

# Panel 1: Empowering ICT industry for Development of Society

Panel moderator:

**Mohammad R. Pakravan** (Sharif University of Technology )

# Introuduction

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It is widely known that development of ICT in a country has a considerable impact on its national development.

ICT industry has developed hardware, software and services that are used in many aspects of our daily life.

Development of ICT industry in a country has a direct impact on many aspects of that country society such as its financial, technological, cultural and educational development.

Therefore, it is important to focus on ICT industry as a key important industry which should be carefully managed and developed in each country to obtain the desired benefits.

# key players

ICT industry is composed of many key players that interact with each other to create the national and international ecosystem needed to create and develop the desired systems and services for the society



# Panel questions:

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1. What are the growth opportunities in each of these players that can empower the ICT industry as a whole?
2. What are the important risk factors that can negatively affect the operation of each player and the development of the national ICT industry?
3. What are the recommended actions that can be used and applied in each of these areas to benefit the national ICT industry?
4. To increase the development and growth of our national ICT industry ecosystem, what can be recommended to facilitate and enhance the interaction of these players.

# Panelists and discussions:

**Nasrollah Jahangard** - ICT Deputy Minister for Technology and Innovation - Deputy of ICT ministry

**Nikoofar Hamid R.** – Deputy of Mobile company of Iran

**Ali Fotowat-Ahmadi** - Sharif University of technology

**Faramarz Rastegar** –Head of Telecommunication syndicate

**Rouhollah Rahmani** – Deputy of Innovation Digikala

**Kamal Mohamedpour** - Dept. of Electrical Engineering, K.N.Toosi University of Technology

- ➔ Governments and regulatory issues
- ➔ Telecommunication service providers challenges, issues and opportunities
- ➔ Universities and research centres opportunities and limitations
- ➔ Equipment manufacturers challenges, issues and opportunities
- ➔ Content and value-added service providers and also new business models in ICT
- ➔ Universities and research centres opportunities and limitations

The End



# مقدمه

افزایش توان تولیدی کشور در حوزه محصولات مخابراتی (نرم افزاری - سخت افزاری - سرویس) یک الزام مهم برای رشد صنعت مخابرات است

- اشتغال زایی
- رشد پایدار و متوازن
- افزایش توانمندی فناورانه ملی
- اقتدار ملی
- امنیت پایدار در فضای مجازی

نقش دولت و سیاست گذاری آن در این حوزه بسیار اساسی و مهم است

برخی از کشورهای دنیا، قدم های بسیار خوبی در این راه برداشته اند و تجربه آنها می تواند مورد بهره برداری قرار گیرد



هند



جمعیت: ۱,۳۲ میلیارد نفر  
مساحت: ۳,۲۸ میلیون کیلومتر مربع  
درآمد ناخالص ملی: ۱۰,۴۰۱ تریلیون دلار  
سرانه درآمد ناخالص ملی: ۷۸۰۰ دلار  
شاخص توسعه یافتگی انسانی: ۰,۶  
تعداد کاربران اینترنت: ۴۶۰ میلیون نفر



# دولت در حوزه ارتباطات

وزارت ارتباطات و فناوری اطلاعات متصدی امور حوزه مخابرات در هند بود

در سال ۲۰۱۶ این وزارتخانه به دو وزارت خانه تقسیم شد

- وزارت مخابرات
- دپارتمان پست
- دپارتمان مخابرات راه دور
- وزارت الکترونیک و فناوری اطلاعات

هدف دولت هند تقسیم وزارت، ایجاد تمرکز بیشتر برای پیشبرد اهداف دولت هند در زمینه های زیر بود

- ارتقای توانمندی های ملی در حوزه فناوری اطلاعات و ارتباطات
- پیاده سازی شناسه یکتای ملی
- توسعه اینترنت
- توسعه سرویس های مبتنی بر فناوری اطلاعات
- کاهش شکاف دیجیتال

# Ministry of Communications

## Objectives

- e-Government: Providing e-infrastructure for delivery of e-services
- e-Industry: Promotion of electronics hardware manufacturing and IT-ITeS industry
- e-Innovation / R&D: Implementation of R&D Framework - Enabling creation of Innovation/ R&D Infrastructure in emerging areas of ICT&E/Establishment of mechanism for R&D translation
- e-Learning: Providing support for development of e-Skills and Knowledge network
- e-Security: Securing India's cyber space
- e-Inclusion: Promoting the use of ICT for more inclusive growth
- Internet Governance: Enhancing India's role in Global Platforms of Internet Governance.

