INDIA SMART GRID WORKSHOP

DISCOM Digitalization with IT-OT integration implementation

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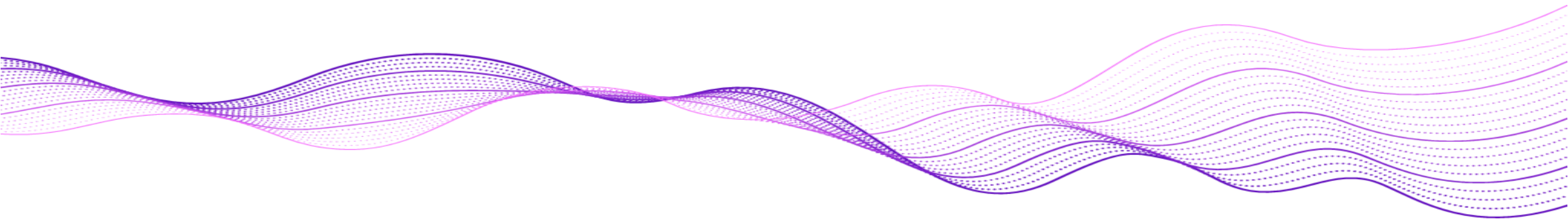
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

accenture

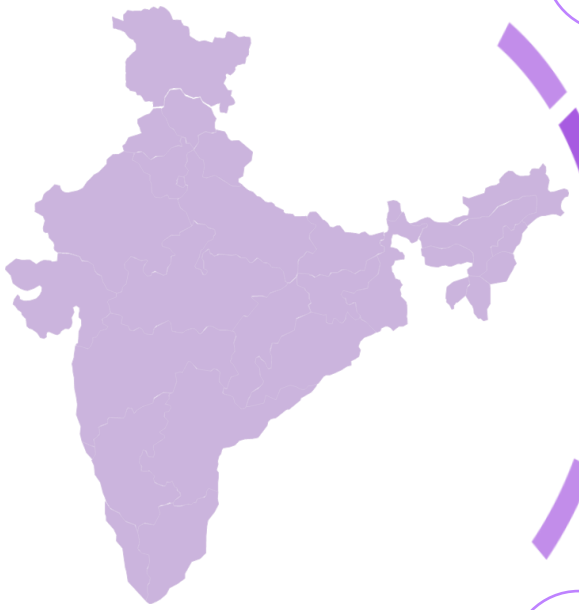
Today’s objective

1	**OVERVIEW**
2	**UNDERSTANDING IT-OT INTEGRATION**
3	**ROADMAP FOR FACILITATING DIGITALIZATION AND IT-OT INTEGRATION IN INDIAN DISCOMS**



Overview

Changing market landscape and government push is driving the need for digitalization in Indian DISCOMs



