LYNXSPRING®

For the Intelligence of Things™

Executive Brief:

Powering the Edge-to-Enterprise

The Internet of Things is changing our world.
It is changing the way manufacturers design, develop and deliver building and facility control systems, equipment, devices and applications, creating a world that is the Intelligence of Things.

Introduction

Our connected world is increasingly populated with smart equipment and devices. As convergence of these continues, we are seeing the rise of connected edge devices and greater intelligence at the edge.

The Internet of Things (IoT) has changed our world, including our development and strategies for developing equipment, devices and applications. IoT is presenting new opportunities for creating, operating and servicing and is leading the way for new business value delivery. Business operations are becoming "smart" by being connected further out on the edge.

The full range of possibilities created by IoT continues to grow and is now being realized by enterprises across the world. The impacts of these technologies are fundamentally revolutionizing the way products and services are created and how enterprises do business.

The Landscape

IoT is contributing to a significant shift in the way people acquire information, interact with each other, and make decisions. It is enabling us to expand our reach to a range of devices that can gather and analyze physical data and react to that data in a variety of applications that we've never seen before. The Internet of Things is enabling us to move from connected devices to connected intelligence — allowing us to redistribute and process data independently at the edge and enabling real-time decision making at the network edge.

Data normalization, business intelligence and Application Programming Interface (API) management requirements are also being pushed farther to the edge of the network. Equipment and devices are becoming more intelligent and gateways are enabling the efficient transmission of data by connecting legacy and new infrastructure to each other and to the Cloud. Equipment is becoming more digitized and more connected, establishing networks between machines, humans, and the Internet and creating new ecosystems.

Connecting to and communicating with all aspects of these systems and devices is critical in today's dynamic business environment. Putting more intelligence and more memory at the edge provides new opportunities for new services, analytics, better warranty data and the ability to access critical information directly. Furthermore, the proliferation of new intelligent devices, equipment, solutions and services based on IoT technology is leading to the flattening of the network architecture and equipment and devices that are connected directly to IP networks.

This in turn, is allowing for more streamlined connectivity between systems and the re-distribution and exchange of the ever-increasing amount of smart data that is inherent in devices and equipment at the device level and in the Cloud.

Advancements in technology for equipment OEMs are fundamentally shifting the competitive business landscape by providing new opportunities to create and deliver value. Data from connected products, devices and sensors is powering new innovative applications, enhancing business processes, enriching customer processes, and delivering new insights of information.

Today's market leaders understand that the value of connecting equipment and the collection of accurate data for driving cost-savings, increased customer satisfaction, brand differentiation, and increased revenues. This transformation from isolated systems to Internet-enabled equipment and devices that can network and communicate with each other and with the Cloud is generating unprecedented opportunities for new services, enhanced productivity and efficiency, improved real-time decision making and innovative user experiences. Central to this is the ability to securely connect, interact and integrate equipment and sensor data with core business systems, and applications and turn this data into smart data that is valuable and can easily be accessed and securely used. Additionally, we need to provide tools, APIs, and a foundation to rapidly build and commercialize new applications.

The rapidly growing number and variety of Internet of Things (IoT) devices is driving the need for highly scalable architectures with the flexibility to add or subtract capabilities, as well as support the many requirements of Internet-connected devices and equipment at the edge.

Lynxspring E2E

Lynxspring has created Lynxspring E2E (Edge-to-Enterprise) for intelligent systems, smart equipment, smart devices and services delivery, that addresses the management of intelligent devices at the edge, in the enterprise and in the Cloud. Lynxspring E2E is an edge-to-enterprise development platform and ecosystem for the Internet of Things that is enabling true collaboration between intelligent systems, smart devices, smart equipment and Cloud services.

Lynxspring E2E consist of three layers: an IP Stack and core building blocks (Helixx™), hardware platform and applications (Onyxx™), and Cloud Services (Connexxion®).

