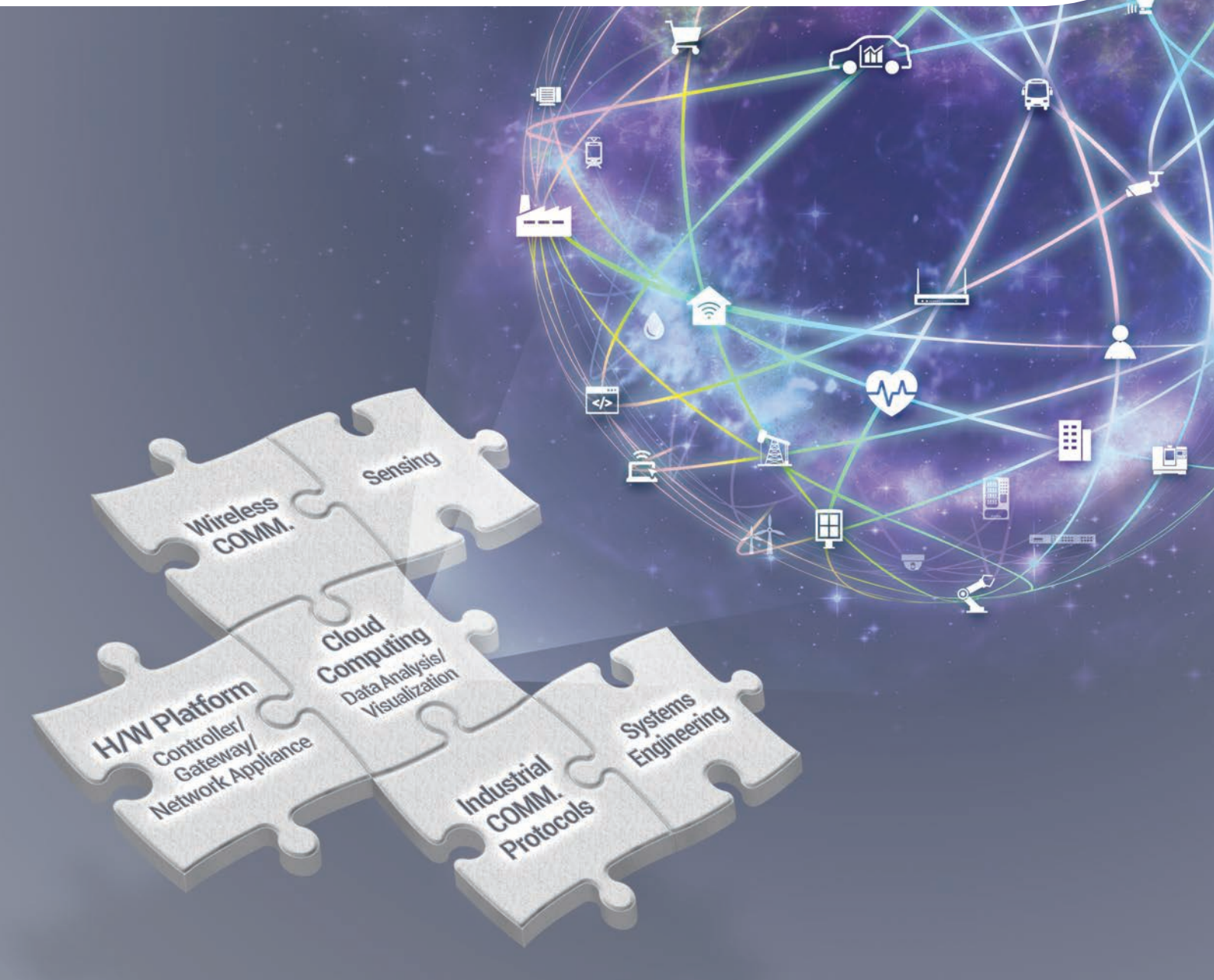
NEXCOM
The Intelligent Systems

White Paper

Practical Approach to Vertical Applications Demonstrates IoT Value



IoT requires the integration of sensors, hardware platforms, industrial network protocols, wireless connectivity, engineering services and cloud computing working in harmony to provide services or applications that meet industry and user needs and bring value.

Looking at today's wide range of technological topics, the Internet of Things (IoT) comes out as the hottest topic among all and is projected to become the rising star in the coming decade. However, in the midst of numerous IoT advocates, many of the proposed initiatives are far too stretched to be feasible. The key underlying issue of this is due to high technological expectations overshadowing practical needs.