# National Policy on Electronics

India's National Policy on Electronics is formulated by the government of India to boost its electronics systems and design manufacturing industry and improve its global market share.

The policy was drafted in 2011 by the Department of Information Technology of the Ministry of Communication and Information Technology.

It is the first of three policies for IT, telecom and electronics released by the government.

# National Policy on Electronics

## NPE Vision:

- To create a competitive electronic design and manufacturing industry to meet the country's needs and serve the international market

## NPE Goals for 2020

- Attract investment in 100 billion US\$
- Reach turn over of 400 billion US\$
- Enhance exports from 8 billion US\$ to 80 billion US\$
- Create an employment of 28 million people
- Grow the chip design and embedded software industry to 55 billion US\$
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# National Policy on Electronics

## NPE Vision:

- To position India as a **global hub for Electronics System Design and Manufacturing (ESDM)** by creating an enabling environment for the industry to compete globally.

## MISSION

- 3.1. Promote domestic manufacturing in the entire value-chain of ESDM, including core components and materials to increase the domestic value addition and reduce dependence on import of electronic goods by focusing on scale, skill and technology.
- 3.2. Strengthen India's linkages with global trade, integrate with global value chains and build facilitative programmes and incentive framework to boost Indian ESDM exports.
- 3.3. Develop capacities for manufacture in all sub-sectors of electronics, including semiconductor wafer fabrication and display fabrication (FAB) facilities and create a vibrant, dynamic and self-reliant Fabless Chip Design ecosystem in the country.
- 3.4. Build a risk-management ecosystem to promote and create a framework for a comprehensive Start-up ecosystem with focus on development of products, key components and technologies based on emerging technological landscapes.
- 3.5. Promote ease of manufacturing by introducing new/ innovative fiscal incentives and augmenting the existing ones for the ESDM Industry.
- 3.6. Ensure effective protection to the domestic ESDM Industry from dumping of electronics goods.
- 3.7. Promote R&D to develop electronic products for the domestic as well as global markets.

# National Policy on Electronics

## OBJECTIVES

- 4.1. Promote domestic manufacturing in the entire value-chain of ESDM for economic development to achieve a turnover of USD 400 Billion by 2025. This shall include targeted production of 1.0 Billion mobile handsets by 2025, valued at USD 190 Billion (approx. Rs.13 lakh crore), including 600 Million mobile handsets valued at USD 110 Billion (approx. Rs.7 lakh crore) for export.
- 4.2. Improve ease-of-doing-business for the ESDM Industry.
- 4.3. Encourage Industry-led R&D and Innovation in all sub-sectors of Electronics.
- 4.4. Support a comprehensive Start-up ecosystem in emerging technology areas such as 5G, IoT, Artificial Intelligence, Machine Learning, etc., and their applications in areas such as Defence, Agriculture, Health, Smart Cities and Automation, with special focus on solving real-life problems.
- 4.5. Provide support for significantly enhancing availability of skilled manpower in the ESDM sector.
- 4.6. Provide support for export led growth, including significantly enhancing economies of scale in electronics manufacturing.

