



Message

Telangana State, despite being the newest state in the country, has earned widespread recognition and acclaim for its agility to adopt new and emerging technologies in different spheres of activities. World over, research institutions, private companies, and startups are creating more and more sophisticated technologies that help us use our devices in newer ways and help us navigate everyday life processes in an efficient and superior manner. It is estimated that there are 6.4 Billion number of connected devices in the world today and this is only going to become larger in the days to come. It is not considered science fiction anymore to imagine that as soon as you reach your home your phone has already spoken to your air conditioner, your car to your garage, and your wearable gadget to your home security system.

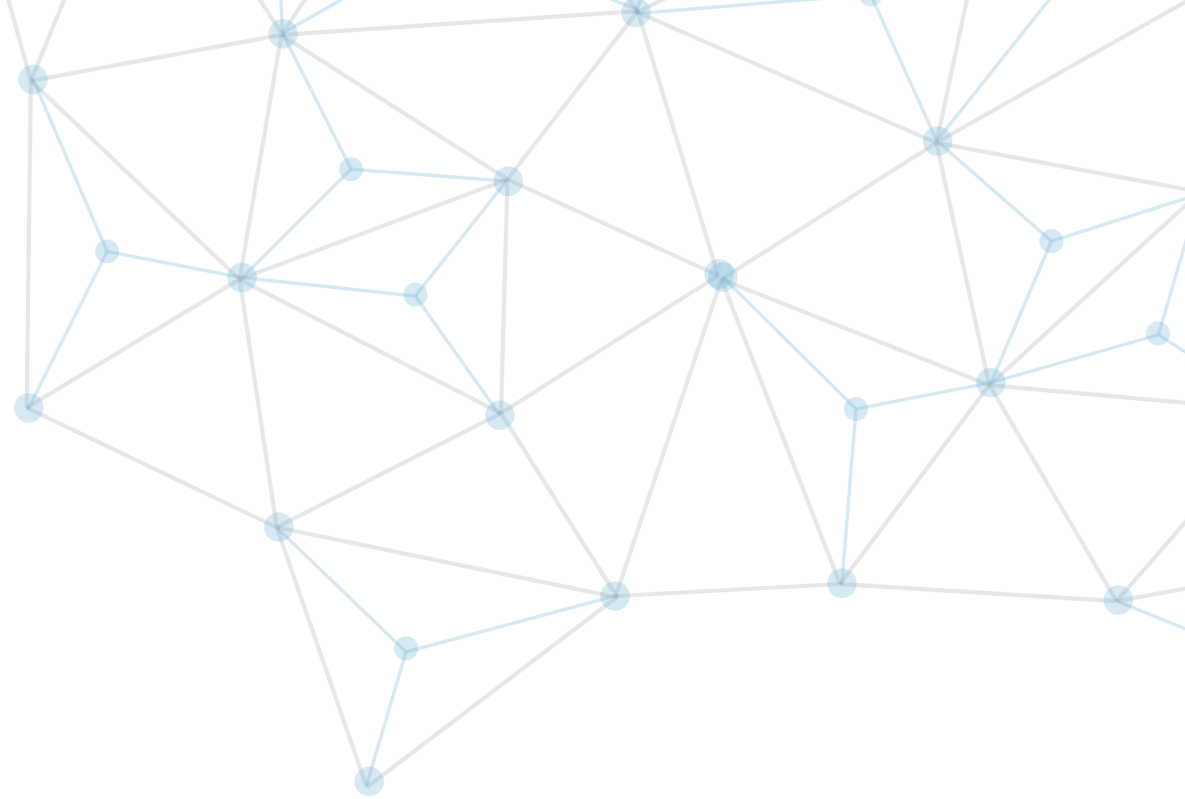
What began to be spoken as Internet of Things is soon going to encompass a new dimension of Internet of Everything. All such path breaking developments also provide a huge opportunity for Governments to ensure that the best of IoT and smart technologies are made available to benefit its citizens. The approach of Telangana Government is to ensure that all such potential developments get translated into concrete action through the means of a facilitating policy. I am very happy to share with you a dedicated policy on IoT, which becomes the 9th of the domain policies under the umbrella of ICT Policy Framework. As with the other 8 policies, the present policy explains the support the government will provide to the private sector including private companies, startups, R&D institutions to manufacture their IoT devices in the state, to develop corresponding algorithms and other software, and to achieve an integration of the hardware and the software. The policy also explains about how the government proposes to set up a comprehensive ecosystem for IoT, and how the government intends to use these technologies through its multiple departments and agencies.