Market landscape

Multiple central level schemes

Opportunity for digitalization

Focus on 24x7 reliable power

Focus on increased efficiency

Need for RE integration

Focus on cost optimization

R-APDRP — **2008**

IPDS — **2014**

UDAY — **2015**

RDSS — **2021**

Increase use of smart devices

Growing consumer engagement

Need of decision support systems

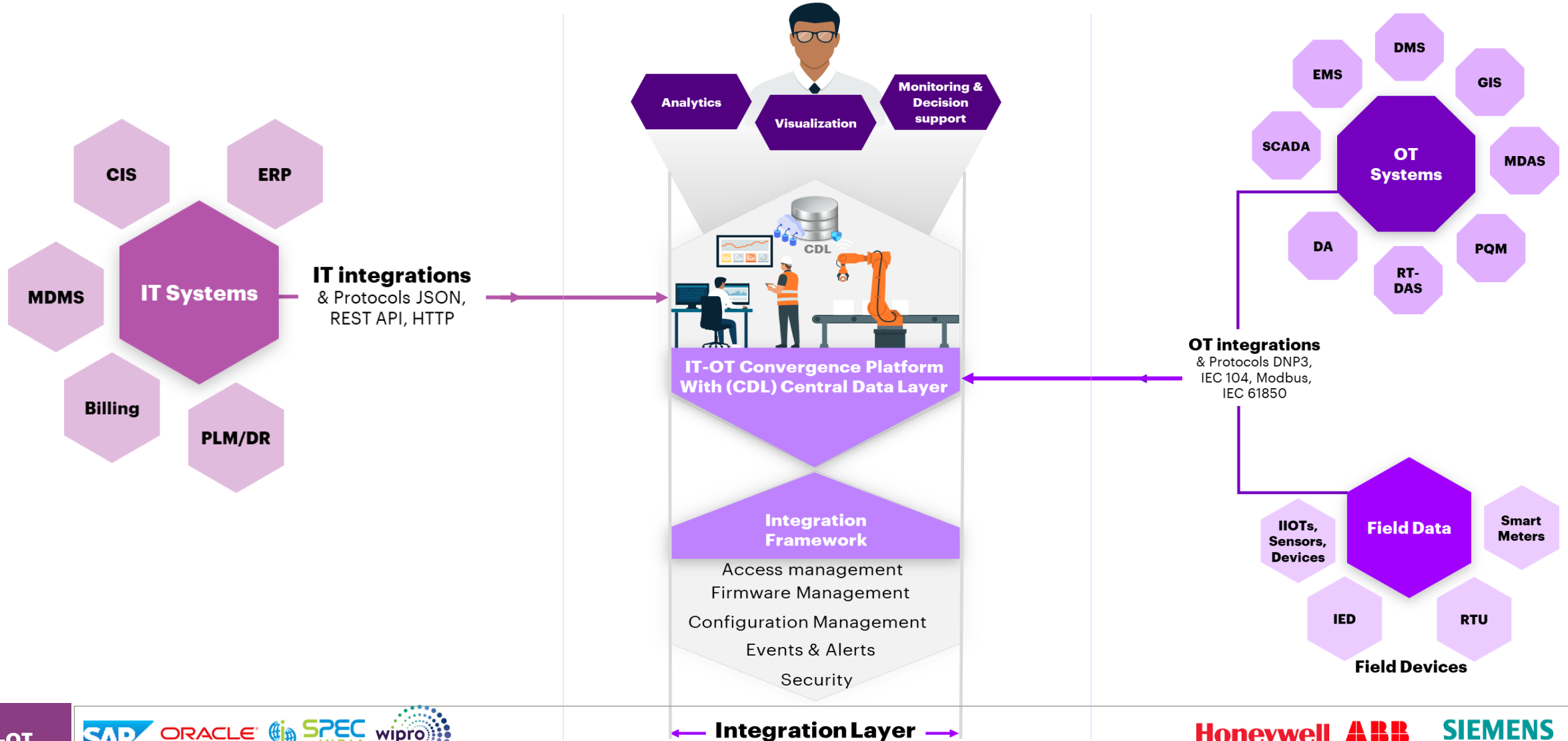
Strengthened communication infrastructure

Given the importance, we worked with GIZ to develop a digital transformation roadmap to enable IT-OT integration in Indian DISCOMs

01	**Understanding IT-OT integration in the context of Utility industry**	• What is IT-OT integration? • What is the Indian scenario for IT-OT integration? • What is the global scenario for IT-OT integration?
02	**Roadmap for facilitating IT-OT integration in Indian DISCOMs**	• What architecture will be used for integrating IT-OT in Indian DISCOMs? • What is the step wise implementation approach for DISCOMs to embark on its IT-OT journey? • What is the typical digitalization pathway for Indian DISCOMs?

1. Understanding IT-OT integration

What is IT – OT integration?

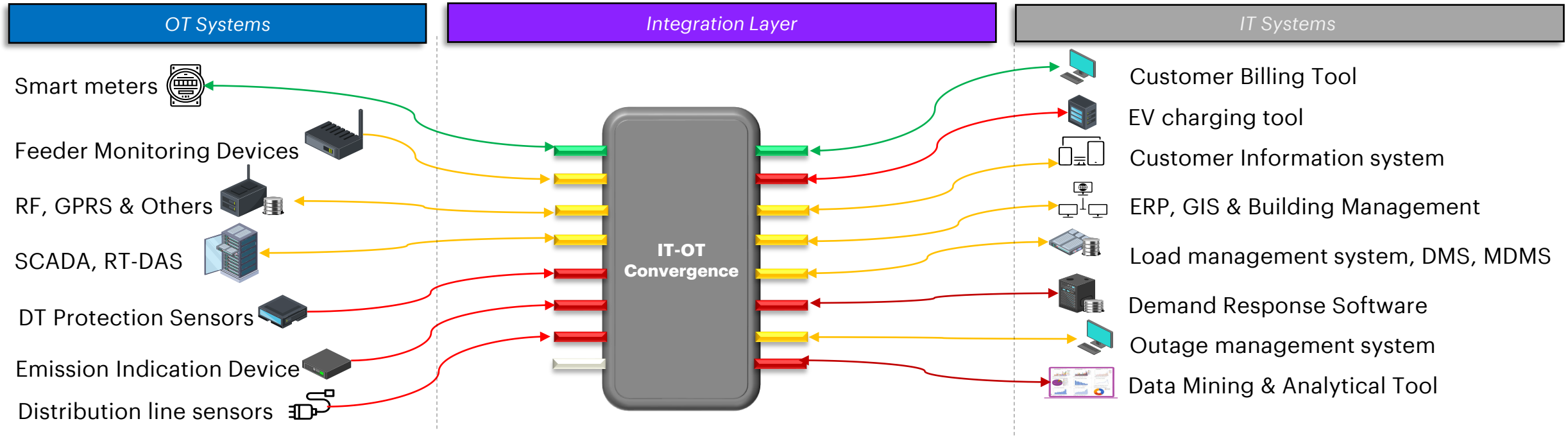


IT-OT Product companies

SAP ORACLE SPEC INDIA wipro IBM FLUENTGRID seamless transformation Microsoft

Honeywell ABB SIEMENS Schneider Electric HCL Landis+Gyr manage energy better

Currently, IT & OT systems in Indian DISCOMs operate in siloes and there lies a huge scope for IT-OT integration



