% within next 5-7 years.
- VAS core component of operators revenue
  - High end users....video on demand, user generated content ie. interface between web and mobile
  - Long tail users, who focus on contents subsidized by ads.
- Good scope for utility based services eg. Location information, M commerce etc.
- Gaming coming up in big way. 30% of games download in Category B/C towns.
- Mobile advertisement picking up. Global revenue from mobile advertisement expected to grow $ 10-20 Mill by 2011
- The Indian mobile VAS) expected to reach US$ 5.8 Bn. by 2013, from US$ 2.0 Bn. in 2009. Currently,

Growing Data Traffic

- Mobile data traffic is expected to double every year through 2013.This boost in traffic is eating up bandwidth and providing a threat to everyone's user experience.
- Apple's iPhone, and the G1 Google phone, mobile video are creating a dramatic increase in mobile Internet traffic. This increased mobile data usage could eventually suffocate network bandwidth and clog wireless networks.
- Increased usage of internet-centric phones, more multimedia rich applications, and the increase in sharing of data using mobile devices provides a threat to existing capacity and operator profitability.

Growth of Connected Devices

- Globally Internet connected devices to be more than 15 Bn. and internet users 3 Bn. by 2015.
- Global internet traffic to quadruple by 2015 and reach 966 exabytes per year. Global mobile Internet data traffic to increase 26 times from 2010 to 2015, to 6.3 exabytes per month (or 75 exabytes annually). (CISCO)
- That means demand for new technologies for operators and customers

Femto cells and Wi-Fi

- Exponential growth in data traffic have made telecoms operators desperately trying to find alternatives to handle the demand for both capacity and coverage.
- Wi-Fi and femto cells can address the relevant issues of network coverage and data capacity without damaging operator's business plans and ROI.
- Femto cells are better-positioned for providing indoor coverage as they are more focused on voice services; Wi-Fi is recognized as an important alternative to promote data off-loading from the busy 3G networks

Wi-Fi Direct Devices

- The number of Wi-Fi Direct-enabled devices shipped will reach 173 million, says In-Stat. Devices shipping with embedded Wi-Fi Direct in 2011 will be led by desktop PCs, digital TVs, mobile phones, and notebook PCs.
- Expected compounded annual growth rate will be 79% between 2011 and 2015.

Global IPTV Market

- Subscriptions from IPTV-based companies including telco companies will almost double in three years to 70 million from 30 million at the end of 2010
- IPTV Revenues to grow $27 Bn. by2014 from 12.9 Bn $ in 2010
- Within India also demand for IPTV is rising and offers vast opportunities.

Smart Grid Opportunities

- India will continue to experience insatiable energy demand growth over the next several years, giving rise to perfect storm.
- India offers $400 billion opportunity in building energy infrastructure. From current installed base of 170 GW, India will build up to 316 GW by 2020. Additionally, the National Solar Mission is going to add 20,000 MW of solar energy in next 10 years.
- In the same time-frame, the demand gap will grow from 19GW to 103GW, an increase of five times.
- In this scenario, all types of energy have opportunities- conventional, nuclear, and renewable including Smart Grid applications.

IPv4 Migration to IPv6

- India will also face problem of IPv4 addresses and the problem is worsening due to continuous addition of miles users, connected devices and start of 3G and Broadband Wireless Access services.
- IPv4 allows 4.3 billion IP addresses whereas IPv6 will enable another 340 trillion, trillion, trillion addresses -- enough to accommodate global Internet demand for the foreseeable future.
- India has taken a policy decision that all ISPs and telecom providers will have to be IPv6-compliant by the end of 2011. And by March 2012, all Central and State Government Ministries and public sector companies will make the switch to IPv6 Internet protocol based services.

Opportunities in Cloud Computing

- The cloud computing market in India is expected to grow at a CAGR of 40 per cent by 2015 to Rs 11,200 Crores ($3 Bn.) from an estimated $66.7 million in 2009, $ 500 Mn. In 2011 driven by cost and performance efficiencies
- During the same period, the global revenues from cloud services will grow from $29 Bn. to over $70 Bn.
- Some well know cloud services today are Google's search, Apple's iTunes, Amazon Web Services, Microsoft's Azure..
- As compute loads grow 10 times, 100 times and even 1,000 times, there is need for new architectures for IT systems.

Other Web Based Technologies

- In IT, the technology and the usage evolves faster even more than 10 times than any other industry. This means new business opportunities and old technology becoming obsolete.
- The internet has grown from 10 million users to one billion users and up to three billion if we count Internet-enabled mobile phones too. The total connected devices today are about 5 Bn. likely to grow within few years to 1 Trillion.
- The active websites have grown from 1 Mn. to more than 100 Mn.

SOCIAL NETWORKING

- India currently has 50 Mn. mobile web users. The growing popularity of mobile social networking can also be attributed to youth. Youth being mobile savvy as well as enthusiastic users of social networking sites are setting the trend, attributing to the rise of social networking through mobiles.
- Approximately 10 Mn. urban Indians used their mobile phones for engaging in social networking during quarter ending August, 2009, a reach of 3.3% among urban Indian mobile phone user. It also overtook China to take the 3rd place in the global mobile internet industry.
- 7 out of top 20 sites Indian internet users are visiting are in the arena of social media. 4 out of top 20 most visited sites in India are social networking sites. More than 70% people who are online are engaging with social media on some or the other platform.