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Vision

- To create an atmosphere conducive for IoT specific businesses and manufacturing units to thrive in the State
- To position Telangana as a test bed for IoT solutions

Objectives

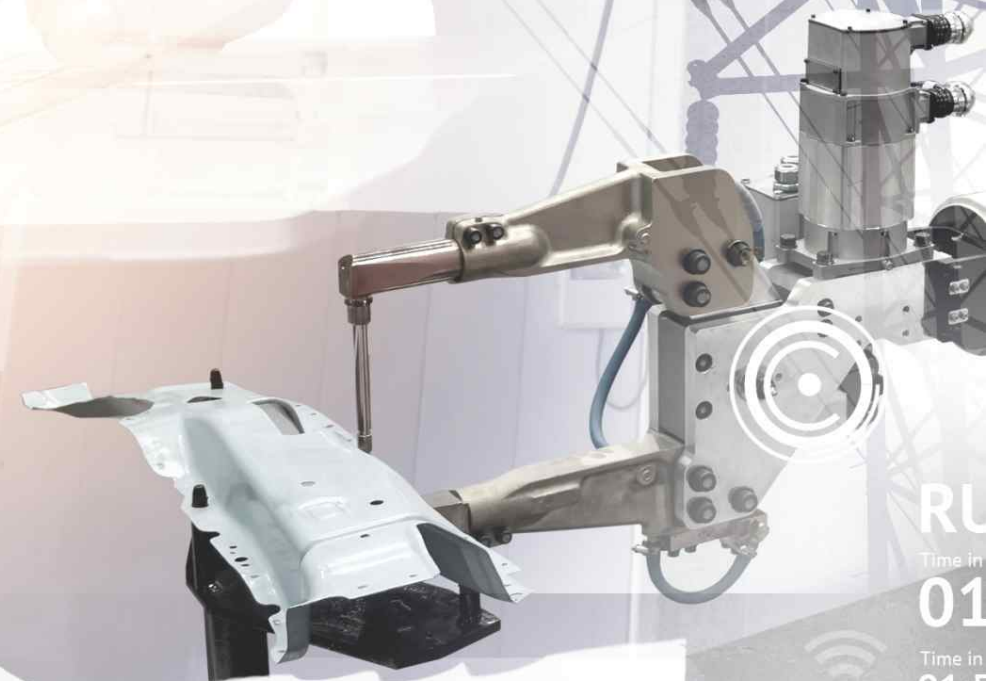
- To attract investments worth 10,000 Cr and generate direct employment to 50,000 people in the next 5 years
- Create 5 zones each in Hyderabad, Warangal, and Sircilla districts for deploying PoCs in the IoT Space

To achieve the objectives set for the State, the Government plans to take a 5-Pillared Approach

1. Develop World Class Infrastructure to promote development of IoT Products
2. Promote Manufacturing and Procurement of IoT Based Solutions
3. Provide Support to Startups in raising Capital
4. Create a ready-to-employ Talent Pool in the State
5. Enter into Partnerships and Tie-Ups to develop Know-how



FOCUS AREAS OF THE STATE WITHIN IOT



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Focus Areas of the State within IoT

The global digital landscape has been at the receiving end of a major transition on the technical, social and economic fronts, thanks to Internet of Things, commonly addressed as IoT. The advent of IoT has led to direct advancements in development of consumer products, automobiles, industry components and sensors, to name a few. Further, the NASSCOM report on IoT in India states that the IoT market in India is poised to reach USD 15 billion by 2020 accounting for a little over 5% of the total global market, which is estimated to reach USD 262 billion.

