November 2022 Edition

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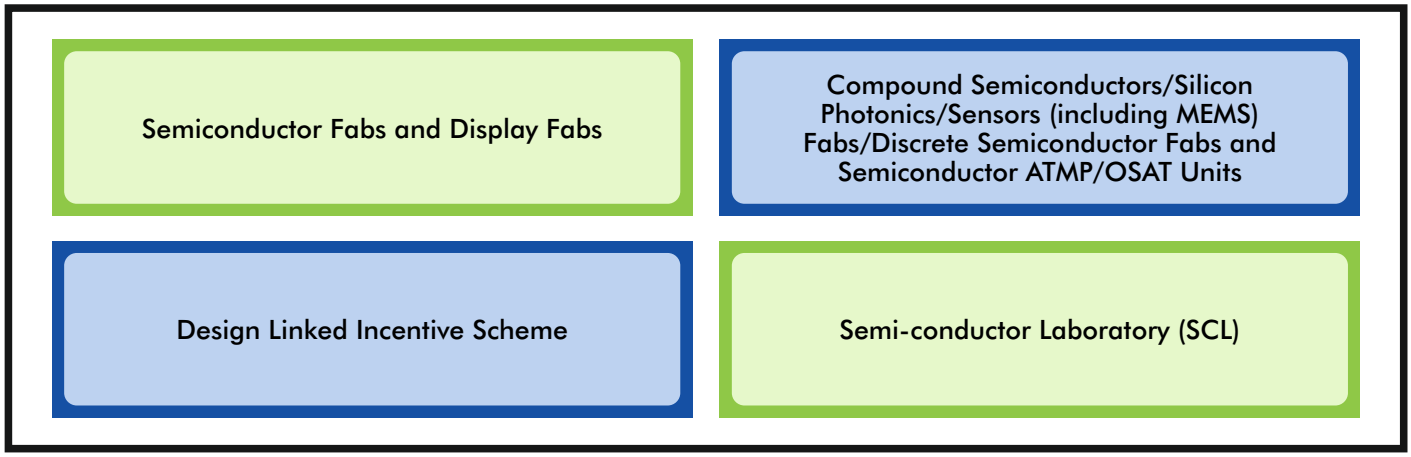
SECTOR SPECIFIC REPORT

(IT & Electronics)

01 | India Semiconductor Mission

Recently to provide a major boost to India Semiconductor Mission (ISM), on 17th October 2022, the Ministry of Electronics & Information Technology started the first Semicon India Future Design Road show with the theme of 'Catalyzing the Next-Generation Semiconductor Design Start-ups' from Gujarat.

These events will help to energize the startups working in the area of Semiconductor Design and innovation to tap the incentive benefits under the Design Linked Scheme of ISM which was launched by the Government of India in 2021. The vision was to establish India as a Global Hub in the domain and emerge as a leader in the Semiconductor design and electronics manufacturing sector by following four broad schemes to facilitate infrastructure growth for the industry and setting up the enabling specialized ecosystem:



ISM functions as a Special Independent Division under Digital India Corporation for building a robust semiconductor and display ecosystem in the country with a comprehensive, coherent and efficient deployment framework for the program in association with the Central ministries, departments, agencies, industry as well as academia.

The mission functions in the advisory matters for the growth of the industry and attracts public, private and global investments for the same. All the government schemes related to the promotion and support of the semiconductor industry such as manufacturing, display fabrication, etc are also implemented through ISM. It has all the necessary powers to effectively achieve the objectives of the mission or as directed by the Ministry of Electronics and Information Technology from time to time.

The mission with Rs 76,000 crore incentive outlay is aimed to attract major investment in this strategically important sector with the setting up of the Semicon city in India at Dholera, Gujarat which will eventually establish India as Asia's hub for 'Electronics & Semiconductor Innovation'. In the last 7 years, the country had seen unprecedented growth in the Electronics sector and touched a record Rs 27,000 crore mark in 2019-20 which was almost zero in 2015-16.

Semiconductors are the building block of Electronics and Information Technology and thus broadening their manufacturing capabilities within the country is critical as well as important. The mission in this regard is going to give the impetus to its growth and help India to expand its digital economy and touch the mark of US$ 1 trillion by 2025-26. For this, the major objectives outlined under the mission are:

