

**Point of View**

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# **LTIMindtree's Digital Command Center – Towards Global Rollout and Enterprise-wide Integration**

Authors:

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Smart manufacturing initiatives with the overarching goal of more effective, adaptable, and sustainable manufacturing operations have been accelerated by Industry 4.0. Global leadership of organizations, especially after the global COVID-19 pandemic, are now focused on shaping their organizations by transitioning from the traditional manufacturing models to advanced digital systems and processes. Executives need to direct their attention to rebuilding a central remote commanding and monitoring system for their operations while also incorporating decisiveness, consistency, transparency, and agility in their solutions.

Digital Command Center (DCC) is used for cloud engagement and automations for easy and convenient system monitoring. DCC offers a customizable UI to easily find out bottlenecks, unusual behavior of the operations and respond right away. DCC helps the users by providing real time insights for an accurate and thorough Root Cause Analysis (RCA) along with recommendations based on the ML/AI models. DCC enables the users with in-built configured rules, alerts, and calls-to-action. Expert users get a vast array of options at their disposal, including the ability to finely customize these rules, alerts, and actions.

With its distinctive value proposition of edge analytics, LTIMindtree's Digital Command Center@Edge is the solution for intelligent production. In this blog, let's deep down as to how the factory of the future will be redefined by this advanced digital solution.

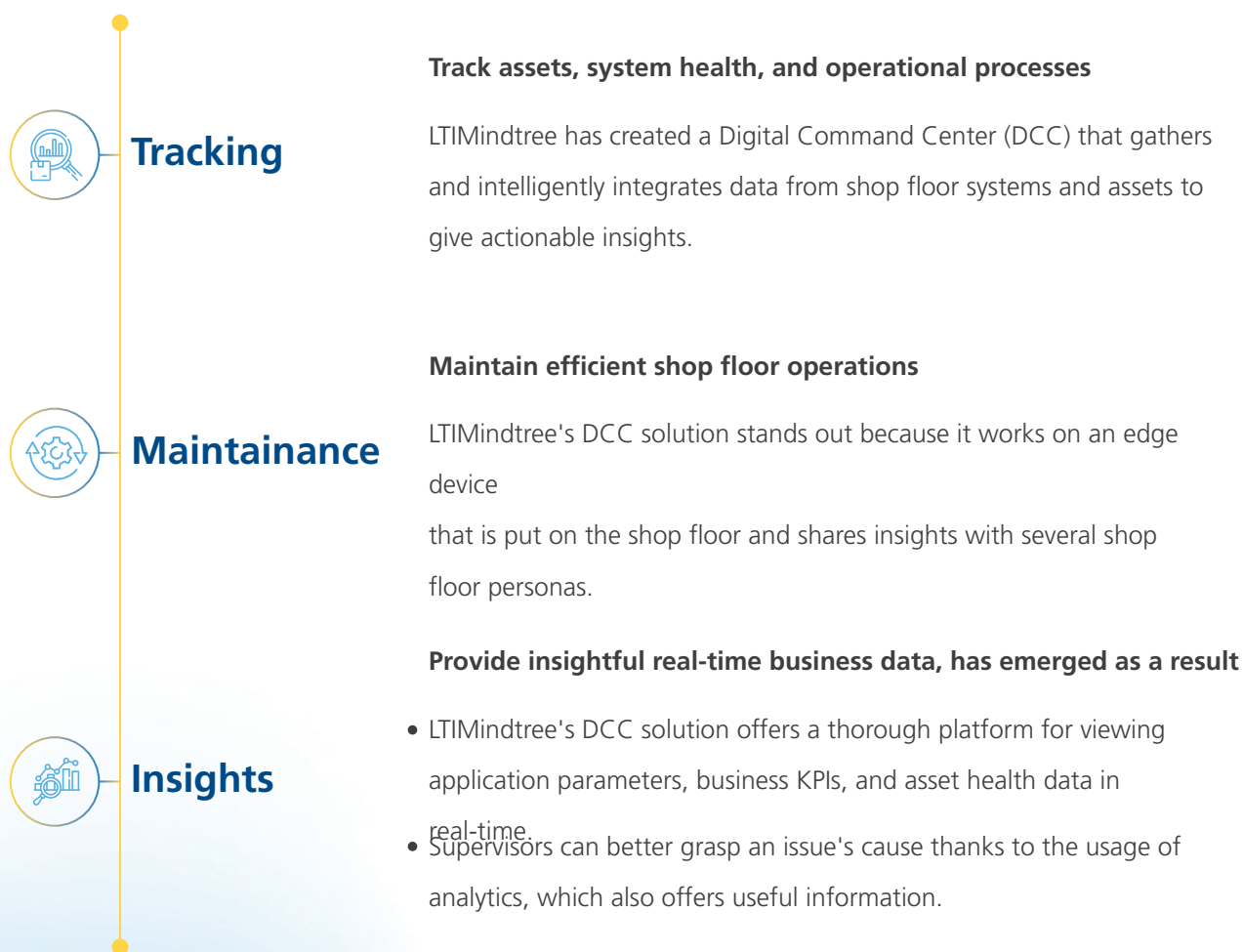
## Need of a Digital Command Center (DCC)

