Transforming Homes with NexGen STB
(Set Top Box)

Enabling Additional Revenue Streams for Cable Providers

Table of Contents

Abstract

Are "Smart Homes" really smart enough to cater the current needs and upcoming requirements of Safe, Secured and Smarter homes, also considering the anticipated huge volumes and support ecosystem required for the same. We are experiencing a new era of post COVID-19 lifestyle, were time spent at home has increased drastically. Considering this demand, who is anchoring the needs and providing a consolidated offering with a robust ecosystem. Can we monetize and enhance experience with minimal upgrades of existing ecosystem?

Cable, Broadband and Internet providers should anticipate this need and provide a one stop shop for Devices/Gateway, Platform and solutions with a single pane window user experience supported by a strong field support ecosystem. This paper will provide strategy to monetize the existing ecosystem and enhance the user experience and expectations with a NexGen STB introduction.

Key Takeaways

1. Impact analysis of post COVID-19 era on "Smart Homes"
2. Current and upcoming smart home needs
3. How NexGen STB will be a game changer in enabling packaged Smart home offering with enhanced user experience and create customer stickiness with additional revenues.
4. Proposed roadmap and execution methodology

Introduction

Statistics show that an average human spends 65% of the time at home partaking in different activities, including sleeping, eating, watching TV, gardening, etc. Post Covid-19, Work-From-Home has become the new normal, which pushes the bar higher for the average time spent at home.

How can Cable Network players extend their services with an approach that will unlock additional revenue streams? We will also scope out ways to improvise, upgrade, and create a robust strategy in the Smart Home Vertical to create a better customer experience.

Instead of reinventing the wheel, we should leverage and enhance the existing footprint in the form of STBs (Set-Top Box) and address the new norm. Comprehensive reengineering is required to develop/upgrade the NexGen STBs for Home. We attempt to answer the following questions.

- **How has Covid-19 changed the Smart-Home definition?**

- **How can Cable Providers address this demand and opportunity with a monetizing approach?**
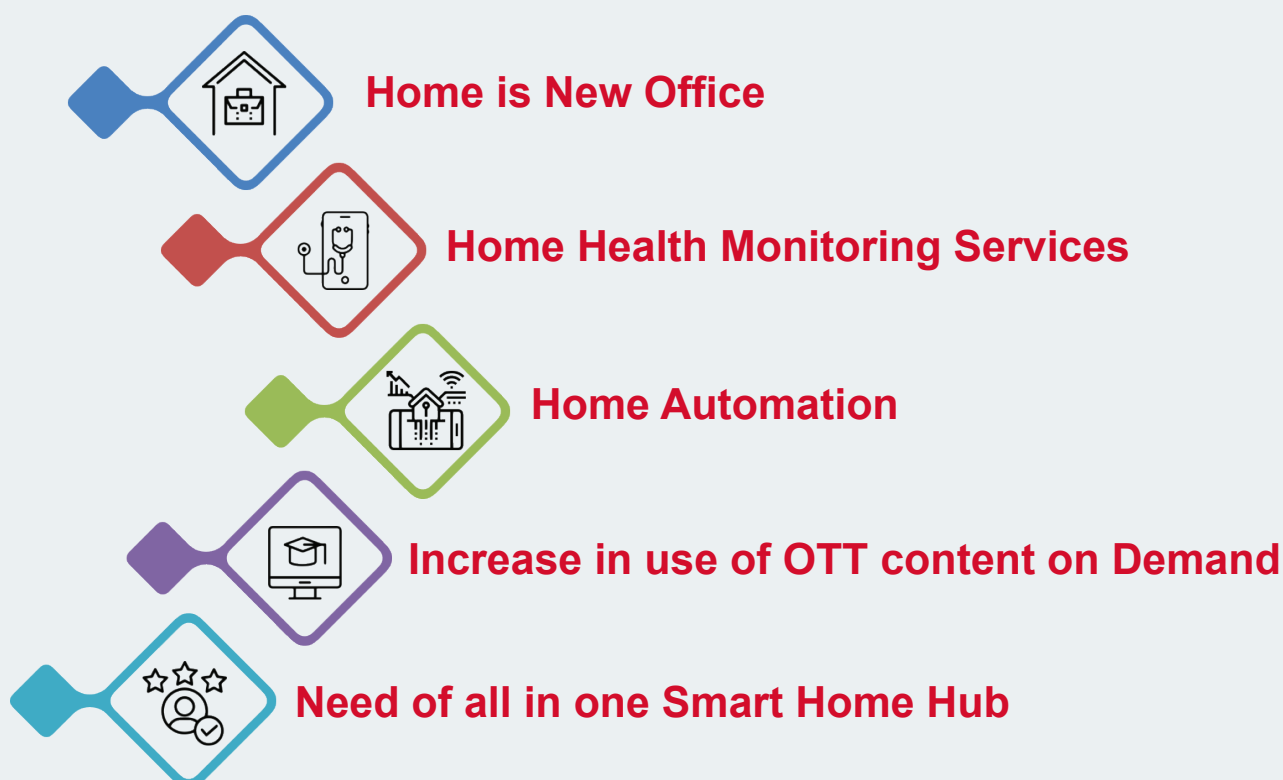
- **What is the business case?**