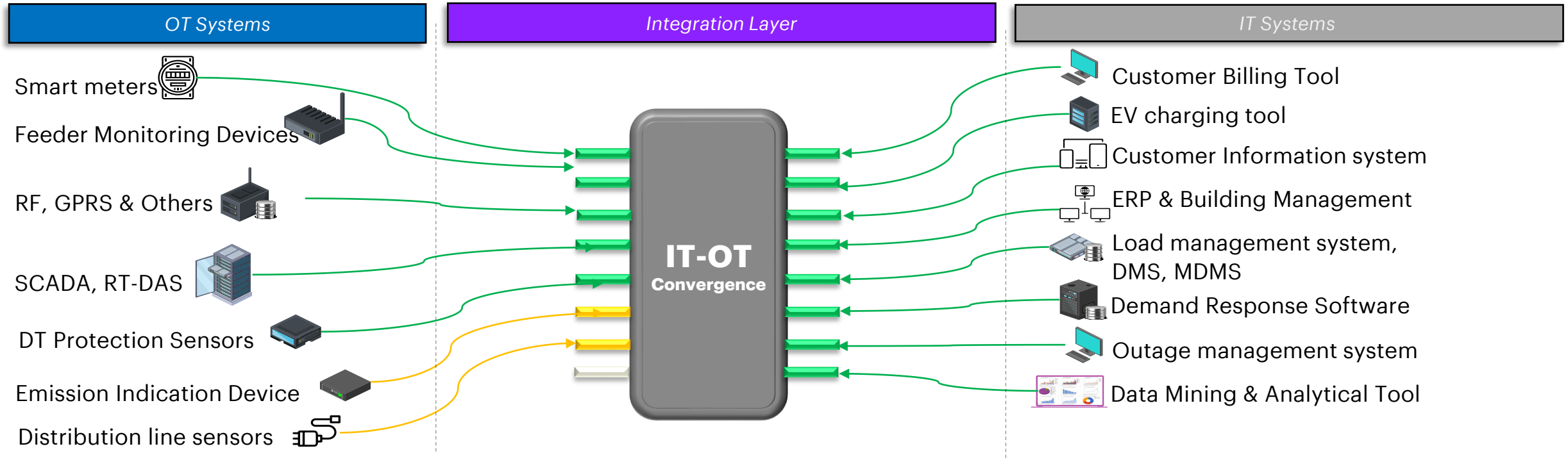
Systems operate in siloes with low level of integration due to the following challenges

- Lack of large-scale OT deployment*
- Lack of defined system, integration and cybersecurity standards
- Issues in integration with legacy systems
- Lack of awareness of possible use cases through digitalization
- Solutions with proprietary controls
- Lack of required skillsets and bandwidth of DISCOM employees

* Smart meter deployment are moving at a rapid pace in India, hence creating more opportunities for IT-OT integration

Well integrated
Moderately integrated
Unused potential
Not Integrated

Globally, DSOs have a greater number of systems installed; however, integration challenges still exist