In a typical factory set-up today, there is no single-view system available for getting a real-time system information or insights. Currently there is a Silos of Systems which needs to be bound together for a single, consolidated monitoring. Accurate business decision-making extremely difficult due to lack of a single-view In a typical factory set-up today, there is no single-view system available for getting a real-time system information or insights. Currently there is a Silos of Systems which needs to be bound together for a single, consolidated monitoring. Accurate business decision-making extremely difficult due to lack of a single-view system. DCC provides Real-time Insights and a Single-view Monitoring Mechanism within the shop floor. This helps in quick decision making.

In contemporary factory set-up, due to the limited insights, there is a lack of predictability about the upcoming challenges and thus the users are unable to choose the actions to avoid the hinderances.

DCC provides consolidated data in collaboration with the transformation to the cloud, which helps users to create the RCAs based on the historical analysis. DCC driven RCAs, on a regular basis, supported with the predictive model and use cases help in proactively avoiding the future problems and bottlenecks.

The implementation of DCC solution is also needed to aid in increasing overall operational effectiveness while lowering costs and unplanned downtime. A Digital Command Center (DCC) is necessary to enable shop floor personnel with functionalities such as –



# Business Challenges of the existing Systems

Technology teams are finding it difficult to manage the chaos of their complex IT environments. Thus, there is a quintessential need for the organizations to adopt a combination of hybrid, multi-cloud, and cloud-native infrastructure to optimize business services. To truly understand the true state of their enterprise services, IT operators must put availability and performance data from various applications and infrastructure components together. Also, different types of business personas are impacted differently with these business challenges. Here are a few consequential challenges that the contemporary businesses face, which eventually leads to the wider adoption of a DCC solution.



**Non availability of Central Platform** to view asset parameters & application KPIs



**Unplanned downtime** & delay identifying the point of failure



**Non proactive monitoring** at production units leads to high downtime



**Multiple disparate solutions** leading to unwanted delays



**Low Production Efficiency** and yield

## Personas Impacted via LTIMindtree's DCC

### Business

Factory Site Manager  
Maintenance Engineer

- Business KPIs Monitoring (Asset / Machine Availability, Production Cycle time, Quality - Scrap / Yield and OEE)
- Business KPI Improvement



### Business IT Services

Director / VP of IT  
Field Service Engineer

- Systems providing visibility of Business KPI (Asset / Machine Availability, Production Cycle Time Quality - Scrap / Yield and OEE)
- Application Monitoring (Manufacturing Applications), Application Obsolesce
- Asset Monitoring (Manufacturing Infrastructure Monitoring), Asset Infra Software Obsolesce