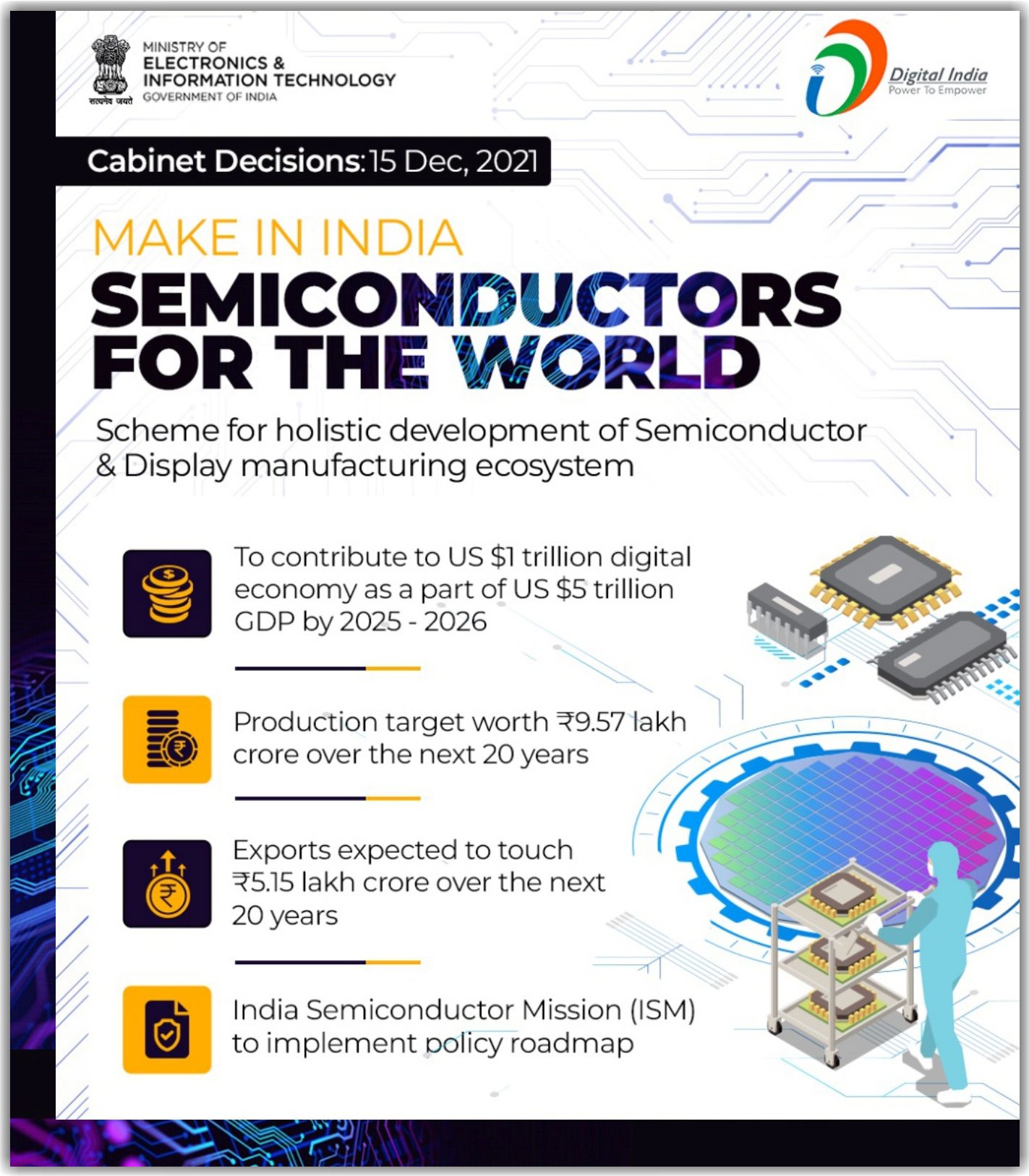
ISM works as a nodal agency to drive financial support in semiconductor display manufacturing and design units while strengthening the ecosystem. To completely envision the objectives of Atmanirbhar Bharat and ISM, India needs to reenergize the growth ofits electronics manufacturing and innovation capabilities with the help of global experts and tap the strength of India's vibrant startup ecosystem to make a global presence.

Today, technology is all around and everyone's lives are revolving around electronic gadgets like smartphones, laptops, etc. The semiconductor is the heart of these electronic devices including various medical equipment. Thus, during the Covid 19 when the global supply chain went on to stand still, the challenges of this industry increased many fold.

As per the estimates, India's domestic consumption of semiconductors is going to cross the US$ 100 billion mark by 2030 and thus to develop a steady and reliable supply chain to address such challenges in the future, India needs to develop its semiconductor industry in a mission mode and get the early bus to reap the optimum benefit.

