mnubo Ayla Networks

FROM CONNECTED TO DATA-DRIVEN SERVICES

CASE STUDY: LEVERAGING TURNKEY SOLUTIONS TO GET IoT READY

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FROM CONNECTIVITY TO INSIGHTS

GETTING IoT READY

BEST-OF-BREED IoT SOLUTION PROVIDERS PARTNER TO DELIVER TURNKEY SOLUTION FOR PRODUCT MANUFACTURERS

Ayla Networks

CONNECTIVITY & DEVICE MANAGEMENT

Ayla Networks enables manufacturers and service providers to bring connected products to market quickly and securely using the industry's first Agile IoT platform. Delivered as a cloud platform-as-a-service (PaaS), Ayla's IoT platform provides the flexibility and modularity to enable rapid changes to practically any type of device, cloud or app environment.

mnubo

IoT ANALYTICS & DATA SCIENCE

mnubo is an IoT analytics company. mnubo extracts business value from IoT data by delivering out-of-the-box insights and advanced IoT data science. It offers a SaaS solution to connected product manufacturers so that they can ingest, enrich and analyze their object data. mnubo's SaaS offering benefits customers in consumer, enterprise and industrial verticals.

MAKING THE CASE FOR CONNECTIVITY

Manufacturers have spent years - even decades - and millions of dollars, refining product capabilities and the user experience. With the rise of IoT, products are getting more efficient and certainly 'smarter'. But as product manufacturers explore the possible benefits of creating connected versions of their products, companies need to ask themselves an important question: Do we have all the specialized technical expertise needed to connect and successfully scale an IoT-enabled solution?

DEFINING BUSINESS OBJECTIVES

Most companies are at an early stage of exploring the business drivers for IoT. The starting point isn't always obvious, so before doing anything product manufacturers need to identify clear, compelling uses cases for their connected product strategy. These initiatives are usually led by Product, R&D and/or Open Innovation teams within the larger organization and usually involve a light-weight end-to-end engagement - potentially across multiple solution providers across the IoT value chain.

The game-changing factor of the IoT lies in the data generated by connected products. When determining which use cases to offer, product managers need to think about how they might unlock the value of IoT data to differentiate products, evolve and enhance them over time, improve the experience of buying and using them, and generate new revenue streams.

CHOSING THE RIGHT PARTNERS

Many traditional product manufacturers do not have the connectivity and data expertise required to successfully implement a ready-for-market IoT connected product. Working with the right solution providers is crucial to gaining a meaningful assessment of an IoT project. Enlisting the help of technical experts will not only reduce the time-to-market, but it will ensure you are going to market with a, secure, robust data-driven offering.

SO, YOU WANT TO GET CONNECTED?

GETTING STARTED WITH
CONNECTIVITY & DEVICE MANAGEMENT

The first thing to realize about IoT products is that connectivity cannot be an afterthought, or something that is added at the end of the product design process. There are a number of important technologies and considerations when designing, building and ultimately selling IoT connected products.

The following are a few of the key challenges product manufacturers must consider when launching their connected product strategy.

I. SECURITY

There is more to security than just encryption..and security extends far beyond the device level. Products with great encryption, but that are used in the wrong way or miss a small detail, can be vulnerable.

Moreover security does not end at the device level, it is continuous throughout the product lifecycle. The end goal should not be to ship a secure product. Precautions need to be made throughout the product lifecycle; from the moment a product is manufactured through to commissioning, deployment and end-of-life.

Using an HVACR as an example, you can spend millions of dollars to build the first version of your connected HVACR, but without end-to-end security, it will cost you another million to build the same version with security, starting over to include security in every link of your connected product.

II. SCALABILITY

Like security, scalability has to be planned from the outset of your product design process. While many Infrastructure-as-a-Service (IaaS) offerings support massive scale, the management of that scaling process falls on the product manufacturer. If not properly managed you risk paying very high pricing models. Furthermore, certain database types do very well for an initial product launch but need to be migrated or used in conjunction with other types when massive amounts of data start being created.

III. DESIGNING FOR CONFIGURABILITY

Configurability needs to be baked into every aspect of the connected product. While it can be complicated, it is an essential aspect of IoT-enabled devices. Being able to extract data generated by your connected product will allow product managers to later learn about real-world performance and how customers use the products. Taking advantage of this learning to improve products in the field requires understanding how you will address configurability and product change, and having tools to do so.

