



POWERING DELHI  
EMPOWERING CONSUMERS



# Digitalization of Utilities, Digitalization Roadmaps; Digital Twins



**Vishnu Shankar Srivastava**  
ISGF :- 21<sup>ST</sup> March 2025





## Vishnu S. Srivastava

*BSES Rajdhani Power Ltd.*

### **Current Profile-:**

Network Operations- Strategy & New Innovation.

### **Education-:**

B. Tech. Electrical & Electronics Engineering .

PGPBM from IMT, Ghaziabad.

Currently Pursuing Doctorate in Environment , Energy & Sustainability from EU global Business School.

### **Personal-:**

Fortunate to have a happy family consisting of a wonderful wife and two children.

**Past Experiences-:** 20+ years of Diverse experience with organizations like BCH, Areva, ABB & Schneider Electric.

### **Professional Experiences-:**

Proven track record of successfully leading cross-functional responsibilities, including: P&L, Business Development, Relationship Management, Strategic planning, Market Research & complete range of sales / marketing activities.

A strong Team Leader, Training, Coaching & Mentoring group of professionals to run extra miles with exceptional consensus building, negotiation and interpersonal skills.

Systematic & organized with quick adaptability to changing the current market trends.

### **Extracurricular activities-:**

Marathon runner, conquering more than 800 kilometers and participating in over 30+ marathons. Nature enthusiast, actively engaged in GREEN initiatives and the exploration of diverse flora and fauna throughout the country.

The background features a collage of Indian landmarks including the Taj Mahal, the Qutub Minar, the Gateway of India, and the Lotus Temple. A large, stylized line graph with a red-to-yellow gradient and a green-to-green gradient rises from the left towards the top right. The entire scene is set against a light green and yellow background with decorative floral patterns in the corners.

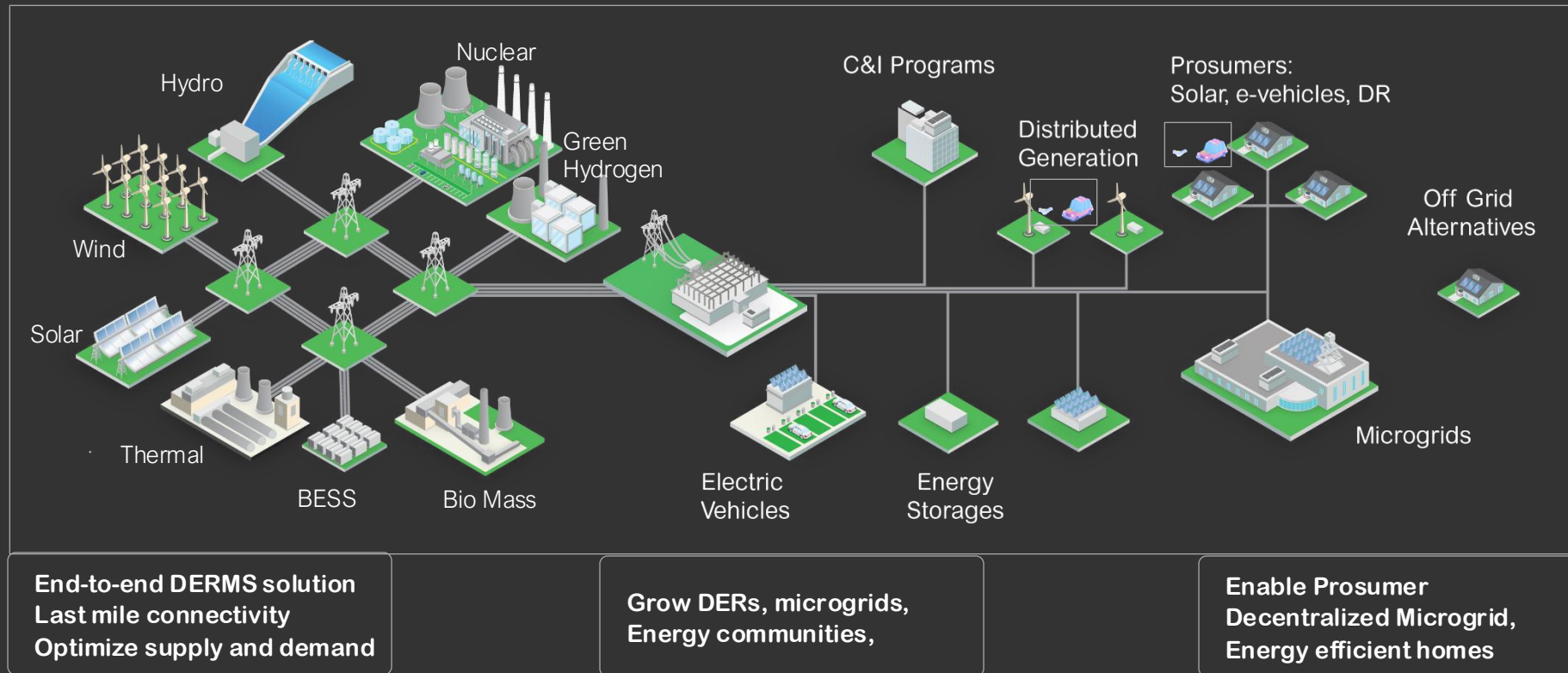
**BSES: 22 years of serving the National Capital**