Thus, to tap the enormous opportunity in the next phase of India's digital transformation with Industry 4.0, the development of semiconductor and display manufacturing is the driving force. India needs to set a big aim to emerge as a key player in the global semiconductor ecosystem to

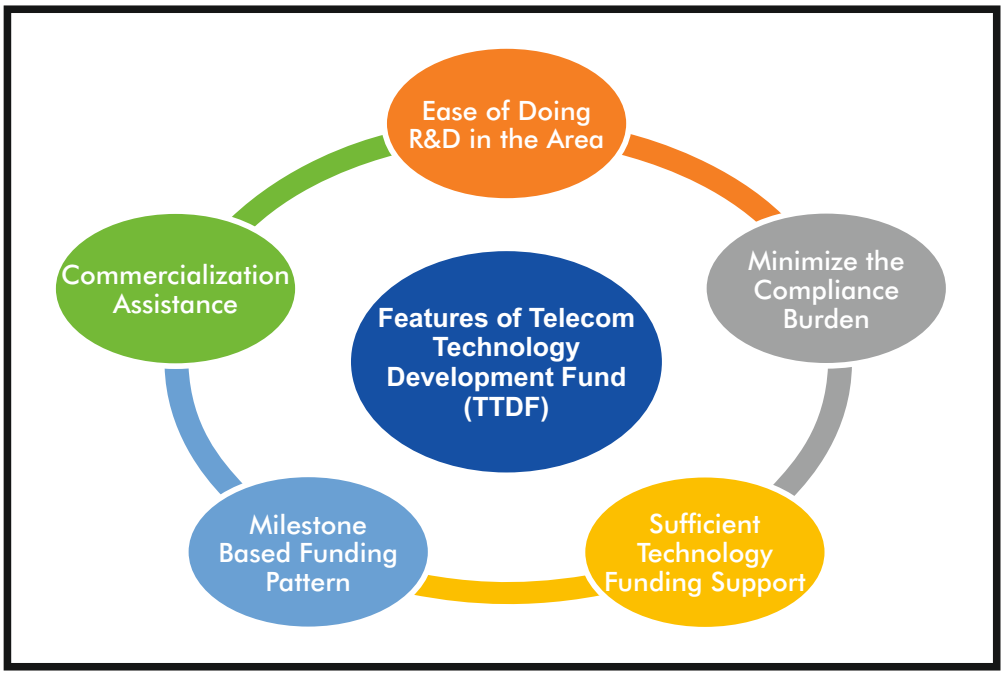
play a critical role in deriving favourable trade policies that can establish India as one of the emerging dominant players in the semiconductor global supply chainsoon with strong policy support and effective implementation mechanism under the ISM.

