



SenRa™

Accelerating the design and deployment of IoT networks with an immediate return on investment

In India, more than 100 smart cities have been planned, and LoRaWAN® technology is well on its way to becoming mainstream. The Indian government is funding smart cities connected by LoRaWAN networks to improve quality of life, reduce pollution, ensure a stable electricity supply, monitor and manage clean water systems, and generally prepare for continued population growth particularly in already crowded urban areas. The government has also identified the opportunity for massive job creation in support of India's vibrant technology industry. With competition growing, service providers need to move quickly and establish a base of customers with reliable, scalable, cost-effective solutions.

IoT Network Technical and Business Challenges

LoRaWAN service providers require expertise and the right software and equipment to stand up their networks. Every LoRaWAN system has 3 major components: the network server (which receives data packets from devices, duplicates/decodes them, and generates the packets to be returned), the network gateway (which uses an IP interface to route data packets from the devices to the server) and end-devices (sensors which use the LoRaWAN technology for sending packets).



To commercialize those investments, network service providers also require operations support systems (OSS) and business support systems (BSS) to operate a network and sell services. Being able to securely connect, activate

and monitor IoT devices at massive scale, in a multi-tenant and multi-vendor environment, across a broad range of applications is the new standard for network operators. Operators need to be able to manage the OSS/BSS features of the network server, packet core, data streaming, security, performance of the Radio Access Network (RAN) and End Device adaptive data rates (RF tuning). In addition, the IoT application management environment provided by the network operator must efficiently enable gateway deployment and provide scalable, secure, end-device onboarding, application service provisioning and visualization tools.

Innovation Opportunities

India is the global leader in IoT with over 40% market share. According to several analyst firms' predictions, the 2020-2025 CAGR will average 55%. The lack of high-speed wireless data connectivity in the country (particularly in rural areas) has been a challenge and at the same time a rationale for investing in LoRaWAN networks.

Over a single LoRaWAN network, application and solution providers can very quickly roll out high value industry solutions that save the government, enterprises and consumers money by automating the management of complex connected systems. Many of the systems will change people's lives in India, with a more stable infrastructure, electrical power, clean and controlled water supplies, and dozens more applications. All can run on a LoRaWAN network, consuming less battery life and doing so with greater performance and less cost than cellular and Wi-Fi alternatives.

Senet and SenRa

Since launching LoRaWAN connectivity services in India's National Capital Region (NCR) in May 2017, SenRa has expanded its network operation to over 70 cities across the country. Paramount to SenRa's growth has been the time-to-market advantages offered by Senet's Managed Network Services for IoT (MNSi™), reducing a typical 18 - 24 month network rollout to an average of 90 days. This ability to rapidly roll out network coverage has allowed SenRa to focus on building strategic relationships with leading companies and across vertical markets.

Beyond its growth throughout India, SenRa is utilizing Senet's MNSi platform to expand its network deployments globally. SenRa has deployed or is in the process of deploying LoRaWAN networks in the Middle East, Southeast Asia and Africa.

In support of SenRa's global growth strategies, the companies are collaborating closely to fulfill end user requirements for carrier-grade LoRaWAN network services, certified devices and application adoption through collaborative device testing, partner ecosystem development and co-marketing initiatives.



Breakthrough Solutions:








India's fastest growing LoRaWAN network operator, SenRa is supporting several initiatives that address environmental and sustainability issues, including collaborating with cities across India to enable citizens with the ability to make better-informed decisions, improve quality of life, and create a more sustainable planet.

Specific solutions include:

-  **CleanBin™**
(Smart Waste Management)
-  **uPark™**
(Smart Parking Enforcement)
-  **uFind™**
(Smart Tracking)
-  **uFreeze™**
(Smart Temperature Monitoring)
-  **uBeam™**
(Smart Lighting Management)

Proven ROI:

SenRa Leveraging Senet's Operations Platform

-  Successfully deployed LoRaWAN network for India's largest smart water metering project in Pimpri-Chinchwad Smart City connecting 10,000 AMI water meters across the city.
-  Successfully deployed LoRaWAN network in several cities across India connecting 8,800 Smart Gas Meters in residential high rises and communities.
-  Successfully deployed India's first LoRaWAN enabled smart electricity meters at IIIT Hyderabad in support of a smart campus initiative.
-  Collaborated with IIT Mumbai as the LoRaWAN operator in support of their Centre of Excellence lab where they will be developing low cost LoRaWAN ultrasonic water meters on behalf of the Government of India.
-  Provided LoRaWAN coverage in 74 cities across India connecting over 100 million people.
-  Successfully deployed India's first LoRaWAN® smart parking enforcement solution in Amritsar Smart City.
-  Successfully conducted a wildlife conservation POC tracking Tigers at Pench National Park.

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“Partnering with Senet has enabled us to become a leading IoT network operator in India. Hundreds of thousands of devices are connected or being connected to our network and it is all thanks to Senet's reliable services and support.”

– Ali Hosseini,
Chief Executive Officer, SenRa

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Features and Tools Designed for Commercial Networks



Configuration / Provisioning



Health, Status & Performance



Network, Applications & End Devices



Alerting, Escalation & Ticketing



Network Planning & Expansion Suite of Tools



Senet develops cloud-based software and services used by Network Operators, Application Developers, and System Integrators for the on-demand deployment of Internet of Things (IoT) networks. In addition to industrial and commercial applications, Senet has designed smart meter networks for many municipal water utility districts across the United States, representing millions of households. With a multi-year head start over competing Low Power Wide Area Network technologies, Senet offers technology in over eighty countries and owns and operates the largest publicly available LoRaWAN network in North America. Our disruptive go-to-market models and critical technical advantages have helped us become a leading connectivity provider with recognized expertise in building and operating global IoT networks.



The LoRa Alliance® is an open, nonprofit association that has become one of the largest and fastest-growing alliances in the technology sector since its inception in 2015. Its members collaborate closely and share expertise to develop and promote the LoRaWAN® standard, which is the de facto global standard for secure, carrier-grade IoT LPWAN connectivity. LoRaWAN has the technical flexibility to address a broad range of IoT applications, both static and mobile, and a robust LoRaWAN Certification program to guarantee that devices perform as specified. The LoRaWAN standard has been deployed by more than 120 major mobile network operators globally, and connectivity is available in more than 140 countries, with continual expansion.

For More Information about Senet and our solution partners, visit www.senetco.com or call +1 877-807-5755.