COVID-19 Impact on Cable Market

COVID-19 has put an incredible strain on the world economy and is effectively a stress test on a company's ability to cope with extreme shocks and the ability to pivot. Many will not survive this initial phase, and almost all others will suffer a significant drop in revenues.

The Cable market has equally faced the heat, but the good news is that they can turn it around by leveraging additional services that fit the need and generate new revenue streams. IoT helps Cable providers with possible leavers, accelerate their offerings and services with growing demand and need.

The New Normal

Global quarantines due to the COVID-19 pandemic have changed the perception of smart homes. It's beyond the basic expectation of having high broadband internet, sensors, appliances, and devices controlled distantly from any internet-connected devices.

Home is New Office

Home Health Monitoring Services

Home Automation

Increase in use of OTT content on Demand

Need of all in one Smart Home Hub

Besides basic smart home needs, huge demand will be seen in the new norm for other services like work from home, active health monitoring, high-quality media and interactive voice bots etc. We are currently at the inflection point where smart homes are so attractive to the wider public that they are becoming a mass-market phenomenon.

"What if" NexGen STB Can Provide an All-in-one Solution for Smart Homes?

Cable providers should approach this opportunity to enhance their capability in the existing footprint by creating a new revenue stream with a monetizing approach. "What if" we enhance STB's capability (Set-Top Box) to address new smart home needs and position it as the smart home hub for entire home automation? Anticipating such services' needs trigger a call for a robust back-end network adhering to the bandwidth and edge gateway requirement.

What If?
STB acts as a Voice BOT and recognize Cough and Sneexing patterns with possible illness suggestions

What If?
STB is your smart home hub accessed from your smart TV

What If?
STB is capable of latching to the variable device seamless from Outdoor to Indoor and tune your home as per your body condition/latest activity

What If?
STB become your Health Monitoring system integrated to Smart Home and behave as Emergency Assistence BOT

What If?
VOD delivers 4K video with 100% SLA match without compromising on QOS and decreasing load on Core

What If?
The video surveillance feed is processed at edge and trigger the alert rules with low latency by optmizing the load on core network