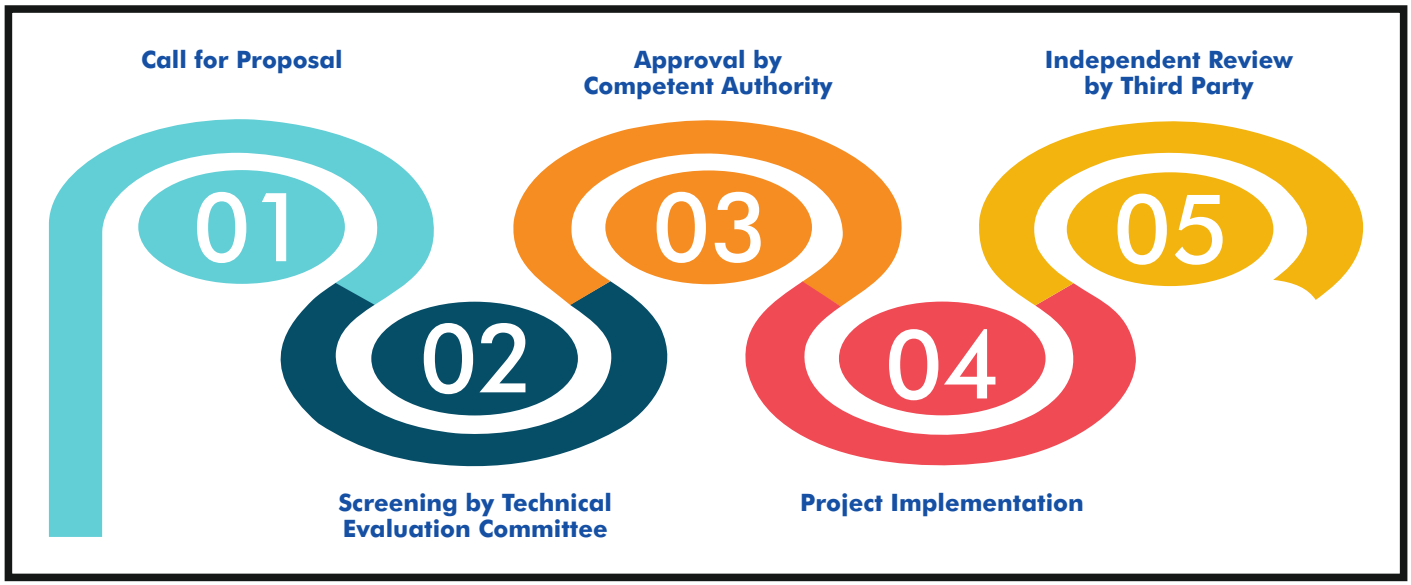


02 | Telecom Technology Development Fund Scheme

The Ministry of Electronics & Information Technology launched the Telecom Technology Development Fund (TTDF) Scheme on 1st October 2022 for funding R&D in the area of rural communication technology applications. This will mark the new beginning of Jan Anusandhaan during the Amrit Kaal of the Indian economy according to the Prime Minister of India. The fund is managed by the Universal Service Obligation Fund (USOF), under the Department of Telecommunications. It is designed to develop the Indian telecom ecosystem and help the stake holders in the following ways:

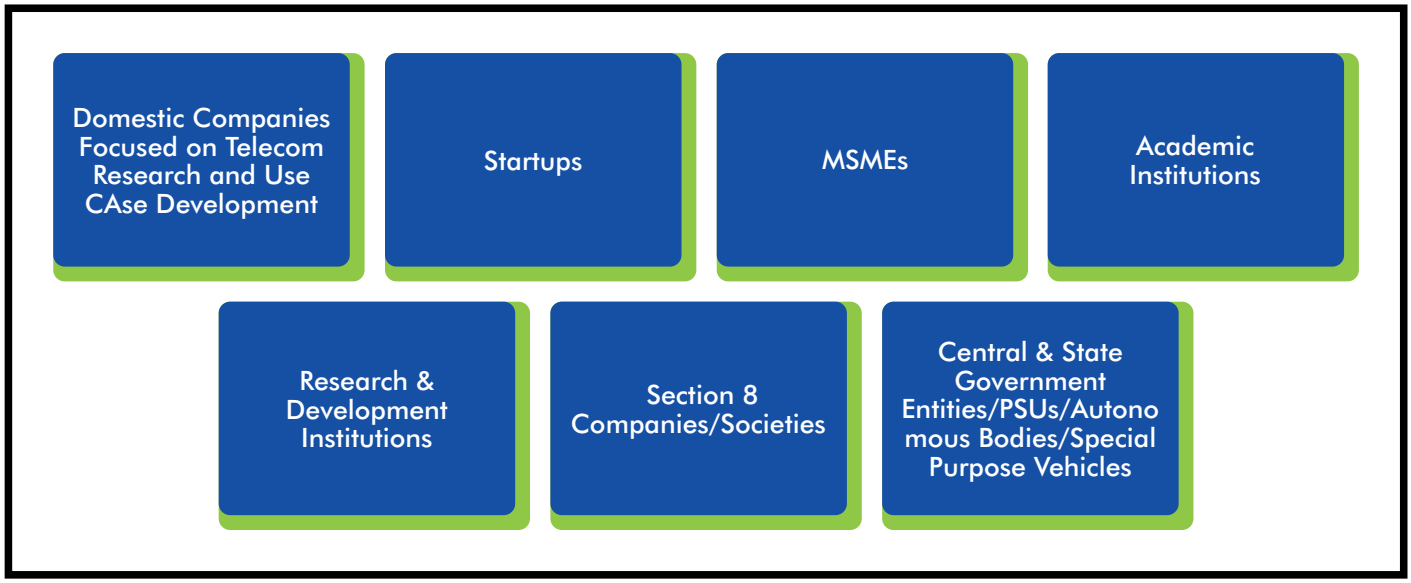
The proposals under the scheme are invited for the duration between 1st October 2022 to 15th November 2022. The grants have been issued through a stepwise implementation mechanism for every proposal that can meet the domestic needs of Indian telecom users and develop indigenous technologies in the area to strengthen the industry.





Source: https://usof.gov.in/ttdf

As per the provisions of this fund, only Indian entities are eligible to receive support under the scheme. For Pilots and use cases, any entity mentioned below can form a partnership inter alia with Central/ State Government entities, PSUs, Government Autonomous Bodies, SPVs, etc or can form a collaborative consortium of all these listed entities to create the vibrant telecom ecosystem in the country:



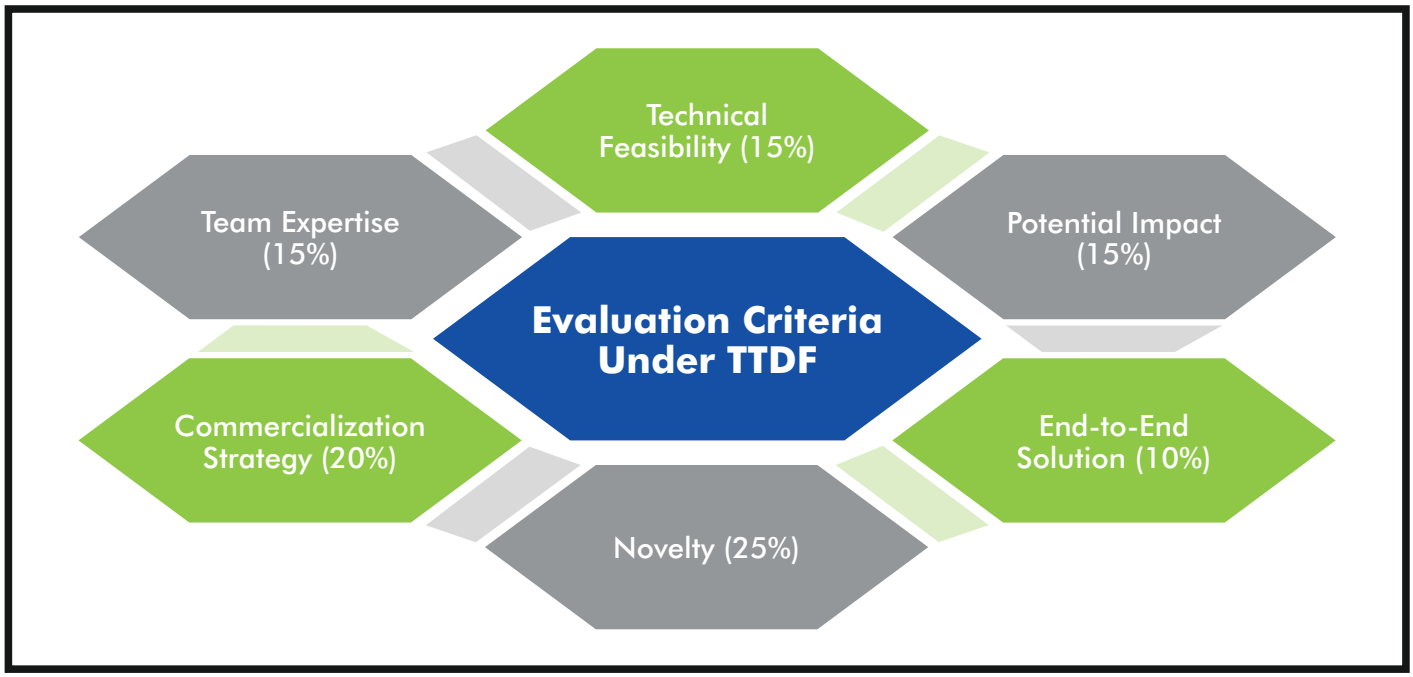
The fund is going to address the digital divide between Urban and Rural India and build synergies among stakeholders such as academia, startups, industry and research institutes to develop telecom technologies for rural and remote areas of the country. It will strengthen technological co-innovation and boost opportunities in the sector while reducing import dependence and increasing export possibilities.

Over time, this will promote the technology ownership for indigenous manufacturing capabilities to fulfill the objectives enshrined under Atmanirbhar Bharat and boost the culture of innovation and Intellectual Property Rights to nurture the telecom sector to meet India's domestic requirements with the following specialized support mechanism:

Source: https://usof.gov.in/web_assets/img/ttdf_guidelines.pdf

Through this, the fund will support the entities to develop a solution for rural-specific communication needs and benefit the rural masses as well as people living in remote areas of the country to take the advantage of the innovation in the sector. It will enable these regions to go online with communication technologies and add colors to their economic as well as social well-being with vibrant and secure digital solutions.

The proposals for funding support under the scheme will be evaluated with a clear focus on cyber security as it is one of the biggest challenges to digital communication and connectivity across the globe. Along with it, it will also consider following specific criteria with distinct weightage to each for indicative evaluation.



The telecom industry is witnessing unmatched growth with a rising subscriber base in India with around 1.17 billion users in 2022 and ranks second largest in the world. The affordable tariffs, vast network availability, expanding coverage with the launch of 5G along with the rising income of users provided outstanding growth to the industry in the last few years, especially after the emergence of the Covid-19 pandemic.

The 100% FDI is allowed in the sector through automatic routes and a well-structured scheme like TTDF for the promotion of Research & Development in the field of green and energy-efficient technology solutions is ready to bring positive change to India's telecom industry. This will also help to meet the communication needs of rural and remote areas of the country with better network management and much safer cyber space to place itself as the leading global telecom player with affordable and robust solutions in the coming years.

03 | Cyber Security Exercise "PowerEx-2022"

One year after the release of the Guideline on Cyber Security in the Power Sector by the Government of India in October 2021, the Indian Computer Response Team (CERT-In) along with Computer Security Incident Response Teams in Power Sector (Power-CSIRTs) conducted the Cyber Security Exercise “PowerEX” on 13th October 2022. The exercise was conducted to 'Recognize, Analyze & Respond to the Cyber Incidents in IT and OT Systems' in the power sector. The theme for the event was 'Defending Cyber Induced Disruption in IT & OT Infrastructure'.