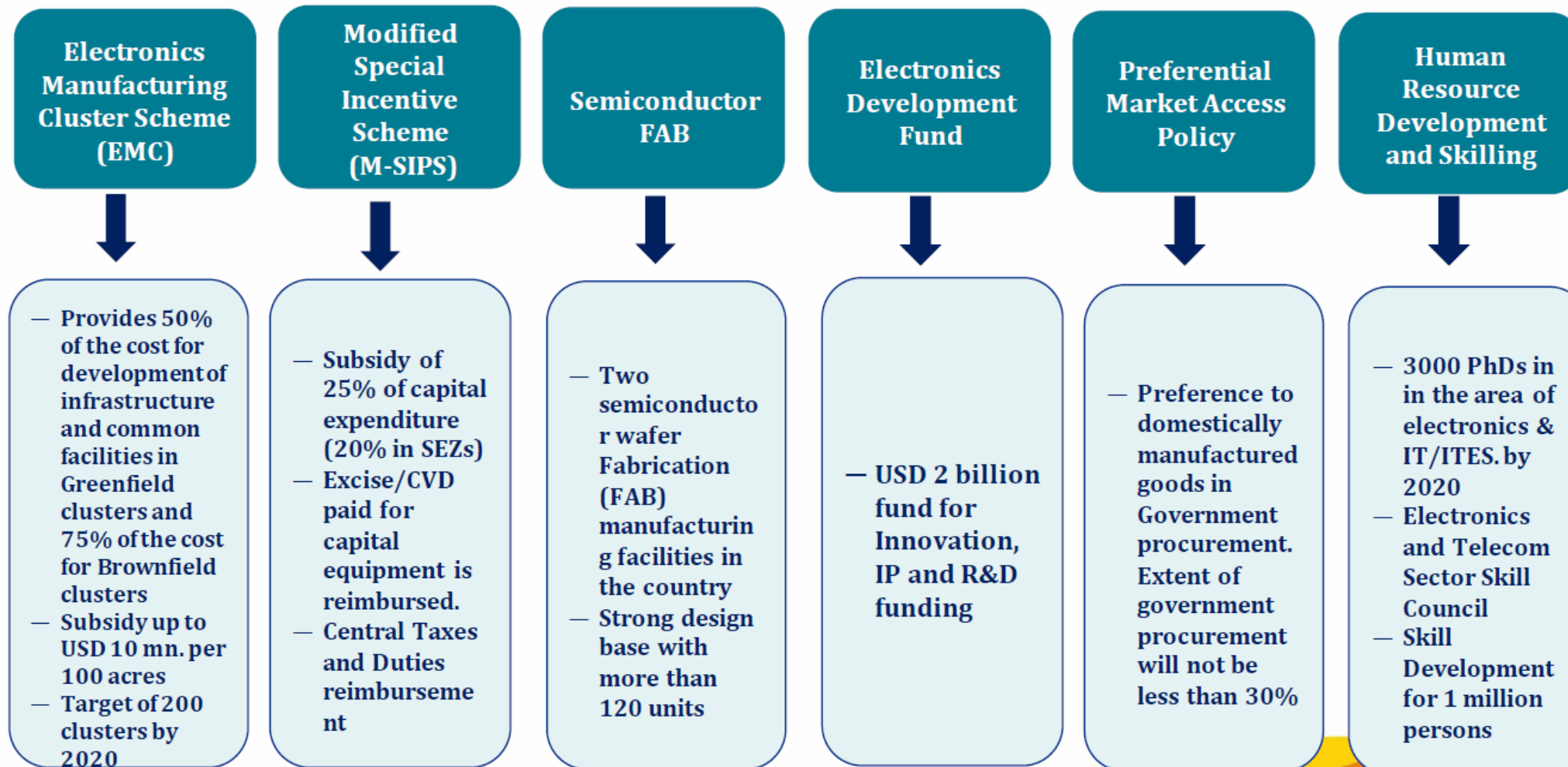
# National Policy on Electronics

## OBJECTIVES

- 4.7. Develop core competencies in all the sub-sectors of Electronics, including inter-alia Electronic components and Semiconductors, Telecommunication equipment, Medical electronics, Defence Electronics, Automotive electronics, Industrial Electronics, Strategic Electronics, etc., and Fabless Chip Design.
- 4.8. Become a global leader in the Electronics Manufacturing Services (EMS) segment by promoting progressively higher value addition in manufacturing of electronic products.
- 4.9. Provide policy support and special package of incentives for highly capital intensive projects.
- 4.10. Drive indigenization in the microchips used by strategic and critical infrastructure sectors viz., Defence, Space, Atomic Energy, Telecom, Aviation, Power, etc., through design and production of such microchips.
- 4.11. Create specialized governance structures within the Government to cater to specific needs of the ESDM sector, in view of fast changes in technology and business models.
- 4.12. Facilitate cost effective loans for setting up and expansion of electronics manufacturing units.
- 4.13. Promote research, innovation and support to the industry in the areas of packaging, interconnects and micro photonics, as a long term measure to counter the problems posed by the continued use of Silicon, like the limit of scaling and dark Silicon.

