

POINT OF VIEW

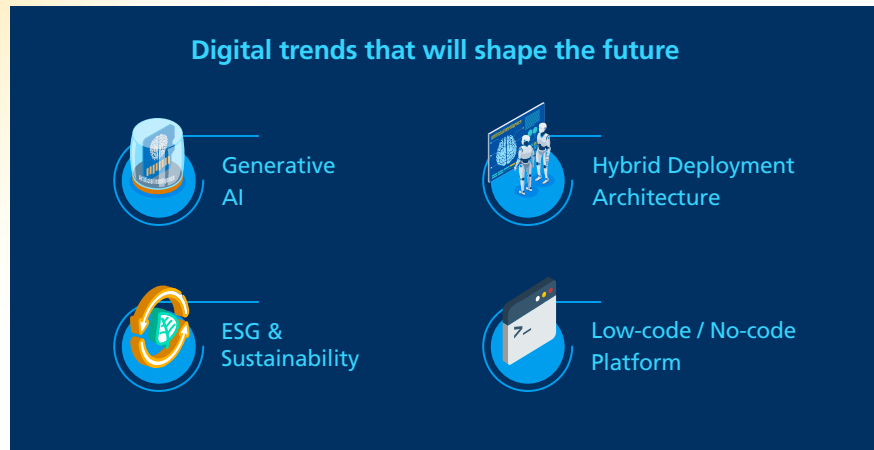
# Realize Application Factory

## With the Insights NxT Platform



# Top Challenges for Today's Businesses

Several trends are shaping the digital landscape, including the rising use of Generative AI and Machine Learning (ML), Sustainability, the demand for no code platforms with hybrid architecture. These trends have altered the way we communicate and conduct business. But the success rates of implementing digital transformation are varied with mixed statistics.



## Multiple surveys suggest just 26% is the success ratio on digital implementations\*.

However, there is no option as industries must move fast in their digital transformation journey to stay relevant. Several businesses have embarked on the digital transformation journey, but only few have achieved their desired outcomes. On the other hand, some have reaped benefits, but the challenge of cost versus benefit remains a significant obstacle.

There are various reasons why desired results may not be achieved, but a crucial factor is selecting the appropriate technology and platform. Today, there are multiple options available, and hence, the task becomes more difficult to choose the right technology and platform.

Digital transformation involves multiple systems and processes. Despite implementing several siloed solutions, the desired benefits still needed to be attained. Furthermore, the platforms were designed to be inflexible and closed, limiting their effectiveness. Creating a rigid and closed platform is unlikely to be beneficial, as the platform should be able to interface with multiple ecosystems and leverage various available platforms and products to achieve the desired benefits.

### Hence, the fundamental question is:

- How can one develop a product for digital use cases without any risk of software & hardware failures?
- How can one develop it at 10X speed and agility with a focus on domain functionality than spending time on standard services & software complexities?

\*Source: Beecham Research

## 'Overcoming The Odds' - Selecting the Right Platform and Technology

Cloud providers offer a speedy solution for building IoT, data, and analytics platforms using PaaS components. Nowadays, options are available with highly developed open-source technologies with a vast and thriving community to provide active support. Lately, advancements in the analytics field have been exponential with open-source technologies. Relying entirely on any of these approaches will impact cost and performance. The platform with extensive cloud providers component needs hefty license costs. Organizations are beginning to comprehend this, not during deployment, but after years of witnessing as their cloud costs inflate. The stickiness of one cloud platform also makes it challenging to shift to other providers as they must pay high migration costs. It becomes impossible to switch or make any changes, and this technical debt continues to grow.

Another challenge is to get the best resources for implementation. Not only is getting an Angular or React JS programmer an issue, but ensuring proper UX design and implementing the same with the right technology components and proper UI layout are often a challenge.



### Low-code / No-code?

Can the applications be created with minimum or no-coding?



### No skilled programmer?

Can the platform provide ready templates, and can one create own screen by dragging and dropping without any skilled programmer?

**The Insights NxT platform has taken several measures to have the right combination of components and bring that benefit to the clients in terms of cost and flexibility of cloud provider platforms.**

## A Dive Into - Insights NxT & Layered Architecture

The Insights NxT platform creates a software application factory while addressing some of the critical challenges faced by the industry.