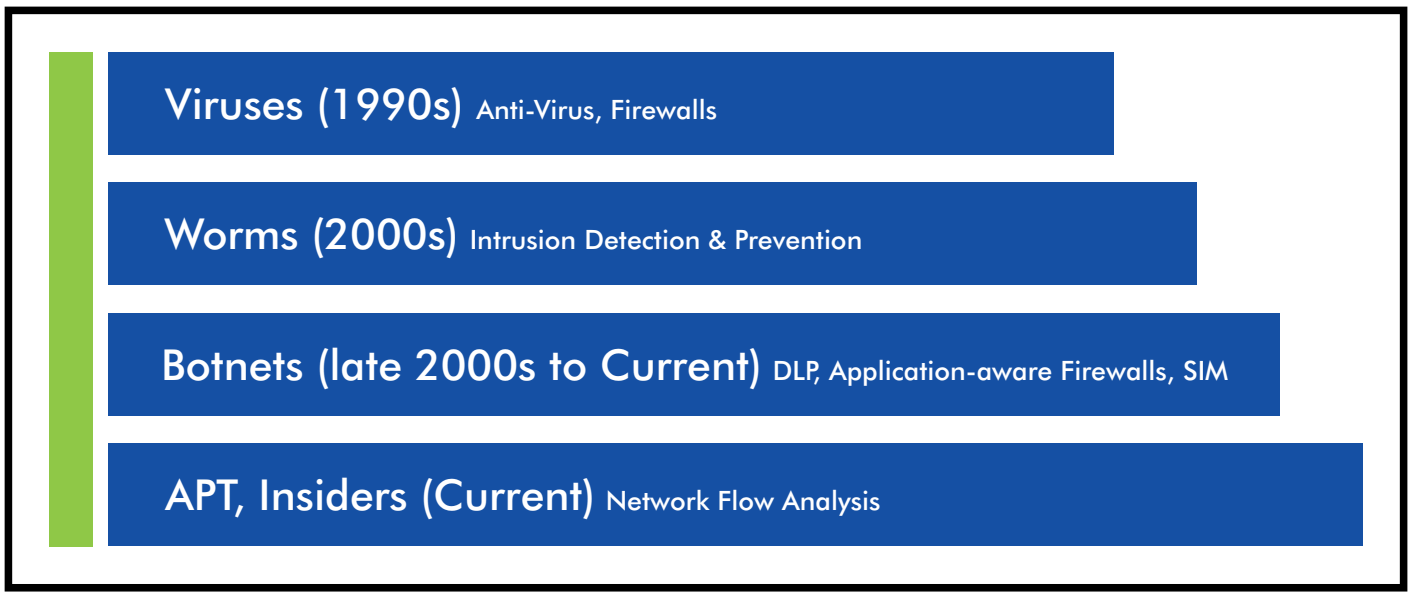
The CERT-In is an Indian Computer Emergency Response Team established in 2004 under the provisions of the Information Technology Act, 2000 under the aegis of the Ministry of Electronics and Information Technology (MeitY). It functions to counter the threats related to cybersecurity such as hacking, cyber theft, phishing, etc by securing the Indian Internet Domain. Some of the major underlined responsibilities of this central nodal agency are:

- Collection, Analysis and Dissemination of Information related to Cyber Incidents
- Issue Forecasting and Alerts for Cyber Security Incidents
- Take Emergency Measures for Such Security Incidents
- Coordinate Response Activities in case of Cyber Incidents
- Issue Guidelines, Advisories, Vulnerability Notes and White Papers related to such Incidents
- Issue Information regarding Security Practices, Procedures, Prevention Measures, Response mechanism and Reporting of Cyber Incidents

Looking at the rising cyber incidents and the need to secure the Power Sector utilities from an unseen cyber threat, the Government of India issued guidelines for Power Sector utilities last year. It was the first such extensive guidelines for the sector in India to keep their functioning intact in a secure cyber ecosystem.