### Technology Services

Director, IT Services  
Manager, site IT  
Support

- Application Monitoring (Manufacturing Applications)
- Asset Monitoring (Manufacturing Infrastructure Monitoring)
- Incident Monitoring (Manufacturing Incidents SLA Monitoring)

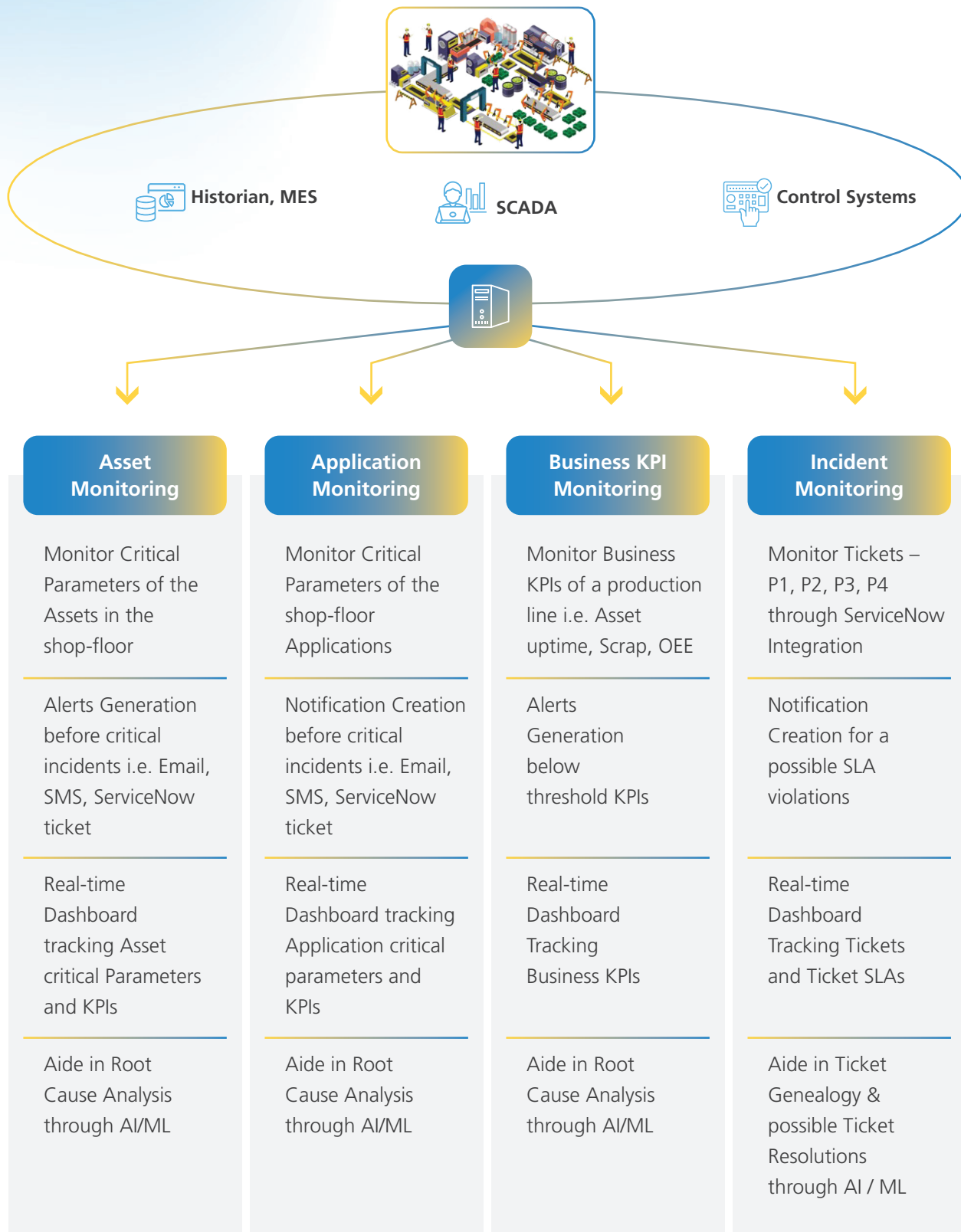


### Partners/Vendor/OEM

## Distinctive Attributes of LTIMindtree's Digital Command Center@Edge

Digital Command Center@Edge is a unique solution from LTIMindtree's visionary experts. LTIMindtree's DCC has been developed as a business insights platform that provides business, IT, and technology services data. It provides a revolutionary roadmap to Automate the Issue- Resolution through Zero/One Touch. As a part of DCC Global Rollout Roadmap, AI/ML is envisaged for Bots-enabled resolution, Automated recommendation of resolution, providing enterprise level data insights and aggregation. Enterprise level data aggregation & insights.

The key distinctive attributes/features of the DCC include –



# Successful Implementation of LTIMindtree's DCC: A Case Study

The first LTIMindtree Digital Command Center@Edge project has been implemented as a pilot version of DCC at one of the largest Life Science manufacturers in the US. The salient features and the implementation details of the pilot include –

## Business Benefits

- **Unified Dashboard:** Providing unified view of assets, applications and KPIs
- **Remote Monitoring:** Real-time visibility of asset conditions and business KPIs
- **Automated Incidence register:** Integration to ticketing system to enable to track all issues
- **Improved Asset Uptime:** Avoiding business disruption due to asset unavailability

## KPIs

- **System KPIs:** CPU, Memory, I/O, Processes, Threads
- **Application KPIs:** Application Memory, CPU Utilization, I/O utilization
- **Business KPIs:** Machine uptime, Cycle time, OEE by production area

## Technology Benefits

- Build on Open Standard Protocol
- Light weight Containerized
- Integration with ERP, Cloud & Ticketing Systems
- Comprehensive Set of Machine Connector library Easy connection with SCADA, HMI, Historian and MES
- Scalable notifications services using SMS, Email & Kaizala App (Mobile App)
- Seamless integration with Shop-floor applications and services