Insights NxT is a multi-tenant enterprise platform with a composable architecture with several micro-service components to address the complexities of mind, machine, material, and location.

The guiding principles followed while architecting are:

- Cloud-agnostic – Cloud-native but cloud-agnostic
- Composable Architecture – Microservice-oriented, built around API services
- Multi-tenant – Should handle multiple clients in the true sense
- Portability – Cloud and on-premise
- Secure and Scalable – Multiple layers of security
- Composable and layered to cater to numerous domains
- Configurable, minimum / no-coding
- Persona based Access and Visualization

Most digital implementations are complex, requiring interfaces with legacy systems and 3rd party enterprise applications. If platform architecture is rigid and tightly coupled around its components, such integration with 3rd party ecosystem becomes a bottleneck.

**Platform architecture with plug-and-play modules and flexibility to add/remove any component is critical to achieving digital success.**

The Insights NxT platform being cloud agnostic, can be deployed on Microsoft Azure, Amazon AWS or Google platform. The platform can also be deployed to a private data center to meet the on-premises deployment requirement.

# Insights NxT

The temperature value gets enriched and has different significance as it gets associated with the asset in each layer

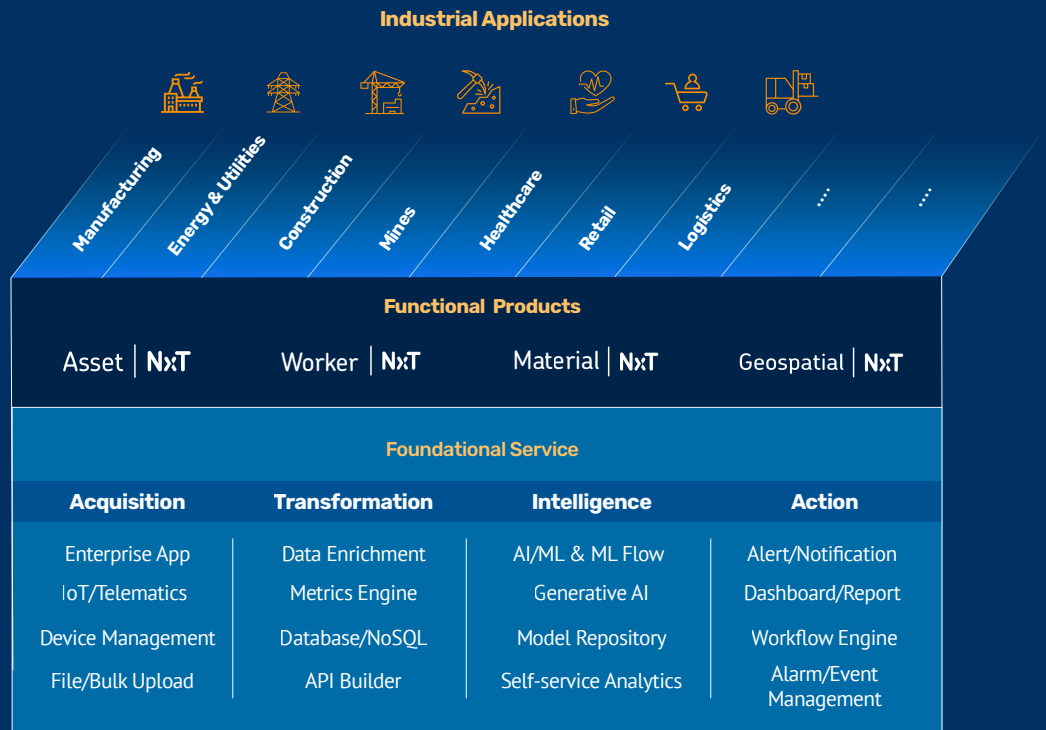
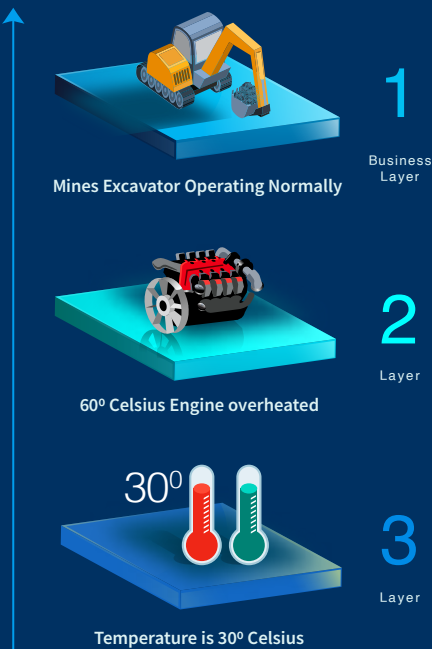


Diagram: Insights NxT Platform's Layered Architecture

As data progresses from the bottom to the top, its value gets enhanced. Each layer contributes to its intelligence and adds significance.