IoT exhibits a unique promise of not only simplifying implementation of mechanisms in various fields but also transform multiple aspects of the way we live. The Government of Telangana understands the strong potential IoT possesses, and envisions to transform specific priority areas that are linked with the strengths of the state. These areas include, but are not limited to, the following:



Smart City Solutions

The Government of India has embarked on an ambitious plan to develop smart cities across the nation, leading to a massive expansion and adoption of IoT in the country. Further, with the advent of Digital India program, digital initiatives in multiple sectors have been launched with the aim of 'transforming India into a digitally empowered society and knowledge economy'. IoT will be crucial in developing smart cities with the following aspects:

- Smart Parking
- Smart Lighting
- Intelligent Transportation
- Intelligent Logistics Management
- Citizen Safety
- Smart Power Management
- Smart Waste Management
- Smart Environment
- Smart Control Centre
- Connected Home



Medical / Health IoT

Hyderabad is home to several major pharmaceutical companies and R&D centres in the biotechnology space. The city houses several multinational life sciences' giants such as DuPont, AMRI, Sanofi Aventis, Novartis, Dr. Reddy's, Aurobindo Pharma, etc. Also, the innovation drive in Hyderabad is perennially high due to the presence of world renowned academic and research institutes such as IICT and CCMB, and a large number of super-speciality hospitals.

Also, Hyderabad has a dominant position in the Pharma sector as the leader in manufacturing drugs in the country. With about 40% of the total Indian bulk drug production and 50% of the total bulk drug exports happening from the state, Industrial manufacturing, with focus on pharmaceuticals, is one of the key areas that could be transformed by IoT.

In addition to industrial IoT in the Pharma Sector, there has been a trend of people increasingly adopting wearable tech to monitor vitals and some bodily functions. Telangana wishes to ride on this growth and facilitate the development of newer and more advanced technologies in this area. A dedicated park for medical devices is also in the pipeline to enable this.



Smart Logistics

The logistics industry in India, dominated by unorganized players is plagued by low utilization rates primarily due to absence of free information exchange across industry participants. Shared Logistics and Warehousing platforms connecting transportation and warehousing companies in real-time with logistics customers addresses the challenge of empty backhauls and low utilization rates. These logistics platforms by providing real time information enable logistics companies to enhance utilization rates leading to higher profits.

With a larger share of the industry becoming organized, through use of IoT based smart solutions, the Government will benefit from higher tax realization, consumers benefit from lower costs, and the broader society benefits from reduced emissions and traffic congestions.



Agri-Tech

One of the key focus areas under the Digital Telangana program is agriculture. The Government of Telangana is working with ICRISAT to develop a platform for the Agriculture Extension System to extract maximum output from farmers by connecting them with advanced research, weather information system, pest identification system etc. Moving forward, the Government would like to adopt agriculture IoT solutions that will increase farm output and efficiency of the markets.



PILLAR 1

Develop World Class Infrastructure to Promote Development of IoT Products

T-Works

T-Works, a hardware prototyping centre being set up by the Government of Telangana State includes facilities to prototype IoT tech - electronics section, rapid prototyping, metal, woodworking, welding, etc. Although T-Works is a larger entity aimed for hardware product startups as a whole, one of the key focus areas of T-Works is Internet-of-Things. T-Works shall:

- Create test beds for IoT
- Tie-up with corporate and labs for accessing testing tools and other prototyping equipment specific to IoT
- Bring together mentors, experts, industry, makers, funders
- Provide world class prototyping facility to convert idea to prototypes and products
- Work with government and innovators to identify and articulate Smart City related IoT problem and highlight potential solutions

Moreover, T-Works has identified primary gap areas in the Indian hardware ecosystem through research and groundwork. It is estimated that filling these gaps will reduce product development cost and time by over 50% for hardware product developers.