IV. OPEN STANDARDS-BASED SOLUTIONS

To fully benefit from the IoT, connected products need to integrate with related products and services from other providers. This can be done using open native libraries and other standards-based solutions. Cloud architectures should be schema-less and agnostic to any particular data type. That way, connected products can not only interoperate with existing clouds and connectivity approaches, but also with whatever new clouds and connectivity approaches emerge in the future.

For example, a HVACR manufacturer might want to integrate with other products, such as wall heaters, thermostats and air conditioners, but also with lighting systems, smart door locks, and other smart home products to deliver a complete smart home solution.

V. INCORPORATE REMOTE CONTROL

Remote control must be woven into the architecture of a connected product from the outset. The product manager needs to consider whether the mobile app will support both iOS and Android. Or whether it will be able to control or manipulate multiple stand-alone systems all at? Returning to configurability - can the mobile app you are designing for a connected thermostat also control other connected products? What is the maximum setting allowed by remote control? All of these questions highlight the importance of determining clear use cases before jumping into design and development.

CONNECTED, NOW WHAT? EXTRACTING INSIGHTS

DERIVING INSIGHTS

WITH IoT ANALYITCS & DATA SCIENCE

One of the biggest advantages of a connected product is that it can continue to change and improve even after it is installed. IoT product data represents a powerful way to gain knowledge and insight on product usage and performance.The minute a product is connected and pushing data to the cloud, product manufacturers can collect insights throughout the product lifecycle.

I. STARTER: INVESTIGATE PRODUCT DEFECTS

Collect insights throughout the development cycle and field trials. Initial reports can be used to diagnose and investigate product defects and faults in labs. Product usage feedback, allows product managers to understand usage behavior in field trials, while also gaining visibility on real-time operations. Tap into the data benefits before products hit the store shelves, insights generated from beta testing and field trials can reduce the time-to-market, allowing product manufacturers to go to market with a competitive, robust product.

Returning to the HVACR example. Connected HVACR's measure flow, temperature, pressure and vibration levels in real-time. Integrate HVACR data, time-series, events and external data sources (product type, operating hours, geo-location, weather, etc) and monitor usage, and interactions. Perform flexible queries to understand how, when and where HVACRs are being used. Apply data science to build usage and engagement profiles to group HVACR on their usage behaviour which helps the manufacturer tailor its product and services to each segment.

II. ADOPTER: GAIN INSIGHT IN THE FIELD

If you are keen to understand how your newly connected business will engage with products and customers to create new long-term value, streaming analytics provides real-time insights across connected products. Lifecycle analytics extend the traditional product lifecycle management (PLM) process from pre-production all the way to live-in-the-field deployment. With continuous data from connected products, multiple stakeholders are empowered with diverse actionable insights. Product management, sales and marketing, operations, and C-level gain end-to-end visibility on actual product performance and usage, user engagement and customer profiles, as well as operational feedback.

Store and analyze the HVACR's diagnostic events data to determine trends, patterns and highlight potential issues. The manufacturer is notified of issues, anomalies and abnormal behaviour, as well as operational issues such as temperature and vibration fluctuations. Over time, data science can be applied on the failure and anomaly dataset to build predictive maintenance models that can highlight issues before they occur and allow the manufacturer to take proactive measures to address equipment related issues.

III. GROWTH: MEASUREABLE BUSINESS OUTCOMES

With complete visibility on the product lifecycle, product managers can uncover new opportunities across each sales channel. New support and service systems can be built based on the real-time stream of connected product data. Beyond traditional product warranty services, product managers can leverage product usage data to design new service packages with higher value product performance guarantees and service level agreements.

Data insights expose manufacturers to new competitive opportunities and threats. Usage data uncovers how value is created and captured, how equipment is utilized and how relationships with business partners are identified and defined.

Tracking an HVACRs life states from unconnected (ex: manufactured, shipped, purchased, etc.) to connected states (ex: registered, activated, end of life, etc.) product managers can identify inefficiencies in the value chain. Correlate warranty, maintenance and service plans with product usage and wear to optimize usage-based warranty services. After-market services and end-to-end lifecycle monitoring enable optimized inventory and supply-chain.

TRANSFORMING A PRODUCT INTO A CONNECTED SERVICE

Whether your interests are motivated by cost savings or improved revenue, the IoT is uniquely positioned to help with both.

Using a business-first approach, connectivity and data analytics help accelerate the transformation of traditional product manufacturers into a connected business.