# A Success Story of LTIMindtree's DCC Tracking in Real-Time

There was a production halt reported in a client's manufacturing facility because of asset and application downtime. There was no centralized platform where system health, application health, and business KPIs could be viewed in real time. Systems were fully interconnected thanks to the deployment of the Digital Command Center@Edge solution, which also enabled LTIMindtree pinpoint the root cause and failure site.

Additionally, the customer experienced production interruptions at the facility, which resulted in significant waste and a delay in the delivery of packaged final items, both of which adversely influenced revenue. The downtime was decreased with the aid of real-time insights offered by LTIMindtree's Digital Command Center@Edge, assisting the client in enhancing their production cycle time.

## The Roadmap for LTIMindtree's DCC Implementation

LTIMindtree is also preparing for the phases of enterprise-wide integration and worldwide rollout. The key aspects of this implementation are Pilot Demonstration, then the successful tracking and monitoring of the implemented systems. Later the actionable insights and resolution can be collated through data integration. Later comes the automation aiming one/zero touch. This kind of thorough framework helps in businesses to accurately predict and analyze trends which would help in preventing the future potential failures via automated and proactive actions. The road map against the weeks of implementation looks like –



#	Weeks	Functions and Capabilities
1	0-12	<ul style="list-style-type: none"> <li>• System Monitoring</li> <li>• Application Monitoring</li> <li>• Alerts &amp; ServiceNOW integration</li> </ul>
2	10-18	<ul style="list-style-type: none"> <li>• Business KPI Monitoring</li> <li>• Ticket Monitoring</li> <li>• Azure Data Injection</li> </ul>
3	15-36	<ul style="list-style-type: none"> <li>• Maintenance Calendar Integration</li> <li>• Lean Kit board integration for Operations Schedule</li> </ul>
4	24-52	<ul style="list-style-type: none"> <li>• AI/ML for Automated recommendation of Resolution</li> <li>• BOTS enable Resolution</li> <li>• Enterprise Level data aggregation &amp; Insights</li> </ul>

## LTIMindtree's Digital Command Center Implementation Approach



*Note – Rollout across new lines and new plants would be seamlessly done as this DCC solution becomes reusable with Microservices based Architecture*

# Salient Features of LTIMindtree's DCC

Let us outline some of the key features that LTIMindtree DCC (Digital Command Centre) provides.