Prototype Infrastructure: Central to T-Works is a world class prototyping infrastructure which will reduce time and cost of converting idea to product.

Streamlining Sourcing: Facilitate procurement of essential electronic components by partnering electronics distributors and supply chain service provider and reduce shipping time and shipping cost.

Early Stage Funding: Provide funding opportunities for startups selected into incubation program through Telangana Innovation Fund, T-Works Electronics Development Fund, and by facilitating crowd funding.

Mentoring and Industry Collaboration: Enable one-to-one mentoring by co-locating industry and first-time entrepreneurs, provide access to business leaders, investors, system architects, collaborate with other startups through T-Hub, connect with Silicon Valley VCs through T-Bridge, work with defence labs and other national and international incubators.

Service Provider Network: Facilitate a vibrant ecosystem of service providers in engineering, design, and business to fill all the competency gaps for startup teams.

Manufacturing Support: T-Works shall facilitate startups to manufacture products by building a network of local and global manufacturers. T-Works shall also build a business case for local manufacturing by developing a pipeline of product ideas. While the local manufacturing ecosystem continues to mature, T-Works shall also establish a bridge with global manufacturing hubs.

PILLAR 2

Promote Manufacturing and Procurement of IoT Based Solutions

Customs Facilitation Cell

Telangana Government understands the challenges in understanding customs rules and importing parts from outside to India. In order to reduce lead times and the costs associated with delays, a customs facilitation cell shall be set up that will handhold companies in the process of international procurement.

Procurement of Components used to Manufacture IoT Devices

The promotions wing of ITE&C Dept. and T-Works shall facilitate electronics component distributors to set up their distribution centres in Telangana, thereby reducing shipping times and cost.

Government Procurement of IoT Products/Services

A formal mechanism through which the ITE&C Dept. streamlines procurement of new-age technologies by other departments shall be established. Preference for such procurement shall be given to players who already have a presence in Telangana. The State is also in the process of formalizing a procurement policy that will enable procurement of relevant new-age technologies from startups on a priority basis.

Earmarked Area for conducting PoCs

The Government of Telangana, in addition to providing necessary regulatory support to enterprises and organizations developing innovative smart technology solutions, shall designate zones across different cities for piloting verified solutions across various focus areas. Five zones each shall be earmarked in the districts of Hyderabad, Warangal, and Sircilla for conducting these PoCs. Relevant permission shall be provided through a single-window on a priority basis for PoCs in these zones. In addition to this, other cities being included in the Smart Cities Mission will also host relevant PoCs.

PILLAR 3

Provide Support to Startups in raising Capital

The Government understands that startups with relevant products might require financial assistance mainly for the following:

1. Product Prototyping
2. Product Marketing
3. Production Scale-up

The Government has identified channels that can be harnessed to address the problem with respect to funding. These channels include the following

- a. In the Innovation Policy 2017, the Government of Telangana has announced that access to securing financial support shall be provided through various channels initiated by T-Hub and T-Works. In addition to providing assistance, through startup cell, to enterprises to apply for various funding opportunities, the Government shall also extend necessary support to startups applying to central government funds. Eligible startups shall be provided with a certifying document from the state government that shall amplify the startup's chances to benefit from central government programs.
- b. In addition to partnering with VCs and other investment entities to create funds to support innovation and entrepreneurship in the IoT space, the Government shall set up a dedicated pavilion for IoT at investors' meets that happen in the state. Further, IoT, as a field, shall be showcased as one of the focus areas of the government at investors' meets and road-shows that the state shall participate in.
- c. Local HNI angel networks - Similar to what T-Hub did, the ITE&C Department, through T-Works, is working towards building a bustling ecosystem around hardware product startups including IoT products, thereby creating a pool of investors and mentors who in turn will play an active role in nurturing the ecosystem. T-Works shall work with startups to help them create pitch decks and connect with local angel investors, hand-holding them through the entire funding process.
- d. Crowd-funding – The ITE&C Department, through T-Works, shall also assist startups in raising money through various crowd-funding sources by helping them create an optimal strategy for their online profile and pitch.