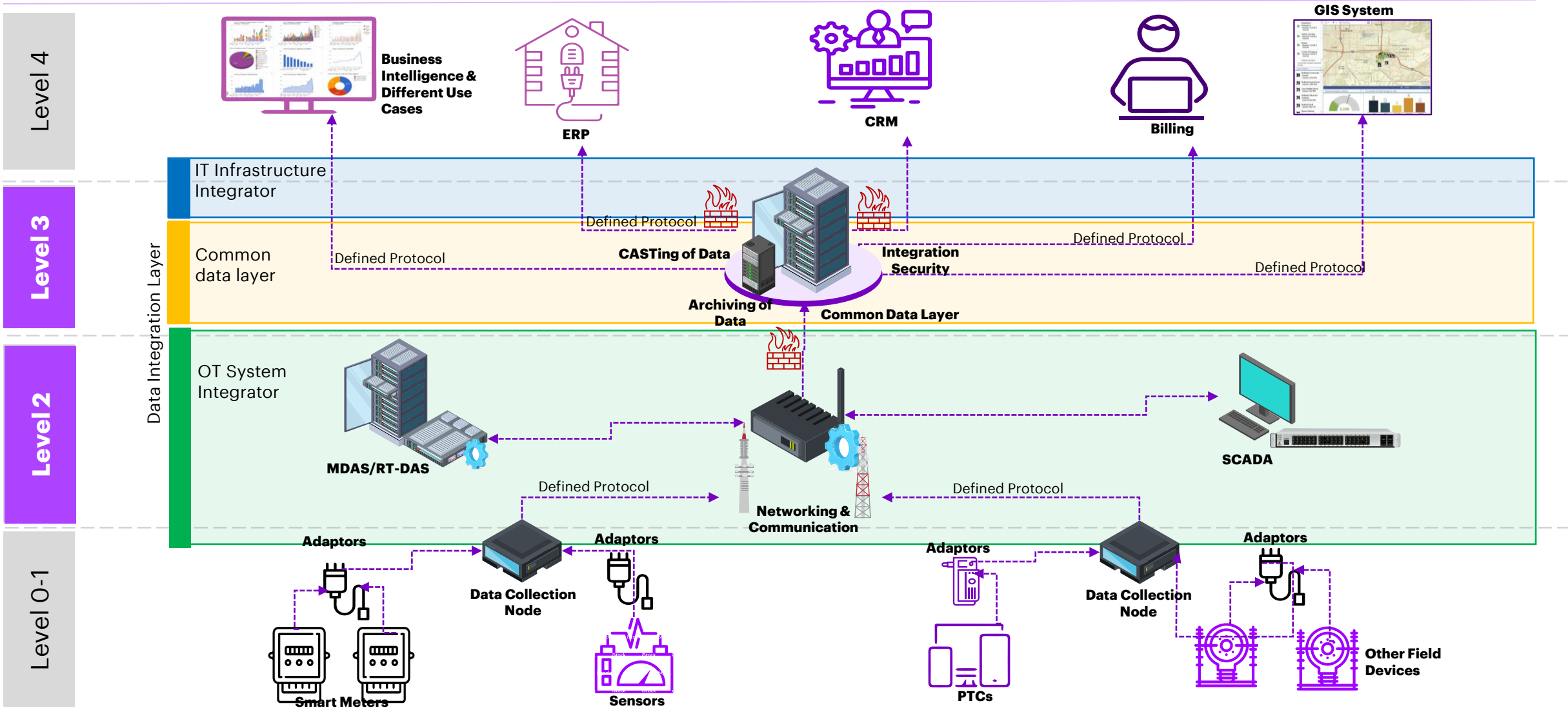
High Level of integration has been leveraged by global DSOs, however, end to end integration is still a concern

- Handling large volume of data from various field devices
- Difficulties to manage heterogeneous formats of data
- Difficulties in real time GIS & synchrophasors mapping
- Cyber security & network security challenges
- Interoperability challenges on device and networking layers
- Configuration & upgradation challenges for large scale deployment

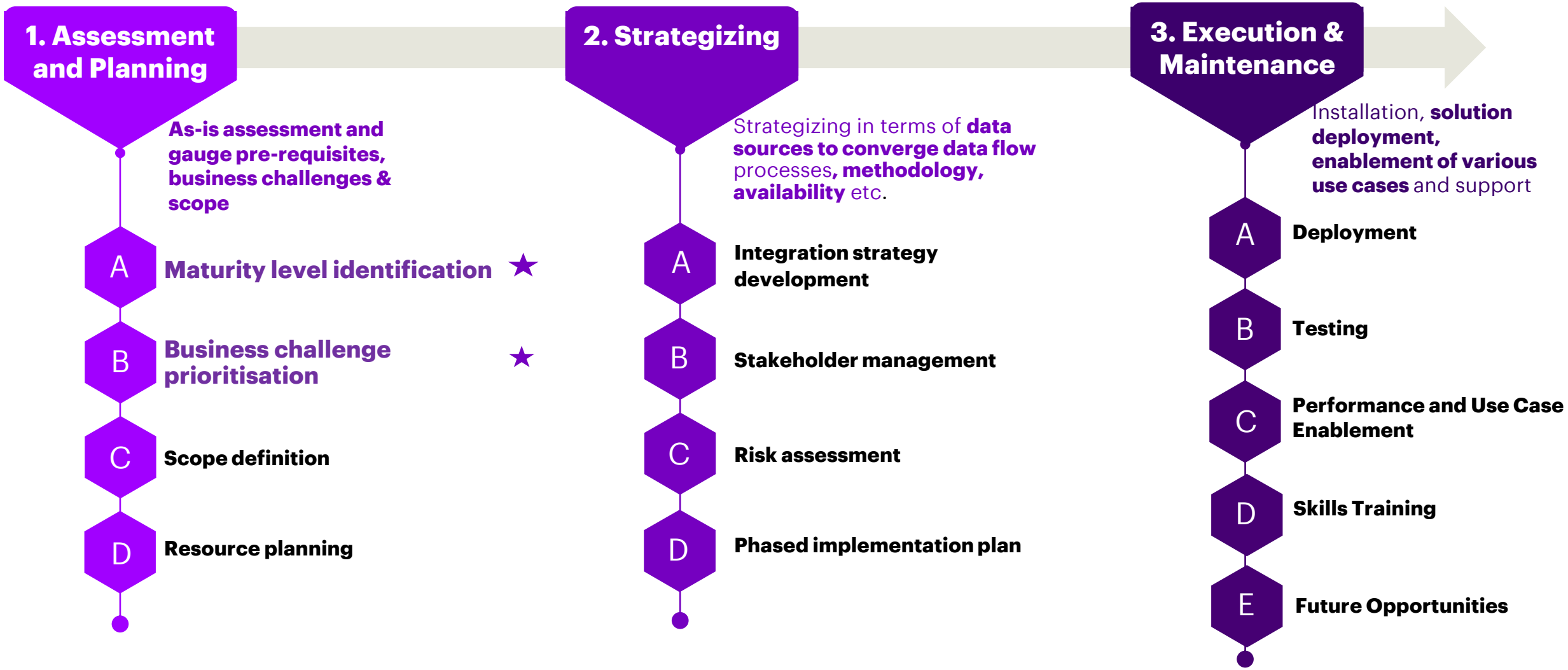
Well integrated
Unused potential
Moderately integrated
Not Integrated