- A tried-and-true method for quickly releasing data from various legacy systems onto the shop floor
- A plug-and-play method that allows for the flexibility to add various modules (Efficiency, Quality, Maintenance, Production, etc.) incrementally based on the requirement
- Preconfigured dashboards for system and business KPIs like OEE & Cycle time
- DCC@Edge keeps a close eye on crucial business KPIs even if there is a brief disconnect with the cloud
- Leverages the power of machine learning using the AWS Lambda function to build predictive scenarios related to machine and production batch performance
- DCC uses Amazon SageMaker at the edge and in the cloud to take advantage of the power of advanced analytics
- Health monitoring of OT assets such as MES, SCADA, and historians for better incident management and generating alerts prior to the occurrence of critical incidents (Email, SMS, ServiceNow ticket)

## The Path Ahead with DCC

Edge-based Digital Command Center Analytics will enable Intelligent Manufacturing thanks to AI. The first of its kind, cutting-edge technology in the market, the Digital Command Center@Edge is designed to revolutionize the manufacturing sector. LTIMindtree customers, with DCC implementation, have experienced Increased worker productivity, increased production efficiency, decrease in unplanned downtime and decreased operating costs.

The organizations can begin with the pilot to get their DCC journey started, towards smart and hassle-free manufacturing processes. This would help them with the Data acquisition from plant application as per template, OEE for 5 machines, Hosting solution on AWS Cloud, and Pre-configured dashboard.

By providing the industry with actionable production insights through Digital Command Center@Edge, LTIMindtree hopes to increase savings and scale to enterprise-level solutions with a bigger business impact. Thus, LTIMindtree's Digital Command Center@Edge is the future of intelligent manufacturing and industry 4.0! Implement the Pilot of LTIMindtree's DCC and begin your organization's journey towards smart manufacturing.

## Author's Profile



### Rex Jesudas P

Edge and Connectivity Practice Head, LTIMindtree

Rex comes with a 25+ years of Industry experience across Manufacturing, Healthcare & Pharma, Travel & Logistics domains. He has experience of implementing multiple Digital transformational programs enabling in their Smart Manufacturing & Connected Things Journey. Has experience across IOT Platforms, Edge AI, DW/BI, Analytics and Edge Computing.

As a Senior Principle – his innovation journey is across cutting-edge technology spaces like Edge, Digital Twins, 5G, Manufacturing Data Lake.

### Sivapreeta Jayachandran

Project Manager and Energy Consultant, LTIMindtree

With about 10 years of experience in IoT, Automation, Smart Building Management, Sustainability, Agile delivery, Sivapreeta has been driving multiple innovative initiatives and projects in Intelligent Building Spaces, Sustainability, Computer Vision, Analytics enabling Smart maintenance, Fleet management at LTIMindtree.



**LTIMindtree** is a global technology consulting and digital solutions company that enables enterprises across industries to reimagine business models, accelerate innovation, and maximize growth by harnessing digital technologies. As a digital transformation partner to more than 700 clients, LTIMindtree brings extensive domain and technology expertise to help drive superior competitive differentiation, customer experiences, and business outcomes in a converging world. Powered by 82,000+ talented and entrepreneurial professionals across more than 30 countries, LTIMindtree — a Larsen & Toubro Group company — combines the industry-acclaimed strengths of erstwhile Larsen and Toubro Infotech and Mindtree in solving the most complex business challenges and delivering transformation at scale. For more information, please visit [www.ltimindtree.com](http://www.ltimindtree.com).