Criticality of Advanced Technologies for the Connected Experience

A Frost & Sullivan Executive Brief

In partnership with IBM
For a business to be a leader in its industry, its customers need a tangible way to differentiate them from the competition. This differentiation needs to go beyond better product specifications or more appealing prices: regardless of industry, people still sell to people. And people today want solutions that are relevant, transportable, and available on demand. They want service that keeps them connected and is customized to their needs. Almost every business today needs to sell the customer experience as part of its product and service, and that experience needs to be a connected experience.

Today’s connected experience goes beyond an abstract sense of relationship to one that has a very real backbone tied to data and automation. Using information from the Internet of Things (IoT) intelligently means utilizing the most advanced ways to make data meaningful to the user and situation. Companies can use insights from IoT and help them learn and evolve through artificial intelligence (AI). In fact, in an advanced and prosperous system, AI becomes the guiding beacon, under which other important solutions, such as blockchain, drive and support activities to the desired outcomes. Put another way, AI is the umbrella solution, within which necessary IoT data can be secured, transferred, stored and monetized by blockchain-related applications.
For example, companies can create advanced connected experiences such as the following:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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<tbody>
<tr>
<td>Operation Efficiency</td>
<td>Design industry leading alert systems and dashboards that evolve to operator needs for manufacturing or building operations</td>
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<td>Increase manufacturing efficiency with IoT-based insights for tracking materials, production line equipment health and operations, and integrating field data into product design improvements</td>
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<td>Customer Service</td>
<td>Train service personnel and customers more quickly by using systems that learn the habits of the user, and engage experiential ways of learning</td>
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<td>Shorten the sales cycle by enabling more intuitive ways to present and communicate the value proposition to the customer through compelling formats of content</td>
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<td>New Revenue Streams</td>
<td>Develop new revenue streams, including the following examples: leveraging IoT-based data to create preventative maintenance service solutions for customer equipment, using blockchain to help track outcomes for performance contracting, or integrating AI into self-healing edge systems</td>
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**AI TRANSFORMING INDUSTRY**

AI has immense potential in industry that is only beginning to be leveraged. Unlike the realms of high tech or healthcare, traditional industrial markets – aerospace; oil & gas; manufacturing of electronics, automotive, and other industrial products lag far behind. However, as noted in Chart 1, AI has a role across the industrial sphere.
CHART 1: AI ACROSS THE ENTERPRISE

Product Enhancement:
Enhance product or services based on data intelligence

Personalization/-Customization:
Projections that can help provide customized solutions

Automated Reasoning:
Data analysis & recommendation generation

Automated Planning:
Sequential production of management and resources

Artificial Intelligence with enablers and enhance

Augmented Decision:
Technology enhancing decisions and reducing human error

Machine Learning:
Identifying patterns and discovering insights from multiple sources of data

Computer Vision:
Remote analysis of product designs and visual & acoustic recognition of errors

Natural Language Processing:
Ease of communication among machines and with people

Augmented Decision:
Technology enhancing decisions and reducing human error

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LEVERAGING AI FOR THE CONNECTED EXPERIENCE

The connected experience is now critical to propel a business into being a market leader, a Future Forward enterprise; likewise, AI is critical for delivering the dynamic interactivity of a truly connected experience. This experience has three main components: consumability, active engagement, and seamless connectivity.
**Consumability:** Consumability refers to the experiential consumption of insights and information in a manner that is engaging, often collaborative, and “sticky.” To make goods and services easily consumable, employ immersive technologies such as augmented or virtual reality, gamification, visualization and voice-recognition technologies.

**Adaptive Engagement:** Adaptive engagement is the facet of the solution in which the system learns and adapts with the user, driven by intelligent platforms running highly sophisticated analytics. AI is critical in this step as it drives the evolutionary and dynamic aspect of the connected experience: Adaptive engagement is what makes consumable goods and services fresh and engaging.

**Seamless Connectivity:** Seamless connectivity is the delivery vehicle through which the connected experience is provided. It refers to both capturing the information that feeds into the system, through next generation sensing and edge computing, as well as the mechanism employed to deliver the experience, which could include blockchain and wireless power. Technologies that can provide both levels of interaction, such as device to device communications, are also captured in this category.

**CHART 2**
TAking the connected experience into the ecosystem

Companies can utilize the connected experience to elevate it into a keystone ecosystem builder. An ecosystem builder stretches the advantages of IoT beyond the boundaries of its own enterprise, and even beyond its industry. Industry leaders have often found inspiration and influence beyond their direct markets. Solutions such as blockchain and AI can give companies even more leverage in becoming the keystone of their ecosystem. These smart, secure solutions make it easier for enterprises to collaborate, and companies who want to be a keystone for their industry will help bring together a myriad of partners. Value chain participants, data providers, suppliers, manufacturers, and other partners can work together on customer-centric value propositions that would previously be too complex to execute.

For example, IBM and a global leader in connected products and solutions is partnering to create voice-enabled AI rooms that deliver more natural and intuitive connected experiences for customers. These spaces combine IBM’s technology with the company’s soundbars to create interactive rooms that allow people to control their in-room subsystems and discover businesses near their location with natural language
interactions. The technology is being piloted by hospital patients, who are able to interact with the company’s in-room speakers that are connected to the IBM Watson IoT Platform. This allows them to operate lights and temperature settings, and ask questions about the hospital facilities or background information on physicians.

For the vast majority of companies, it will be impossible to develop these connected experiences on their own. However with the right partner, companies can transition from smart solutions to truly connected, industry-leading ones that provide a significant advantage. Providing customers, partners, and even tangential markets with connected experience-driven solutions can help elevate a company from being merely IoT proficient to being a Future Forward enterprise.
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