NexGen STB - Addressing "The New Normal" With A Centralized Ecosystem

NexGen STB should be the centralized ecosystem that controls every smart home need and become the interface to the cloud platform for consumer access. The following are expected from a NexGen STB:
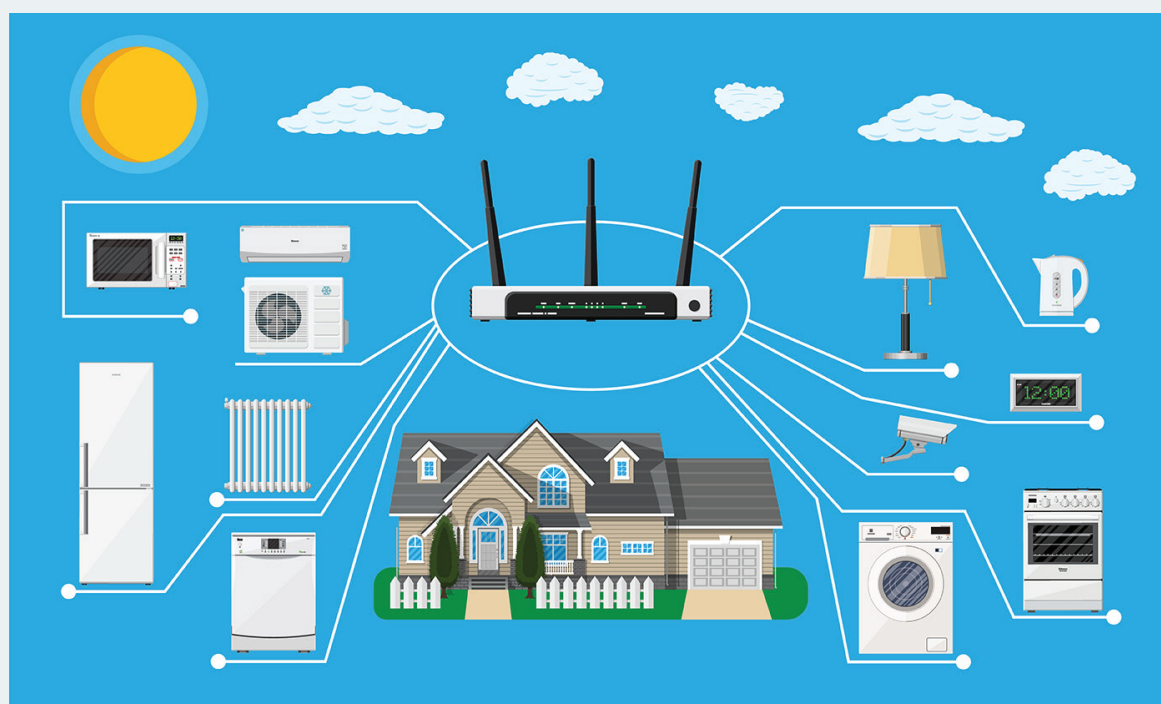
- Broadband Gateway
- OTT Gateway
- Edge Network Gateway
- Smart Home Automation Hub
- Smart Speaker
- Home Command and Control Center
- Smart Security & Surveillance GW
- Interface to PaaS
- Edge Cache/P2P Hub

Target Use Cases That Will Help Describe the Eco-System

While working hours are not confined to the regular 9-5, connectivity from home and remote work is a critical enabler of business in current situations. Information management and sharing is facilitated now more than ever with software instead of file cabinets. We can communicate and work almost anywhere with little need to return to the office before completing the task. The Smart workstation as a service in IoT enabled STB can be used to launch apps, send requests to web servers on the internet, enable set-top box users to upload files and send emails.

It can also transform traditional desktop operations, increase consumer productivity, improve quality, and collect and visualize real-time data conveniently at home. Thus, multiplying productivity and time management by integrating new hardware and software additions in the current set-top boxes design.

• Smart Workstation as a Service

NexGen STB with integrated features like intrusion detection, emergency assessment, sending automatic instructions, and monitoring native occupants. This service can be backed by an insurance company package, which creates a collaborative business model.

• Smart Surveillance as a Service

The pandemic is not only calling for social distancing but also remote health monitoring and real-time updates of patients with family members and their doctors. We can achieve this by integrating smart health wearables with NexGen STB having voice assistance and connectivity capabilities to provide emergency assistance. Complying with social distancing norms and continuous monitoring and updates of patients at the same time is required.

Without increasing the load on healthcare facilities, we can do it at ease with our smart home devices. For example, set-top boxes with added features such as an IoT enabled sensing camera, motion and height detector, including AI capabilities to sense and raise alert to associated healthcare services.