2. Roadmap for facilitating digitalization and IT-OT integration in Indian DISCOMs

Overview of IT-OT integration architecture as recommended for Indian DISCOMs



Step wise implementation approach for DISCOMs to embark on its digitalization journey



The first critical step is to identify the maturity level of the DISCOM

Relation between DISCOM Maturity Levels & Digital Transformation Phases

Digital Transformation Phases

Advanced

The last phase of digitalization where a DISCOM may plan to implement data-driven solutions, high performing analytical engines, and decision support systems etc.

Leading

DISCOMs may undertake different use cases through integration solutions which can further help the DISCOM to increase overall performance.

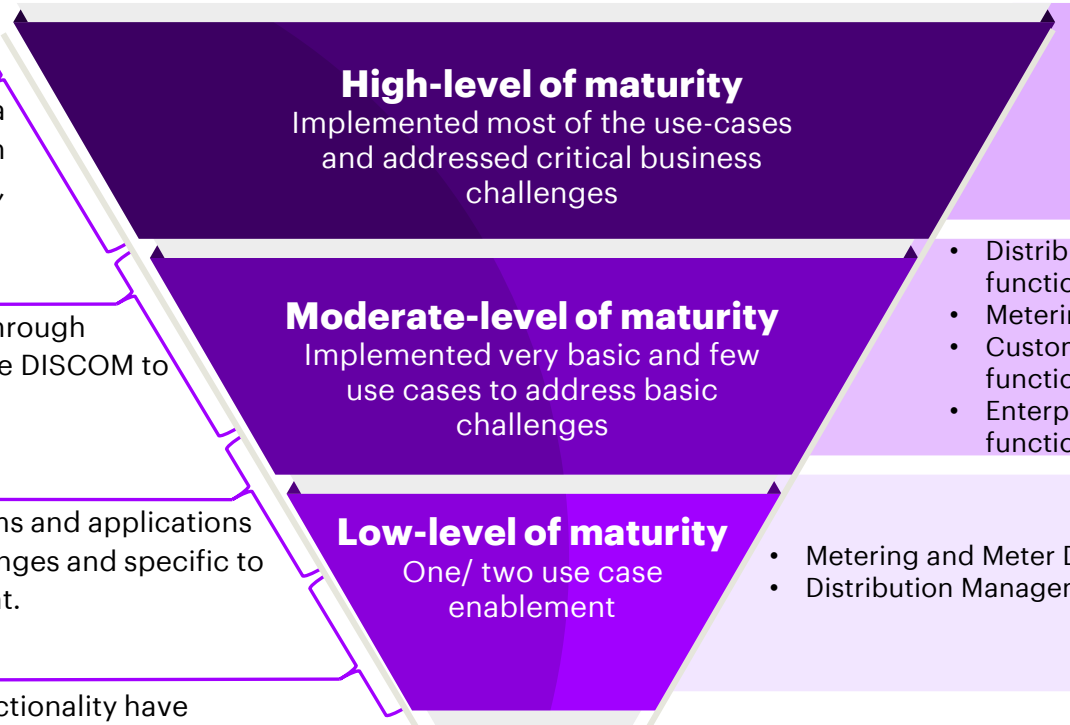
Intermediate

In this phase a DISCOM may implement systems and applications that can be enabled to mitigate current challenges and specific to different functionalities & use case enablement.

Basic

In this phase, basic IT and OT systems and functionality have already been implemented by the DISCOM or will be implemented in the near future.

DISCOM Maturity Pyramid



Implemented Use Cases

- Distribution Management Systems (DMS)
- Outage Management Systems (OMS)
- Geographical Information Systems (GIS)
- Enterprise Asset Management Systems(EAMS)
- Metering and Meter Data Management Systems (MDMS)
- Customer Information Systems & Reporting (CIS)

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- Enterprise Asset Management Systems(EAMS), (a few functionalities)