## National Policy on Electronics 2012 (NPE 12)

Vision 2020: "To create a globally competitive electronics design and manufacturing industry to meet the country's needs and serve the international market"





# Modified Special Incentive Package Scheme (M-SIPS)

Electronics goods import is the third largest import item for the India and it is expected that total electronic imports may cross \$200 bn by 2022 if the demand for electronic goods goes at the present rate

Government launched an incentive scheme in 2012 called Modified Special Incentive Package Scheme (M-SIPS) to encourage investment and production in the electronic goods sector.

The MSIP scheme gives special incentive package to promote large scale manufacturing in the Electronic System Design and Manufacturing (ESDM) sector

Government tries to achieve the goal of 'Net Zero imports' in electronics by 2020

Budget of 1.4 billion US\$ per year for the program

# National Telecom Policy (2012)

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## VISION

- To provide secure, reliable, affordable and high-quality converged telecommunication services anytime, anywhere for an accelerated inclusive socio-economic development

# National Telecom Policy (2012)

## MISSION

- To develop a robust and secure state-of-the-art telecommunication network providing seamless coverage with special focus on rural and remote areas for bridging the digital divide and thereby facilitate socio-economic development.
- To create an inclusive knowledge society through proliferation of affordable and high-quality broadband services across the nation.
- To reposition the mobile device as an instrument of socio-economic empowerment of citizens.
- To make India a global hub for telecom equipment manufacturing and a center for converged communication services.
- To promote Research and Development, Design in cutting edge ICTE technologies, products and services for meeting the infrastructure needs of domestic and global markets with focus on security and green technologies.

# National Telecom Policy (2012)

## OBJECTIVES

- Promote innovation, indigenous R&D and manufacturing to serve domestic and global markets, by increasing skills and competencies.
- Create a corpus to promote indigenous R&D, IPR creation, entrepreneurship, manufacturing, commercialization and deployment of state-of-the-art telecom products and services during the 12th five-year plan period.
- Promote the ecosystem for design, Research and Development, IPR creation, testing, standardization and manufacturing i.e. complete value chain for domestic production of telecommunication equipment to meet Indian telecom sector demand to the extent of 60% and 80% with a minimum value addition of 45% and 65% by the year 2017 and 2020 respectively.

# 'Make in India' initiative

'Make in India' initiative was launched on September 25, 2014 with the objective of

- Facilitating investment,
- Fostering innovation,
- Building best in class manufacturing infrastructure,
- Making it easy to do business
- Enhancing skill development

# Make in India Achievement in ICTE

## Foreign Direct Investment

- The total Foreign Direct Investment (FDI) inflow was USD 160.79 billion between April 2014 and March 2017

## ICTE Manufacturing

- FDI grew 4.4 times in Electronics & IT sector- from \$2.77 billion (2011-14) to \$12.24 billion (2014-17)
- 1.9 trillion of electronics products manufactured indigenously in 2014-15
- 95 proposals worth INR 20,185 crore (2.8 Billion US\$) approved under M-SIPS
- INR 374 crore (52 million US\$) committed for 8 Daughter Funds under Electronic Development Fund
- 42 new Mobile manufacturing units setup employing 47,800 people
- 3 CoE Setup for Internal security, Large Area Flexible Electronics, IoT

# National Digital Communications Policy 2018

## Vision

- To fulfil the information and communication needs of citizens and enterprises by establishment of a ubiquitous, resilient, secure and affordable Digital Communications Infrastructure and Services; and in the process, support India's transition to a digitally empowered economy and society.

# National Digital Communications Policy 2018

## Missions

- In pursuit of accomplishing these objectives by year 2022, the National Digital Communications Policy, 2018 envisages three Missions:
- 1. **Connect India**: Creating Robust Digital Communications Infrastructure
  - To promote Broadband for All as a tool for socio-economic development, while ensuring service quality and environmental sustainability.
- 2. **Propel India**: Enabling Next Generation Technologies and Services through Investments, Innovation and IPR generation
  - To harness the power of emerging digital technologies, including 5G, AI, IoT, Cloud and Big Data to enable provision of future ready products and services; and to catalyse the fourth industrial revolution (Industry 4.0) by promoting Investments, Innovation and IPR.
- 3. **Secure India**: Ensuring Sovereignty, Safety and Security of Digital Communications
  - To secure the interests of citizens and safeguard the digital sovereignty of India with a focus on ensuring individual autonomy and choice, data ownership, privacy and security; while recognizing data as a crucial economic resource.