• Smart Health Monitoring as a Service
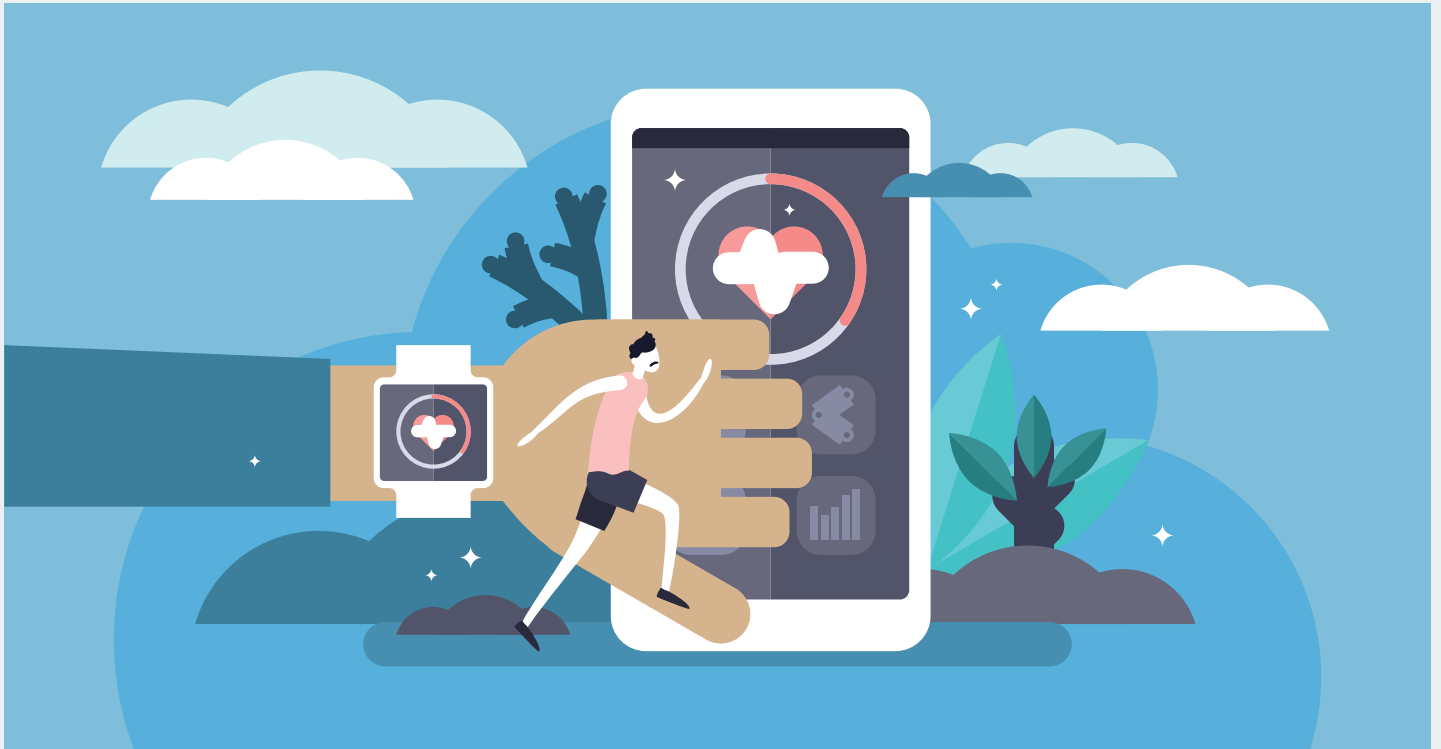
Streaming Video on Demand (VOD) technology on broadband and 5G Edge gateway supported users can enjoy high-quality videos without dealing with the inconveniences associated with video rental stores, mail-order rentals, Pay-per-View.


It works over any broadband IP network, through Wi-Fi via edge gateways to deliver on-demand DVD and Ultra HD quality videos to Televisions over the internet. Simply plug in the NexGen STB to the IP network and Home Theatre system and discover the full functionality of IPTV in the Set-top box.

Workplaces and homes are transitioning to modern connected environments that are aware of their occupant's needs. These smart management systems can offer seamless connectivity, personalized experiences with benefits that include connected appliance, motion-sensing lights, ACs and fans, fire alarms, hazard, and emergency alerts.

Addressing all of these needs with Nexgen STB connected to IoT platforms will optimize energy consumption, enhance user experience, and embed smart living into any generic lifestyle.