As an illustration, the core services layer captures the raw temperature value by connecting directly to the sensor or through a gateway, followed by utilizing an industry-standard protocol to interface. This is simply a raw temperature value, for instance, 30 degrees. This temperature value is associated with an asset as

this data travels upwards. It could be an engine temperature value. The data gets enriched by providing additional insights into whether the engine operates under normal conditions or overheating. As this engine gets associated further with the domain, it brings much more value concerning the domain. For example, the equipment utilized in the mining industry will exhibit contrasting behavior when powered by a cogeneration propeller engine.

# The Art of Software Craftsmanship: Inside an Application Factory

## Low-code / No-code Platform

**The ability to create new domain applications quickly without coding is the Insights NxT platform's most significant benefit.**

Writing minimum units of code makes it easier to focus on business logic. Lesser code lowers the complexity, which results in fewer bugs. Less code also means easy maintenance, significantly reducing costs.

## Horizontal Scalability and Vertical Specialization

Today, digitalization is required in every industry sector, and verticalization is essential. However, each vertical is special. The NxT platform is specifically designed to handle these scenarios. It has a portfolio suite consisting of multiple horizontal core services essential in building any IoT, data, and analytics solution.

For any use case, you can spin-off your application in the shortest possible time.

**The NxT platform provides 70-80% readymade functionality, whereas 20-30% is only needed to develop your vertical application.**

**Insights NxT platform creates an application factory with minimum/no-code provisions, with horizontal scalability, and vertical specialization.**