Mobile Commerce and Social Commerce

- About 7 per cent of the overall internet users in India are active on line shoppers. This is likely to grow to 25% in next three years with more mobile users and growing mobile commerce applications on use.
- Social commerce is also expected to grow substantially as it could prove to be a key revenue model for social sites. This can be achieved either by creating a universal social currency or through social apps that will either help people transact or provide consumer feedback about a specific product or brand.

Fusion Cable Technologies

- Demand for access to media and communications on any device has increased, cable operators have embraced innovative solutions that move beyond first-generation, triple-play services and seamlessly fuse communications and entertainment to meet demands for an integrated digital lifestyle and new social media interactions.
- Multiparty, multimodal, multimedia services – or 'fused' services – blend high definition voice, video and data to create personalized entertainment services.
- New emerging services and technologies required to provide fusion between communications services that allow users to communicate and share content in different ways, regardless of end-user device or access network type.

Content Distribution

- One of the key digital milestones in 2010 was the streaming of IPL matches on YouTube. This triggered many TV channels into creating their respective channels on YouTube to use them as delivery mechanisms and retain user engagement. Large production houses like Balaji Telefilms as well as startups like CoolDose.com began creating exclusive videos for the web.
- Entertainment might take a whole new meaning as more channels are expected to create and produce content specifically for the web. TV sets may transform into internet devices with the ability to navigate and access on demand content.

Telecom Equipments Manufacturing

- India import 40 to 50 Bn $ of electronic hardware presently.
- Demand for telecom equipment in 2009-10 was pegged at Rs 547.65 Bn. or about 5.5 per cent of the total global demand. This is projected to grow to Rs 965.14 billion by 2015 and Rs 1,700.91 billion by 2020.
- TRAI, Indian telecom regulator proposed telecom firms to source 80 per cent of their network equipment and other related infrastructure from domestic manufacturers in a phased manner.

Global Mobile Handset Market

- Over 2 Bn. people worldwide will own at least one smart phone in 2015, with unit sales growing over 175% from 2010. (Parks Associates)
- Global mobile handset industry valued at appx $133bn in 2009 likely to grow at CAGR of 17.1% during 2009–14 to reach $293bn by 2014.
- India and China largely driving growth of smart phones in Asia Pacific, which constituted 47% of total of 112 Mn. shipments during 2009. Likely to grow more than 50% by 2014 with total shipment forecasted 712 Mn.
- Smart phones contributed 79 % of profits during 2009 even though market share was hardly 17%.

Security Threats

- India offers big market for security related technologies for networks, customers.
- The speed with which criminals are capitalizing on world events, growing collaboration among cybercriminals and a growing threat from disgruntled former employees.
- Less than 24 hours after the news of Michael Jackson's death first broke, spammers had sent more than 5 billion spam emails, reaching a peak of more than 5% of global spam
- The creators of the Conficker worm, which infected an estimated 9 million computers starting late last year, had established an agreement with the makers of the spambot, Waledac, to help monetize eachother's efforts in a partnership of product and distribution.
- Technological innovations are required to address these issues.

Priorities for World

- **Global Poverty & inequality**
- Inspite of quite phenomenal growth during last decade
- Almost half of the world's population lives below the poverty line
- The lower 50% possess less than 1% of the world's wealth
- Over a billion people suffer from chronic malnutrition
- Three billion do not have access to clean water or proper sanitation
- Along with poverty, inequality has risen dramatically and dangerously
- The Millennium Development Goals (MDGs), adopted in 2000, were meant to solve these issues by 2015. Not much hope to achieve that.
- **Climate Change… A SERIOUS ISSUE**
- While climate change has been described as the greatest challenge (and threat) mankind has ever had to face, it could also be the greatest opportunity. It will ultimately stand out as the test of whether humanity can engage in collaborative survival or is doomed to conflictual destruction.
- Sustainable and inclusive development is possible. Are we ready to work for it?

About CMAI

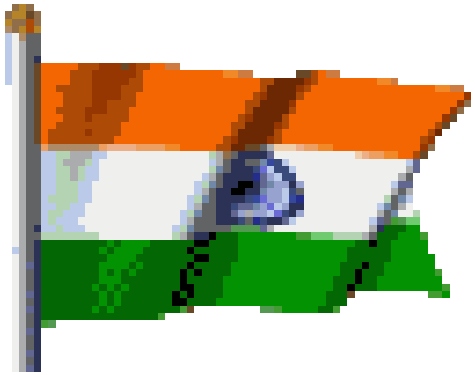
- CMAI prime Integrated Association of India representing all verticals of ICE, telecom sector of India in India having more than 34 MOUs with International organizations, with branch offices in Japan, Korea, Singapore, Taiwan, China and Malaysia.
- It offers one window service for information dissemination, guidance on setting up businesses in India.
- It connects you to Industries, Government, Trade and business
- It is involved in policy formulations with Government and other stake holders for Technology Innovations, Indigenous manufacturing
- It is developing scientific knowledge and practical means for protecting human ecology and environment from the harmful effects of environmental hazards like e waste, radiation etc.
- It assists manufacturers to maximize competitiveness in the domestic and international markets.
- It also offers consultancy services on turn key basis through its member companies

About CMAI

With CMAI membership, you gain access, authority, and intelligence designed to help you to:

- **Protect** interests when standards and policies are being formulated
- **Engage peers** regularly about market challenges or business opportunities
- **Access** timely news, information, and market intelligence
- **Expand** business to overseas markets efficiently and effectively
- **Gain** a competitive advantage through convergence
- **Take the Lead** on green initiatives in the ICTE Industry
- **Participate** in Indian and global Exhibitions, Seminars, Workshops

Where we have reached today



Great Indian Opportunity

THANKS