• Smart Building Management System
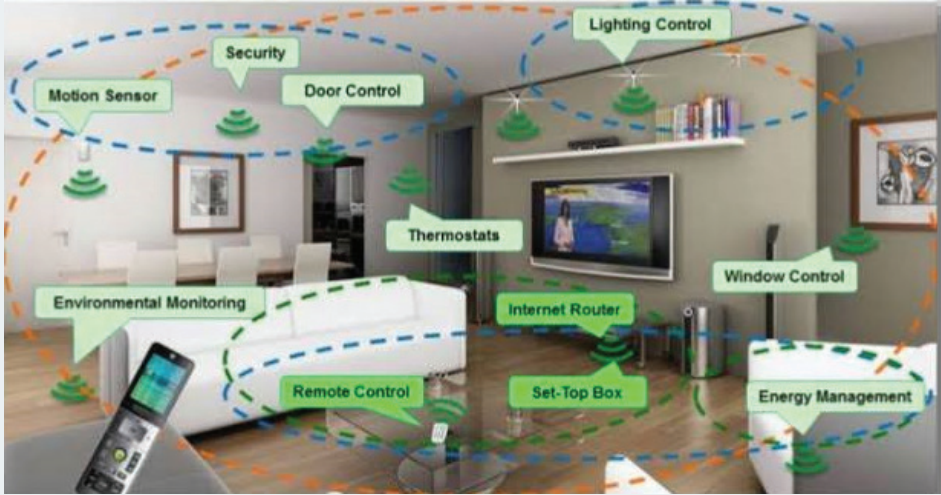
Laying Roadmap for NexGen STB

All we have to do is leverage the cable provider's existing customer base and complement it with value-added services. The need of the hour is to reengineer the dynamics of Set-Top Box. A lot can be done with the single STB that acts like a Smart Home hub, be it a Voice Bot, or a Smart Home Surveillance Monitor, or a Home Entertainment System, or Small cell.

This process can create a broader scope of offerings with the existing STB upgradation. Also, a custom-designed package can be developed based on the demand.
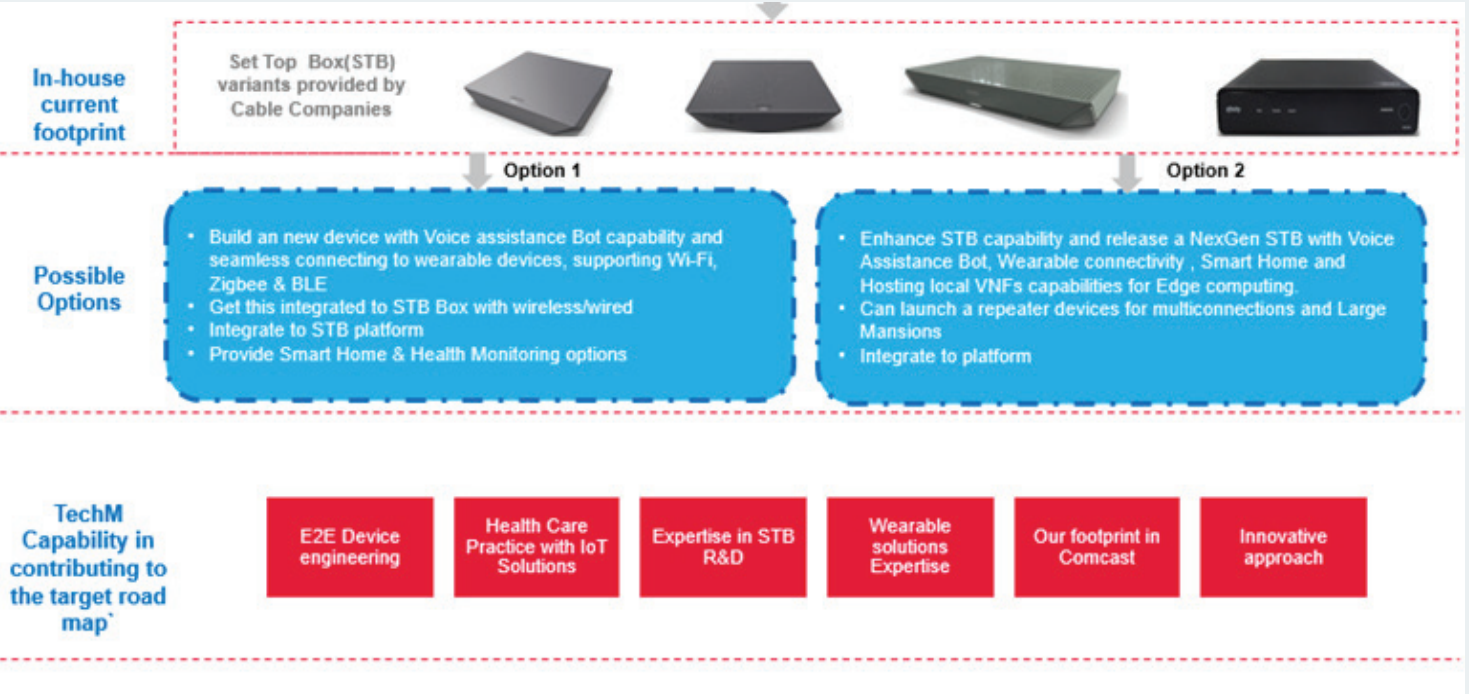
Tech Mahindra Key Offerings for Cable Providers to Orchestrate the Journey