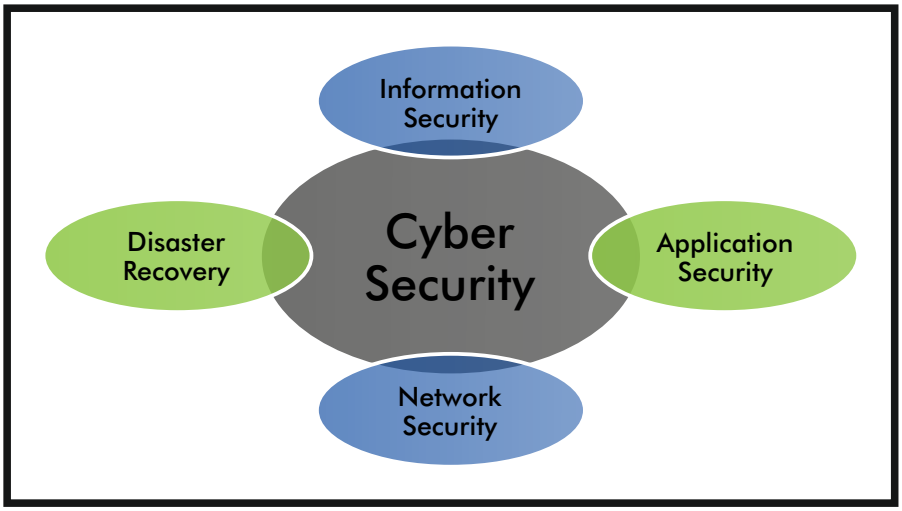
The "PowerEX" exercise has been attended by more than 350 officials from around 193 power sector utilities. It has given exposure to the officials to learn and practice as well as provide timely responses to potential cyber threats. It will help them to adhere to the government notification related to cyber security as this is an important focus for the government across the sectors while growing as a digital economy.

Cyber Security talks about the protection of computers, networks, programs and data from unauthorized access and keeping a check on misuse of critical information or infrastructure with malign intentions. Cyber Space is an ecosystem of internet-connected systems such as computers and infrastructure like smart grids that can be attacked through Domain Named Systems (DNS) to allow remote access through Malware, Viruses, etc. It can also affect the network and make it unusable through Distributed Denial of Services with server and network flooding. These techniques are evolved and made cyber security a more complex domain to tackle over time and pose serious challenges.

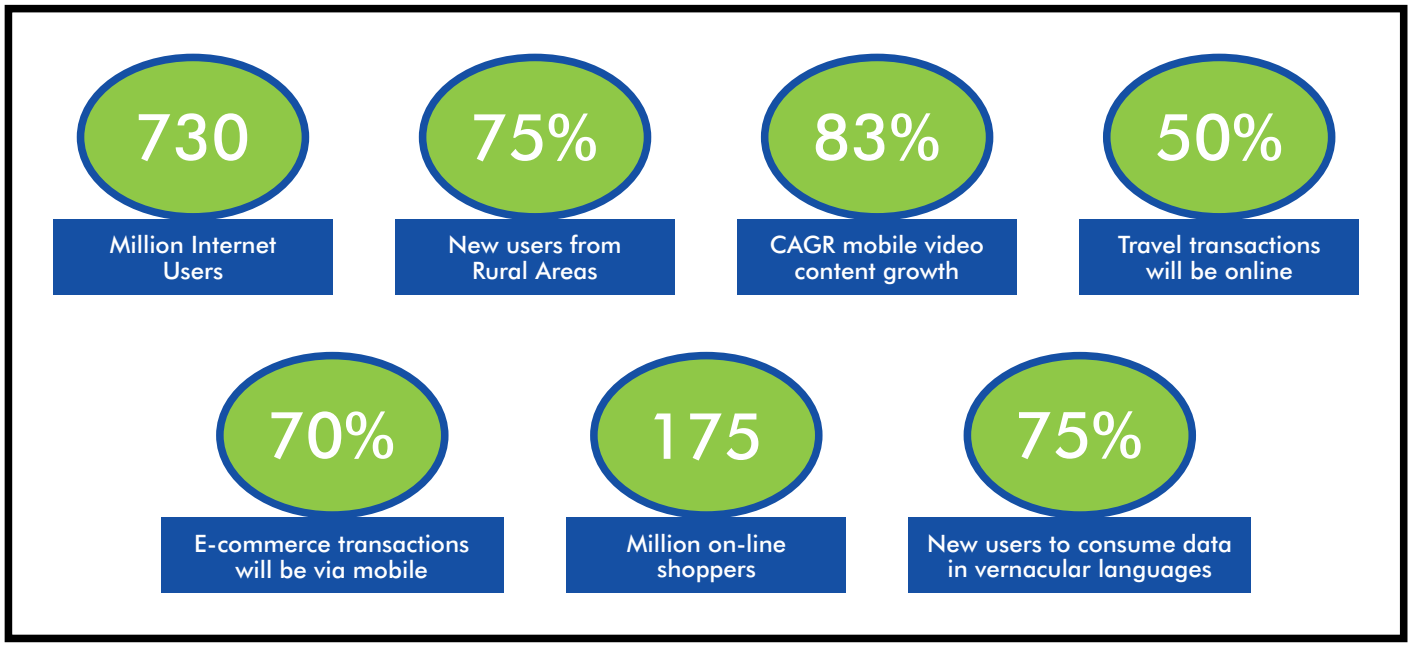


Source: https://www.niti.gov.in/sites/default/files/2019-07/CyberSecurityConclaveAtVigyanBhavanDelhi_1.pdf