BUILD BETTER PRODUCTS
Analyze engagement and feature usage to optimize product quality

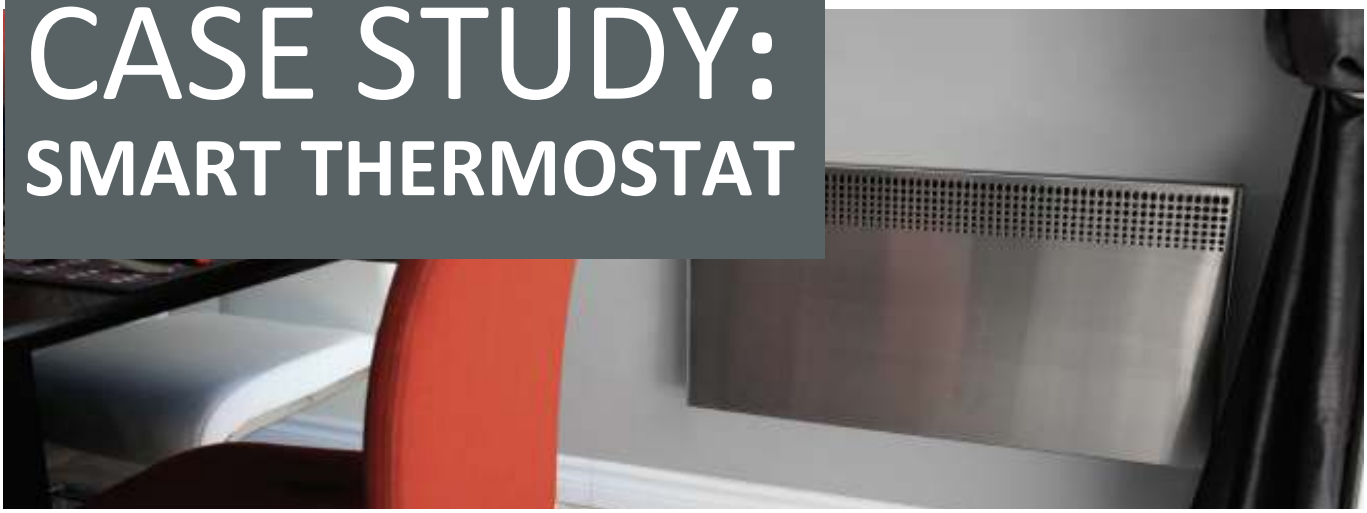
ENABLE NEW REVENUE STREAMS
Identify new opportunities by uncovering patterns in usage behavior profiles

INCREASE CUSTOMER SATISFACTION
Understand how customers are interacting with products and enhance the experience to match customer behavior

IMPROVE OPERATIONAL EFFICIENCIES
Optimize service offerings based on usage segmentation analysis and reduce the costs associated with providing that service

CUSTOMER CASE STUDY:
SMART THERMOSTAT

STELPRO



COMPANY BACKGROUND
Since 1981 Stelpro has been manufacturing a unique line of efficient and innovative heating products, thermostats, and HVACs. In 2016 the leading company embarked on their IoT journey introducing Maestro® - its first line of smart home solutions for electric heat.

THE CHALLENGE
In developing Maestro, Stelpro took a smart approach to creating an IoT-enabled product: they focused on their core expertise while working with partners to provide IoT cloud connectivity, mobile app development and data analytics capabilities.

The joint collaboration enabled Maestro to deploy a robust connectivity infrastructure that could be used to increase the value of their smart home electric heat solution, while also delivering a superior customer experience.

THE SOLUTION
Stelpro is bringing to market an innovative line of IoT-enabled smart home solutions that will enable people using electric heating devices in their homes to be more comfortable and use energy more efficiently

Taking advantage of Ayla's IoT platform, the Maestro mobile app allows advanced IoT capabilities including geofencing, or the creation of a virtual geographic boundary so that particular actions can be triggered when users enter or leave the 'geofenced' area.

Maestro will leverage insights from mnubo to better understand product usage, enable personalization and deliver an enhanced customer experience. They will also benefit from IoT analytics expertise to drive brand engagement and help consumers derive maximum value from their connected products.

> *"Joining forces with these IoT partners enables us to successfully develop and deploy a robust connectivity infrastructure for our new Maestro® – Smart Thermostats while delivering a superior customer experience," said Etienne Guay, Stelpro's Vice President, Innovation and Product Development.*
>
> *"With the North American product launch scheduled for this fall, we are now extremely well positioned to break into the Smart Home market with this integrated solution for the many households that use electric heating devices such as baseboards, convectors and unit heaters."*