The IoT megatrend has created a strong momentum for the industry and led numerous businesses to share their own IoT experiences and stories, in the hopes of winning customers with products with outstanding specifications and features. However, in spite of the compelling stories and groundbreaking technologies, taking another look at IoT from a long-term point of view shows that there are still unresolved problems. In other words, a missing piece indeed exists between IoT technology and industry requirements.

For the majority of users who have yet to feel the value of IoT, Alex Perng, General Manager of NEXCOM's IoT Business Unit, identifies that the cause of this is due to the old way of thinking that most vendors still adopt. Many have told IoT stories with the intent to increase sales, while not knowing that IoT application is not solely based on a single product, but an amalgamation of sensors, industrial protocol integration, wireless connectivity, cloud computing, data analytics, data visualization and more. All these serve as the basic foundation for developing new service models and applications that can solve user needs and bring true IoT value. Simply making a single outstanding product specification, after all, only demonstrates technological value, not application value.

What to Do Next After Connecting IoT is What Counts

Furthermore, as the majority of people are intrigued by what IoT can deliver, there are some of those who have higher than usual expectations and proposed a blueprint with a vision far too big to be fully realized in time. Smart city is one example of this. Whereas some other examples focus on a segment of an application, such as in factories where sensors, PLC and network devices are used to collect data that were previously difficult to retrieve, like air quality, temperature and humidity levels. However, with no back-end systems providing data acquisition and analytics, the correlation between the data and respective process parameters could not be identified.

Perng expresses that building IoT is not difficult, but users desire answers to questions such as what benefits can be realized and what problems can be solved by connecting to IoT. Answering these questions is where the true value lies. Therefore, to demonstrate the wondrous effect of IoT and bring value to users, solution providers first need to tackle the most daunting problems that users face and analyze critically on how to use network connectivity to connect different end devices for data acquisition. Next, the data must be integrated into the cloud for big data analytics to formulate corresponding management mechanism and solution models.

NEXCOM acknowledges that the gateways and PC-based controllers it specializes in reside in the middle layer of the IoT network, which is insufficient to serve as a basis for an overarching solution. Recognizing this, NEXCOM has readjusted its focus to IoT application development,

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developing a range of open platforms and tools with an emphasis on simplicity and ease of deployment for vertical industries.

NEXCOM hopes that businesses across different fields can use these open resources to introduce new types of sensors, embedded systems, network protocols, data acquisition platforms, network visualization tools and cloud services. With NEXCOM gateways and NEXCOM IoT Studio software (network configuration tool) at the center connecting the upper and lower layers, system integrators (SI) from traditional vertical sectors can leverage the open platform environment to integrate new IoT technologies into their existing value chain and create more innovative services and applications that solve customers' problems and create greater value.

Speeding IoT Implementations in Verticals with Open Platform

Under this circumstance, for SIs that previously specialized in end device connectivity in the scope of operational technology (OT), a considerable amount of project time and effort was required individually for each different project scenario of helping manufacturing customers improve operational efficiency. Now, through open source codes from software, system integration from the bottom OT layer to the top layer systems such as MES, ERP and IT can be achieved. In addition, thanks to the interoperability of open source technology, projects in the past that once required custom development can now be flexibly used as solutions for different case scenarios, improving the depth of services.

Take a factory control system as an example, solution providers can take advantage of the open platform and quickly acquire the right components needed for deployment, then use industrial IoT gateways to establish network connectivity for traditional PLCs and PC-based controllers. Field data such as cyclone particle density, temperature, humidity and pressure levels can be transmitted to back-end servers over Wi-Fi in real-time. Software analytics tools can then be used to process the data to identify the correlation between environmental parameters and production error rates. This real-time control system model enables customers to adjust parameters and achieve optimal production rates easily without additional training or in-depth knowledge, showing the true value of IoT.

Founded in 1992, NEXCOM integrates its capabilities and operates six global businesses, which are IoT Automation Solutions, Intelligent Digital Security, Internet of Things, Interactive Signage Platform, Mobile Computing Solutions, and Network and Communication Solutions. NEXCOM serves its customers worldwide through its subsidiaries in five major industrial countries. Under the IoT megatrend, NEXCOM expands its offerings with solutions in emerging applications including IoT, robot, connected cars, Industry 4.0, and industrial security.

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