PILLAR 4

Create a ready-to-employ Talent Pool in the State

There's a gap between the number of IoT jobs needed to make digitization a reality and the number of workers in the market with the necessary skills. Public and private organizations need to become producers and consumers of talent.

To meet the Talent requirements, the Government of Telangana shall invest in the following steps and measures:

1. Work with institutions to augment curriculum to include IoT. This effort has already started by engaging with TASK and autonomous institutes by starting faculty training programs
2. Work with IoT Talent consortiums to impart training in the areas of Manufacturing, Security and Data analytics
3. Work with T-Works to provide the hands-on training needed during the TASK instructions
4. Work with Industry to understand latest technological innovations and incorporate them in the TASK training

PILLAR 5

Enter into Partnerships and Tie-ups to Develop Know-how

The Government of Telangana shall forge strategic partnerships and tie-ups with entities engaged in innovative and breakthrough pursuits in the IoT space. The State believes in taking a collaborative approach towards creating a bustling ecosystem, conducive for not only developing unique solutions, but also for providing an ideal environment for testing them.

- a. **Collaborating with private sector for R&D:** In addition to collaborating with colleges for R&D projects, the Government shall outsource relevant R&D projects to corporate incorporated in Telangana.
- b. **IEEE and other industry forums on IoT:**
 1. GoT shall work on university collaborations with established IEEE chapters
 2. GoT shall partner with research labs in India to enable R&D
- c. **IoT hackathons:** Government, through affiliated partners, shall organize hackathons to encourage development of creative solutions to tackle present day problems. Startups incorporated in Telangana shall be provided access to relevant anonymized data to develop solutions that can be scaled into full-scale government contracts post performance reviews.
- d. **Corporate R&D centres set up on a PPP model:** The Government shall set up focused R&D centres on a PPP model to encourage innovative solutions in the focus areas of the Government.
- e. **Attract global mentorship programs:** The government delegations, in addition to participating in business development activities on international visits, shall also identify potential institutions / organizations that specialize in offering IoT specific mentorship programs. Countries such as China, South Korea and the USA are among the leaders with a handful of impact creating mentorship programs. The government shall work towards bringing such programs to the state to develop the IoT ecosystem.
- f. **Collaboration with Foreign Countries:** The Government of Telangana shall actively engage with countries which have established themselves in the field of IoT to adopt and develop best practices. SATREPS, a scheme to support joint research between Japan and foreign countries supported by JICA and JETRO (Japanese trade organizations), is already collaborating with IIT-Hyderabad to invest 100 Cr for research in IoT.



Incentives

Incentives to IoT Device and Hardware Manufacturers

To encourage and foster IOT Hardware manufacturing in the state of Telangana, all the incentives mentioned in the Electronics Policy 2016, will be applicable for IoT device and hardware manufacturers.

To better support IOT hardware manufacturing in the state, further incentives in the areas of Quality Certification, Patent Filing and SGST reimbursement will be made available.

Assistance in Patent Filing: Reimbursement of 50% of the cost of filing patents, subject to a limit of INR 5 Lakhs.

Reimbursement of Costs for Quality Certification: 50% subsidy on the expenses incurred for quality certification limited to INR 5 Lakhs.

Incentives to IoT Software Applications and Analytics Solution Developers

In addition to the common incentives mentioned in the Incentives for Expansion of IT/ITeS Units 2016, all incentives applicable to SME and Mid-Scale Companies according to Incentives for Expansion of IT/ITeS Units 2016 shall be applicable to IoT Software Applications and Analytics Solution Developers.



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