As IoT is a critical part of our lifestyles, vulnerabilities will come into play, leading to security threats. At Tech Mahindra, we offer an end to end security certification for IoT Solutions as a part of the value chain, which will bind different partners in a single security wrapper complimenting individual security mechanisms.

With multiple players such as sensors, GW, Network providers, platforms, and applications that need a complex integration between parties, this ecosystem should also adhere to the local regulatory policies. We are well-positioned in strategic locations to complement the required ask with our vast experience across Geos and our Device Testing Labs.
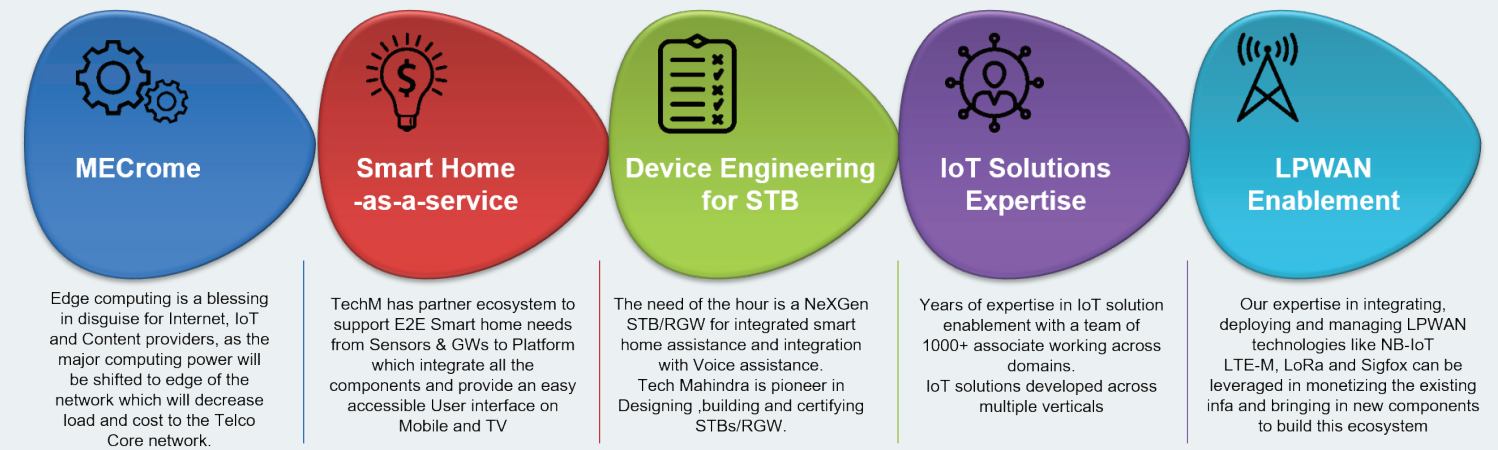
MECrome	Smart Home -as-a-service	Device Engineering for STB	IoT Solutions Expertise	LPWAN Enablement
Edge computing is a blessing in disguise for Internet, IoT and Content providers, as the major computing power will be shifted to edge of the network which will decrease load and cost to the Telco Core network.	TechM has partner ecosystem to support E2E Smart home needs from Sensors & GWs to Platform which integrate all the components and provide an easy accessible User interface on Mobile and TV	The need of the hour is a NeXGen STB/RGW for integrated smart home assistance and integration with Voice assistance. Tech Mahindra is pioneer in Designing ,building and certifying STBs/RGW.	Years of expertise in IoT solution enablement with a team of 1000+ associate working across domains. IoT solutions developed across multiple verticals	Our expertise in integrating, deploying and managing LPWAN technologies like NB-IoT LTE-M, LoRa and Sigfox can be leveraged in monetizing the existing infa and bringing in new components to build this ecosystem