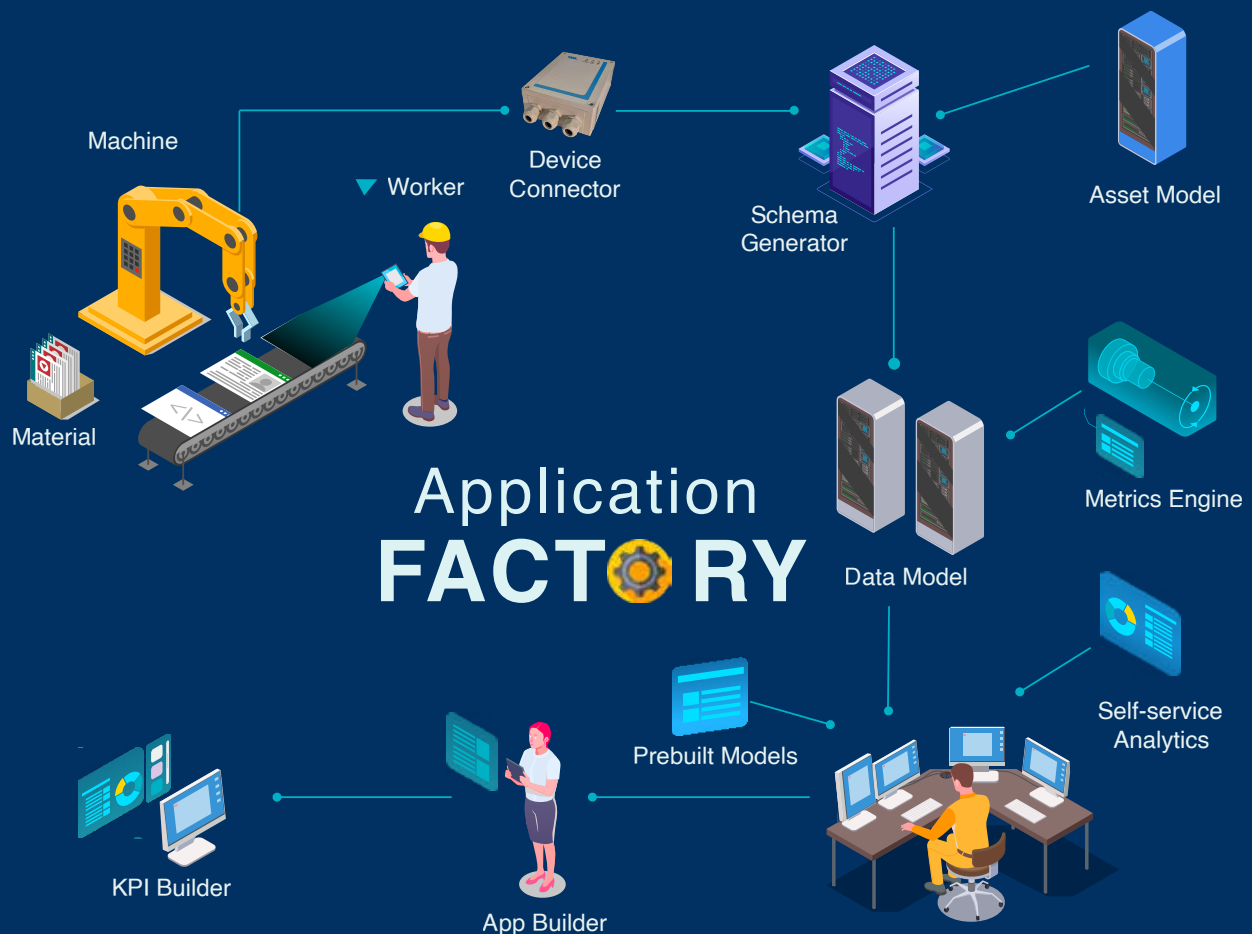
# Visualizing the Application Factory

The platform provides several ready components to connect to the user's device, utilize the prebuilt connector and create a data model by plugging in the dynamic schema. Automatically publish the API for consumption by utilizing API builder. The data model further gets curated and transformed with a metrics engine. Users can utilize the curated feature sets with prebuilt analytics models or create them using self-service analytics.

**The highlight is that the users can build their model without a data scientist.**

Now, the user needs a dashboard and KPI visualization to view their results. They don't need to look for a UI programmer. Use a built-in app builder where dragging and dropping the widgets can build dashboards in 1/10th time. Use several ready templates, charts, and graphs to include in the vertical application.

**With minimum or no-code, users can save precious time and minimize risks, enabling them to focus on their domain use cases.**



# 'Molecule' Creates Meaningful Insights

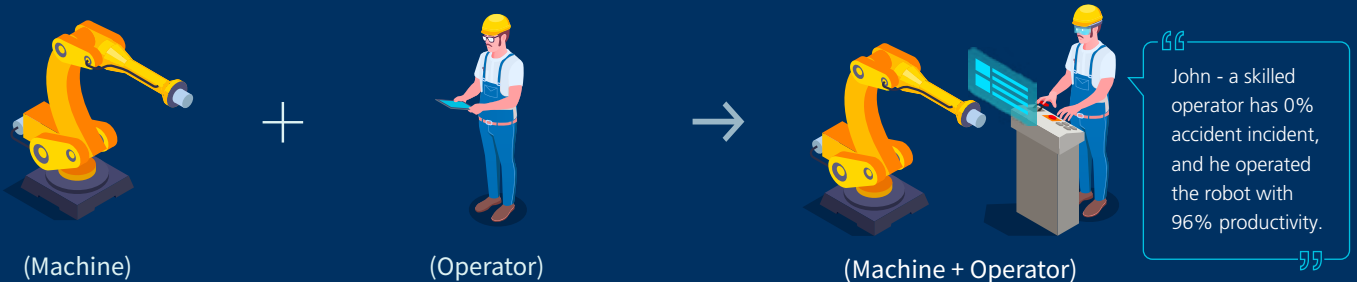
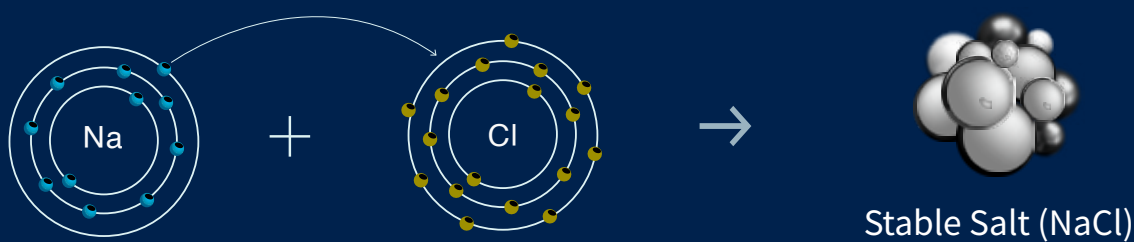
Siloed information has limited benefits. Plenty of platforms focus on man, machine, or material individually. They may solve a particular use case in that limited domain but must utilize their true potential. Organizations realize that these siloed use cases bring limited digital transformation benefits. The key is collaborating the data across different functions and breaking the silos.