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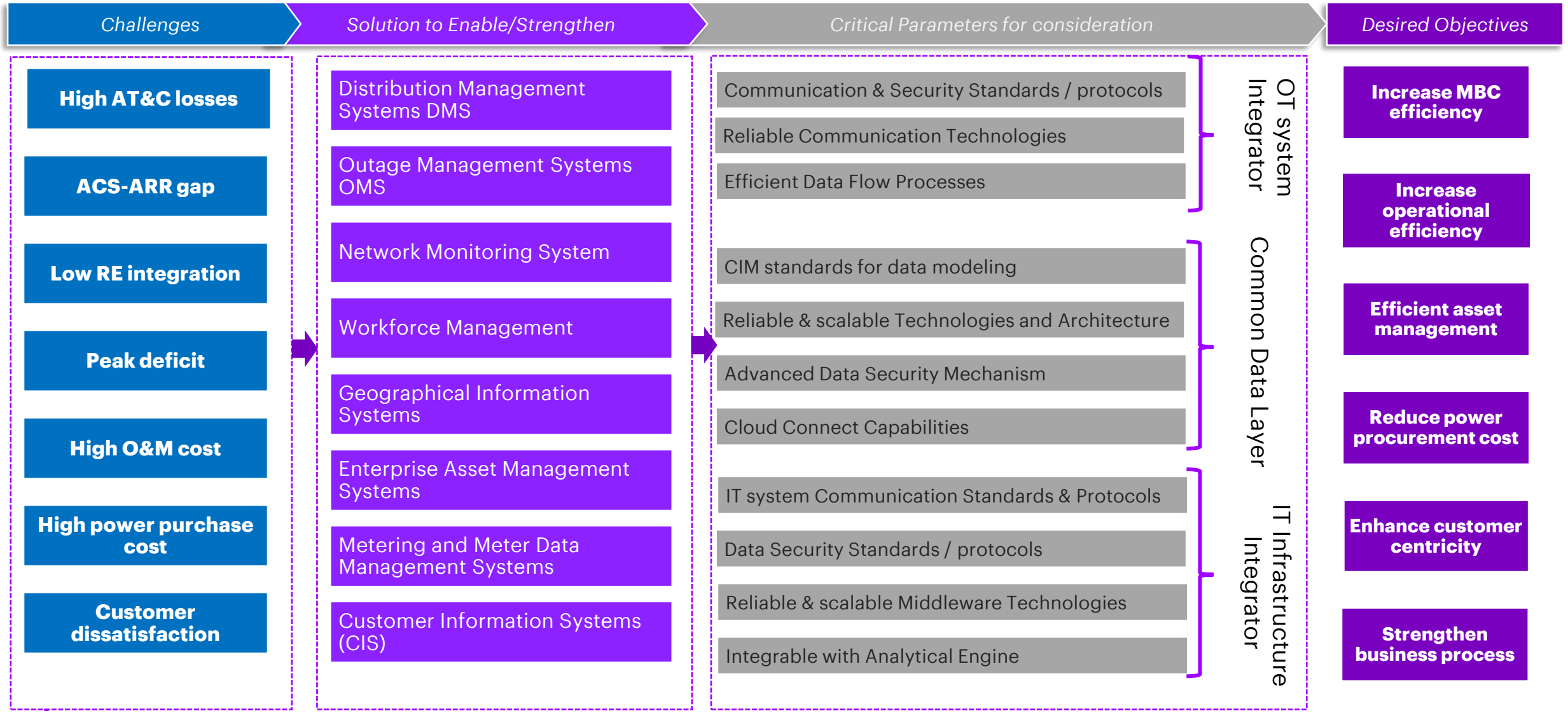
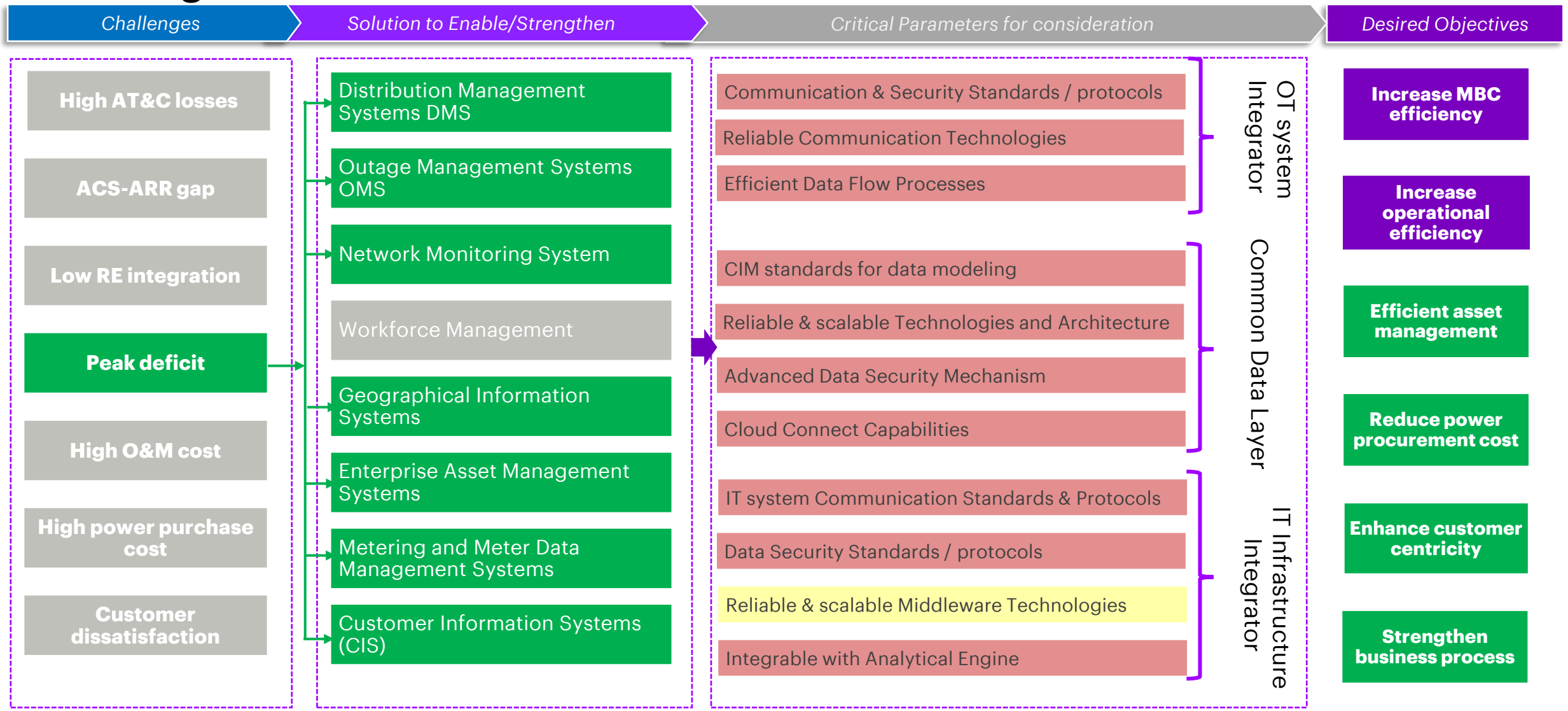
- Distribution Management Systems (DMS) (A few functionalities)