ADVANTAGES

✓ Decrease in Bandwidth utilization thereby reducing NW chocking ✓ Low Latency for Critical IOT solutions ✓ Increased Security @ the edge ✓ Enabling Next Gen technologies; AR/VR, High quality Video broadcast	✓ Industry leading partners ✓ Quick time customization ✓ One stop solution shop for all Smart home needs with device vendor ecosystem covered	✓ Expertise in VNF creation for RGWs/vCPEs ✓ Certifying partner for to Voice assist bots ✓ Strategic tie-ups with Global HW OEMs ✓ Licensed Test bed and simulators for E2E testing.	✓ Leverage TechM / partner solutions on specific platforms ✓ Leverage Accelerators build on industry leading platforms	✓ Tried and tested partner ecosystem for devices , access and core network elements. ✓ Multiple POCs in NB-IoT and LoRA ✓ Hands on experience in developing and deploying NB-IoT and LoRA networks

Tech Mahindra : Our Differentiator

- One stop shop for DE lifecycle, from development to testing and certification
- Test Labs and Design houses across all geographies
- Lab certified by All Tier-1 North American Operator

One stop shop for E2E Device engineering

Health Care Expertise
- Can leverage TechM's Remote patient Monitoring application
- TechM Health care practice is capable of bringing domain expertise with 4 health care IoT solutions developed in-house.

R&D Partner with Arris & other STB OEMs

- TechM is been design house of STB's for many years now
- We have a long standing R&D partnership with Arris for more than 10 years

Value Adds in Designing Home Health Monitoring system

Voice Bots Certification
- TechM provides IOT certifications to various Voice Bots like Amazon Echo and Google Nest
- Can leverage our AI practice expertise in bringing NLP and cognitive analytics.

Wearable Device Expertise

- TechM has expertise in developing Personal emergency response system in key chain with GSM & GPS.
- Experience to enable indoor access networks like Wi-fi,Zigbee & BLE to GWs

Innovation
- Contributing in enhancing the product feature set with inbuilt voice recognition system to detect sneezing, coughing and other patterns and analyze the disease
- Predict weakness, fainting, or any other visual signs of emergency

Conclusion : Enhancing Cable Providers offering with NexGen STB Enablement

Cable providers are in a unique position to enhance their business value by offering an integrated smart home solution, addressing current market needs. With their fiber reaching every home, they should leverage existing infrastructure to become an end to end business owner for every smart home need. NexGen STB can become the black box to enable these services, which can be customizable as per the business model. We can also onboard partners like Home insurance and services with the custom packages.

As a leading System Integration Partner in the Communication & Media space, Tech Mahindra is strategically focused on driving IoT based business solutions across verticals. Having demonstrated expertise in e2e IoT Enablement, Product Engineering, and Managed network services, Tech Mahindra is well equipped to enable NexGen STB for Cable providers.

Author

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Over 16 years of Techno Business experience in Telecom – Product Engineering & IoT. Enhancing IoT roadmap with strategic consulting and enable customers with End to End Offering in IoT Value chain. Anticipating problem statements and contribute to the Digital Transformation journey. Diverse international work experience in the areas of Solutioning, Business development, Pre-sales and Testing for organizations in Americas and Europe for fortune 100 Telecom and IoT global organizations.

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