Thus, computer resources are as per the Information Technology Act of 2000 defined as Critical Information Infrastructures that can have a major impact on national security, the economy, public health as well as safety if compromised. To address these threats, cyber security covers these major areas and secures the potential targets:

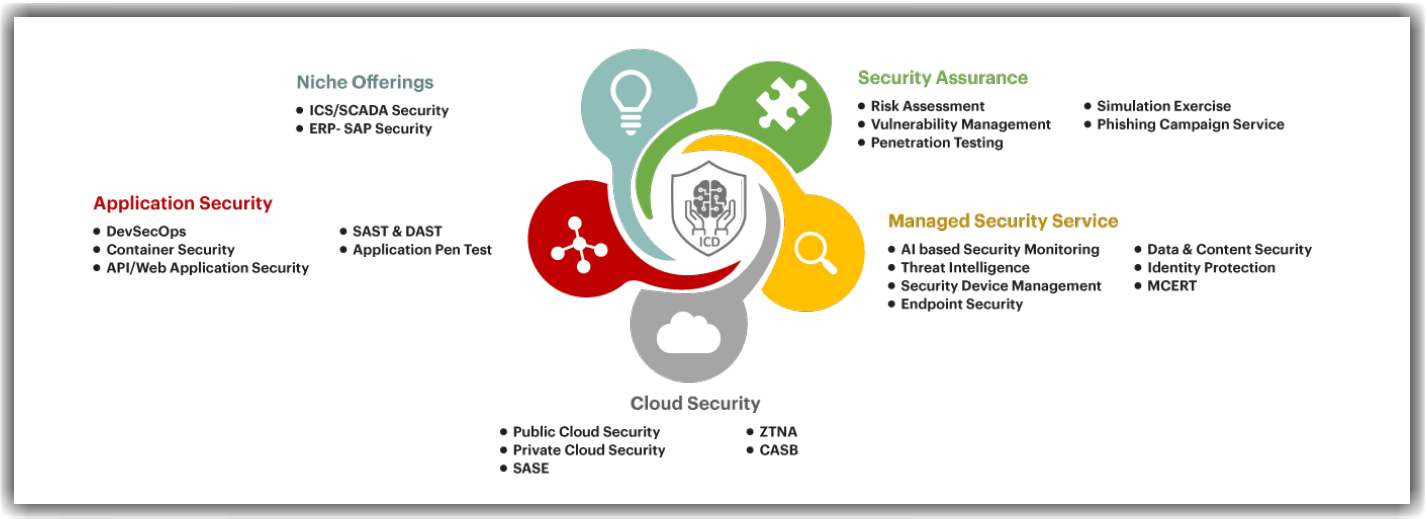


India's digital growth is unprecedented in the current decade and thus it ranked third in the world for the highest number of internet users and is increasing everyday. But this brings the threat of potential cyber-attack incidences with the lack of awareness towards cyber security among the Indian masses. Thus, India also holds the rank among the top five countries in the globe to be the victim of cyber crimes as per the report of "Symantec Corp", an online security firm.



Source: https://www.niti.gov.in/sites/default/files/2019-07/CyberSecurityConclaveAtVigyanBhavanDelhi_1.pdf

In this regard, securing India's Power infrastructure which provides energy to all economic activities and plays a vital role in India's growth is critical. Advanced technologies such as Artificial Intelligence and machine learning with the help of academia and research can show the path forward. Along with this, exercise such as "PowerEX" is also capable of providing solutions to the significant gap of skilled human resources in tackling such incidents in India's power sector and opening the ways for securing India's digital space across other sectors through capacity building.



Resources

1. https://ism.gov.in/about.html
2. https://pib.gov.in/PressReleseDetailm.aspx?PRID=1868283
3. https://pib.gov.in/PressReleasePage.aspx?PRID=1808676
4. https://www.meity.gov.in/esdm/Semiconductors-and-Display-Fab-Ecosystem
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15. https://cea.nic.in/wpcontent/uploads/notification/2021/10/Guidelines_on_Cyber_Security_in_Power_Sector_2021-2.pdf
16. https://www.niti.gov.in/sites/default/files/201907/CyberSecurityConclaveAtVigyanBhavanDelhi_1.pdf
17. https://www.digitalindia.gov.in/ecosystem?page=1

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www.aggrp.in
info@aggrp.in

Contact Details

+91-9810046249 +0124-4235267, 011- 45356553

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