Secondly, it is important to understand the critical business challenges and the use cases to enable

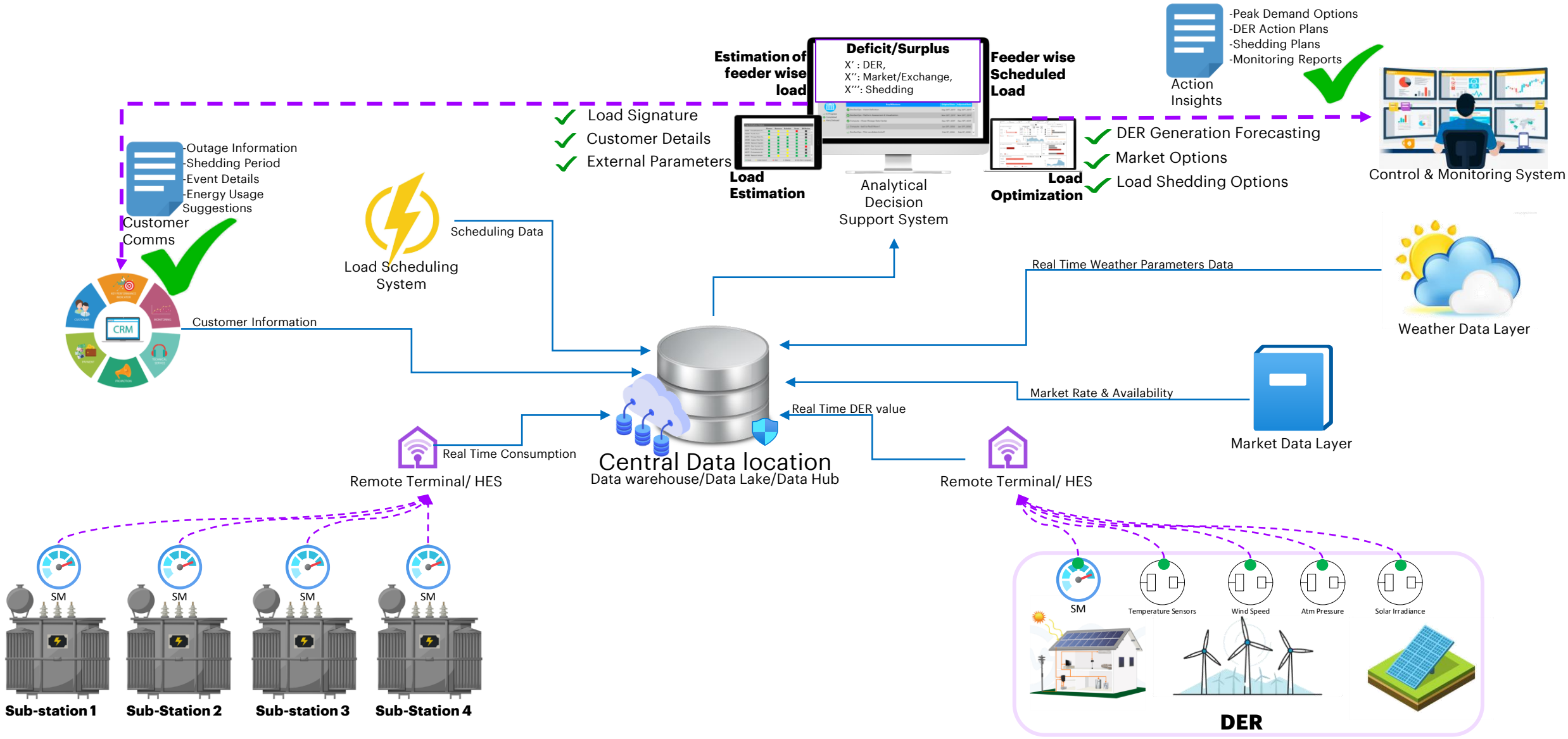


E.g., for managing peak demand, we can leverage the combination of IT-OT feature to target not just one but a combination of objectives which solve the primary challenges...