Helixx™ is an open-source software and continuously innovative framework consisting of a pre-integrated stack running from the device to the Cloud. It has been designed with our "one tool - do it once" (design an application once and deploy across multiple settings). It is scalable, secure, and works across multiple hardware platforms and includes applications that perform specific functions, like HMI, alarms, logic, visualization, trends, data tagging and modeling, device management, cyber security and more. Helixx™ has all the features needed to connect, control, analyze, protect and manage devices and equipment for this new paradigm of the Internet of Things.

The Helixx™ stack is designed to enable OEMs, equipment manufacturers and solution providers to build IP based solutions rapidly by providing an advanced control engine as well as the connectivity, data collection, storage, analysis, execution, and collaboration capabilities for applications. It has been architected so it can be deployed just about anywhere and on any device, controller, sensor, equipment etc.

Onyxx™ is an embedded edge platform that includes a family of hardware, modules, bridges and gateways supporting devices and equipment from the edge to the Enterprise and Cloud applications. Designed using the Lynxspring Smart Module™, users can easily implement data collection, exchange and management capabilities, API management, rules engines, event notification and data storage within a secured environment.

The Onyxx™ platform provides a selection of connectivity and capacity options to support a variety of applications and go beyond simple device connectivity to include device configuration, device management, and device-level application enablement. This incremental functionality allows OEMs and suppliers to deliver greater value.

Connexxion® is an OT and IoT data extraction and management platform that combines the Cloud, connectivity, data collection, aggregation, integration and application management for real-time, operational and energy information generated from building systems, equipment and enterprise applications.

Connexxion® is completely agnostic with restful APIs for any application, drives outcomes by enabling users to capitalize on accurate and concise data from their applications relating to the performance of facilities, building systems and equipment assets, all within a cyber-secured environment.

Together, Lynxspring E2E provides a robust ecosystem for edge computing capabilities via a single, portable platform that supports a variety of applications, equipment and devices with the flexibility of open source and additional value strengths including common APIs, development tools, open source access and open hardware platforms for creating the Intelligence of Things.

About Lynxspring

Lynxspring is changing the way devices, systems, and people communicate and collaborate across enterprises. Embracing open, interoperable IP-based software and hardware platforms, we design, manufacture and distribute JENEsys®, Onyxx™ and Helixx™ based automation and cyber security technology and edge-to-enterprise solutions for Building Automation, Energy Management, Cyber Protection, Equipment Control and other specialty applications.

Our technologies simplify the automation and information architecture across the enterprise and significantly lowers cost and enables users to go further to manage and operate their facilities and equipment smarter, safer, securely, more efficiently, and at peak performance levels.

Visit www.lynxspring.com for more information.

Summary

Lynxspring's E2E rapid prototyping control development methodology, based on open source software and open hardware technologies, shortens the overall deployment time for new control devices made possible by faster iteration cycles for development, testing and production. It allows customers to quickly build industry-specific IoT solutions and integrates disparate systems, utilizing API management that is able to run from the embedded device up through the cloud to reduce time-to-market and total cost of ownership.

Capitalizing on an open-source operating system, open programming and open hardware technologies, Lynxspring E2E provides several advantages:

- Provides the foundation with the flexibility to "build" innovative solutions without the burden of having to develop the fundamental building blocks
- Enables rapid application development in an open, hardened security, non-protocol dependency environment and deliver real-time decision making and data exchange at the edge
- Devices can interact with each other using distributed computing architectures and open standards
- Makes writing "apps" for these devices faster and simpler, compared to writing new APIs to link proprietary technologies
- Empowers companies to generate value in new ways as streams of real-time operational data are captured, analyzed, and shared to deepen a company's understanding of its products
- Significantly reduces the time and complexity to integrate diverse machines, equipment and systems
- Enables companies to remotely monitor and service their equipment by being able to constantly monitor connectivity and latency issues, responsiveness and other key quality of service measures
- Supports a software development environment that provides pre-integrated and fully tested, ready-to-use components
- Supports a wide variety of hardware and operating systems, providing customers with maximum flexibility in IoT implementations.