# National Digital Communications Policy 2018

## 2.4 Promoting Start-ups

- (a) Supporting Start-ups with various fiscal and non-fiscal benefits, including:
  - i. Academic collaborations, permissions for pilots and testing, concessions on imported software, mentoring support, etc.
  - ii. Promoting participation of Start-ups in government procurement
- (b) Reducing the entry barriers for start-ups by reducing the initial cost and compliance burden, especially for new and innovative segments and services
- (c) Prescribing a simple and enabling regulatory framework for application service providers in order to promote innovation in Application Services for Digital Communications

# National Digital Communications Policy 2018

## 2.5 Local Manufacturing and Value Addition

- (a) Maximizing India's contribution to global value chains, by focusing on domestic production, increasing exports and reducing the import burden, by:
  - i. Rationalising taxes, levies and differential duties to incentivize local manufacturing of equipment, networks and devices to the extent of domestic value addition
  - ii. Introducing Phased Manufacturing Program for identified product segments in Digital Communication Technologies
  - iii. Attracting Global OEMs and Generic Component players to setup manufacturing base in India
  - iv. Ensuring the availability of essential background IPR in Fair, Reasonable And Non-Discriminatory (FRAND) terms required for promoting local manufacturing
  - v. Promoting design led manufacturing in India by leveraging indigenous software/ R&D capabilities
  - vi. Incentivizing fab and/or fab-less design and manufacturing of chips and system on a chip (SOC) for network and devices in emerging technologies
  - vii. Attracting global talent from Indian diaspora to create best in class enterprises
- (b) Ensuring strict compliance to Preferential Market Access requirements:
  - ii. Preferring domestic products and services with domestically owned IPR in the procurement by government agencies, especially for the procurement of security related products
  - iii. Incentivizing private operators to buy domestic telecom products

## جمع بندی

دولت هند اقدامات مهمی در جهت افزایش توانمندی های تولیدی کشور انجام داده است  
حوزه الکترونیک، مخابرات و فناوری اطلاعات یکی از حوزه های تمرکز مهم و استراتژیک  
جهت توسعه صنعتی قلمداد شده است  
نتیجه اقدامات دولت هند، افزایش اشتغال، توانمندی ملی و توسعه صنعت مخابرات در این  
کشور بوده است  
اقدامات و سیاست گذاری های دولت هند می تواند مورد مطالعه و بهره برداری سیاست  
گذاران و تصمیم گیران حوزه ارتباطات و فناوری اطلاعات قرار گیرد

تشکر از توجه شما

# دولت در حوزه ارتباطات

## List of organizations contained within "The Ministry of Electronics and Information Technology

- Controller of Certifying Authorities (CCA)
- Cyber Appellate Tribunal (CAT)
- Semiconductor Integrated Circuits Layout-Design Registry
- Indian Computer Emergency Response Team (ICERT)
- IN Registry
- National Informatics Centre (NIC)

## Companies under MeitY

- Media Lab Asia (MLAsia)
- National Informatics Centre Services Incorporated (NICSi) — Public Sector Enterprise under control of National Informatics Centre.
- National Internet Exchange of India (NIXI)
- Digital Locker
- Unique Identification Authority of India (UIDAI)
- CSC e-Governance Services India Limited

## Autonomous Societies of MeitY

- Education and Research in Computer Networking (ERNET)
- Centre for Development of Advanced Computing (C-DAC)
- Centre for Materials for Electronics Technology (C-MET)
- National Institute of Electronics and Information Technology (NIELIT) — Formerly DOEACC Society
- Society for Applied Microwave Electronics Engineering and Research (SAMEER)
- Software Technology Parks of India (STPI)
- Electronics and Computer Software Export Promotion Council (ESC)