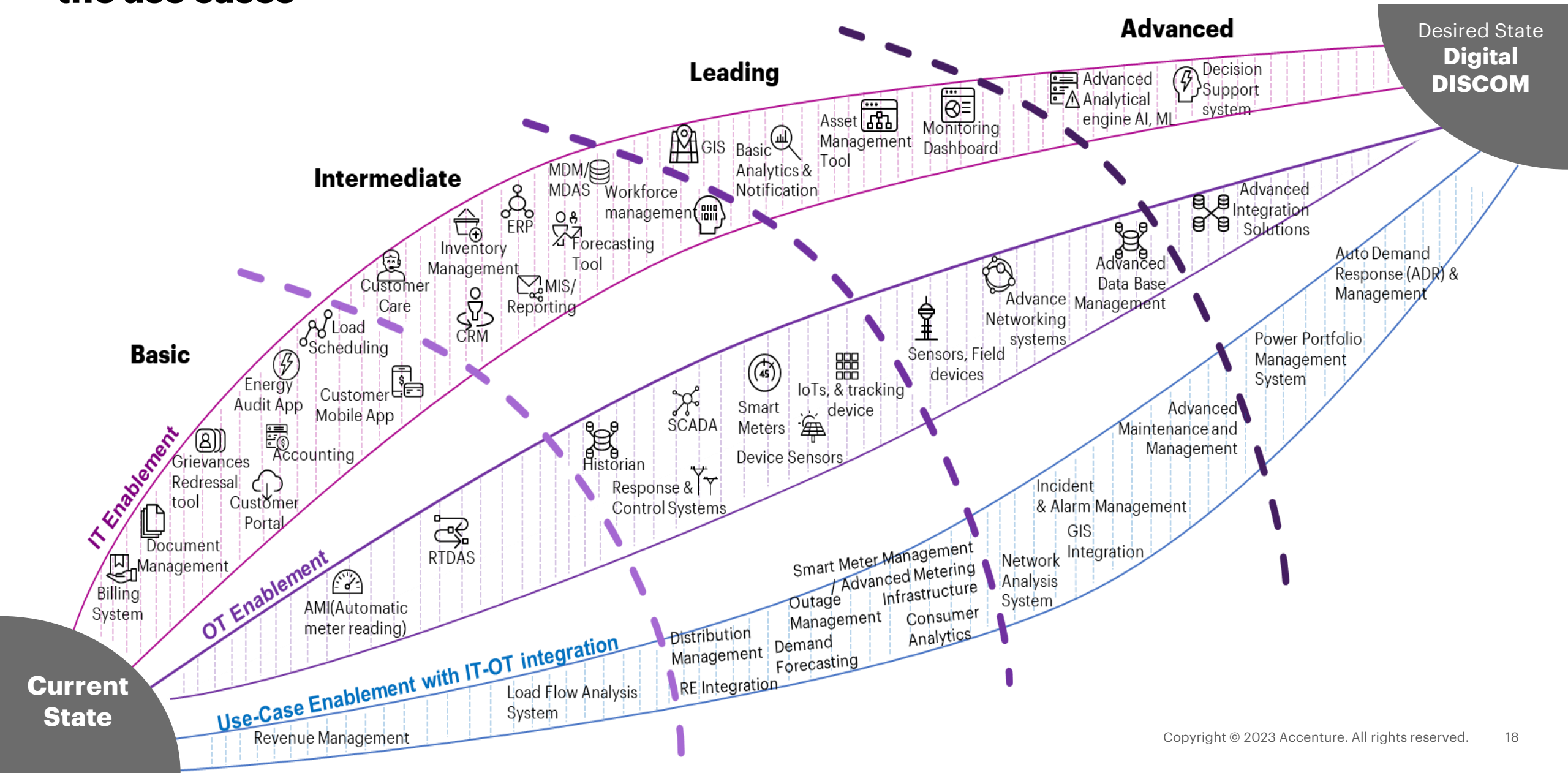


Use case enablement indicating interaction of different systems
Peak Deficit Management

Illustrative



A typical DISCOM digitalization pathway highlighting the maturity levels and the use cases



Thank you