Correlate this to the atom-molecule analogy, considering an 'atom' has singular data

information. Atoms have their attributes concerning protons, neutrons, and electrons with their energy levels in each shell. They individually have limited functionality and uses, but combined with another atom and becoming a molecule brings new dimensions.

The same is with information in the IoT space. When combined with the operator or human being and its material, any asset information covers new insights.

**The Insights NxT platform breaks this barrier of siloed information and combines Man, Machine, and Material knowledge to have an end-to-end use case.**





## 'Edge In' Approach: Value Creation at The Edge

Currently, sensors capturing real-time values generate tremendous data at the edge. This data is then processed, curated, and transformed into the cloud. But there is a high cost in doing this process. As edge computing power grows exponentially, new options are available to distribute data transformation. The emergence of 5G has significantly improved the edge's ability to leverage a high-speed, high-bandwidth local network. Consequently, load distribution is possible, allowing for transmitting a small amount of data for central dashboarding and visualization.

Processing the data closer to the applications, things, or users and creating value from this raw data gives us more advantages. It solves two critical aspects of data privacy and security. The data remains locally at customer premises and is also much more secure. It also optimizes the latency and bandwidth.

**The Insights NxT platform deploys edge analytics and can redistribute required applications on edge as the solution demands. Platform AI models, which usually run in the cloud, have been optimized to run at the edge.**

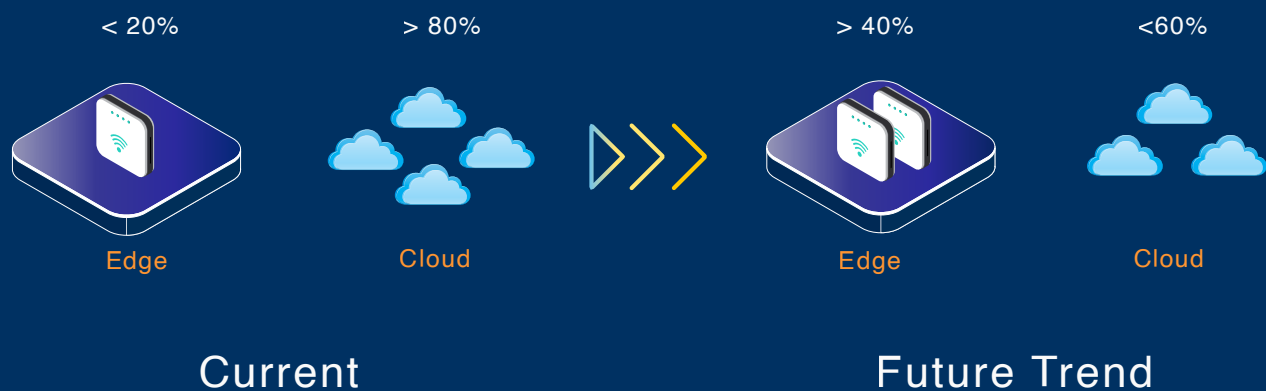


Diagram: Hybrid Deployment on the Rise

To find out more about the capabilities that Insights NxT offers to digitally transform your business, visit us at [LTIMindtree NxT](#).



Contact us at  
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to book a meeting.

## Author's Profile



### **Mahesh Mahajan**

VP & Global Head of Products, LTIMindtree

Mahesh Mahajan is heading the NxT product and platform team and has been active in creating product strategies to introduce new & innovative product lines. He has over three decades of experience working with MNCs in software, embedded technologies with expertise in Industrial Manufacturing, Avionics, Oil and Gas, CPG etc., industry domains and have been associated with IoT, data and analytics platform development for several years.

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