**BSES**



# Future Energy Landscape- :

## Seamless Connectivity : The New Ecosystem for End-to-End Integration.



# Major Challenges for Electrical Distribution Network

## DER integration.

What if you could integrate endless DER and supply green energy at superior consumer value, while minimizing investments and strengthening grid safety, reliability, and efficiency?

## A self-immune grid.

What if you could shrink the impact of severe weather events with real-time information, fast automation, and integrated outage response?

## Digital grid management.

What if you could leverage artificial intelligence to optimize grid operations and planning?

## Changing Revenue Model.

What if you could put off capital investments and slash O&M costs, while smoothly adopting a model that solidifies your utility's future?

THINK ABOUT IT

## Cyber risk.

What if you took a holistic, multi-faceted, risk-based approach to fight cyber attacks that can damage or destroy key network assets?

## Network losses.

What if you could cut network losses and supply energy at a fairer cost?

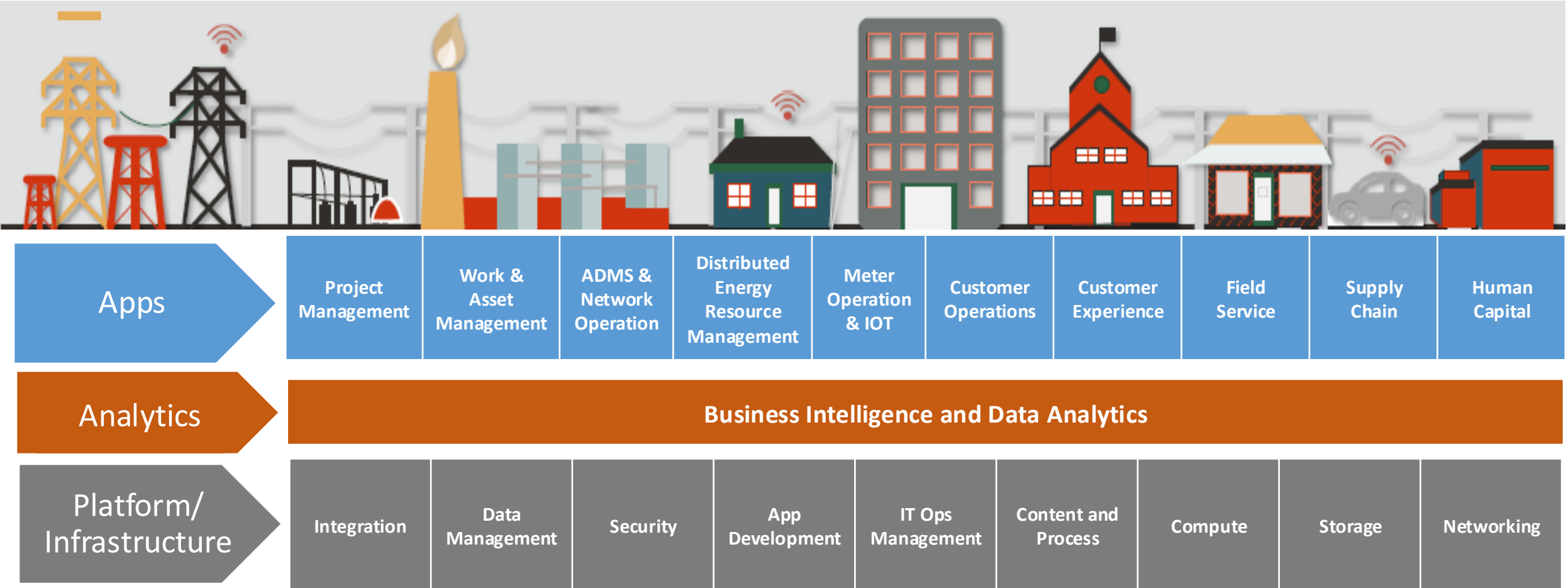
## Data as the new energy.

What if you could create data-driven relationships with your customers and fend off commoditization by new players, such as digital B2C giants who could offer free energy in exchange for personal data?

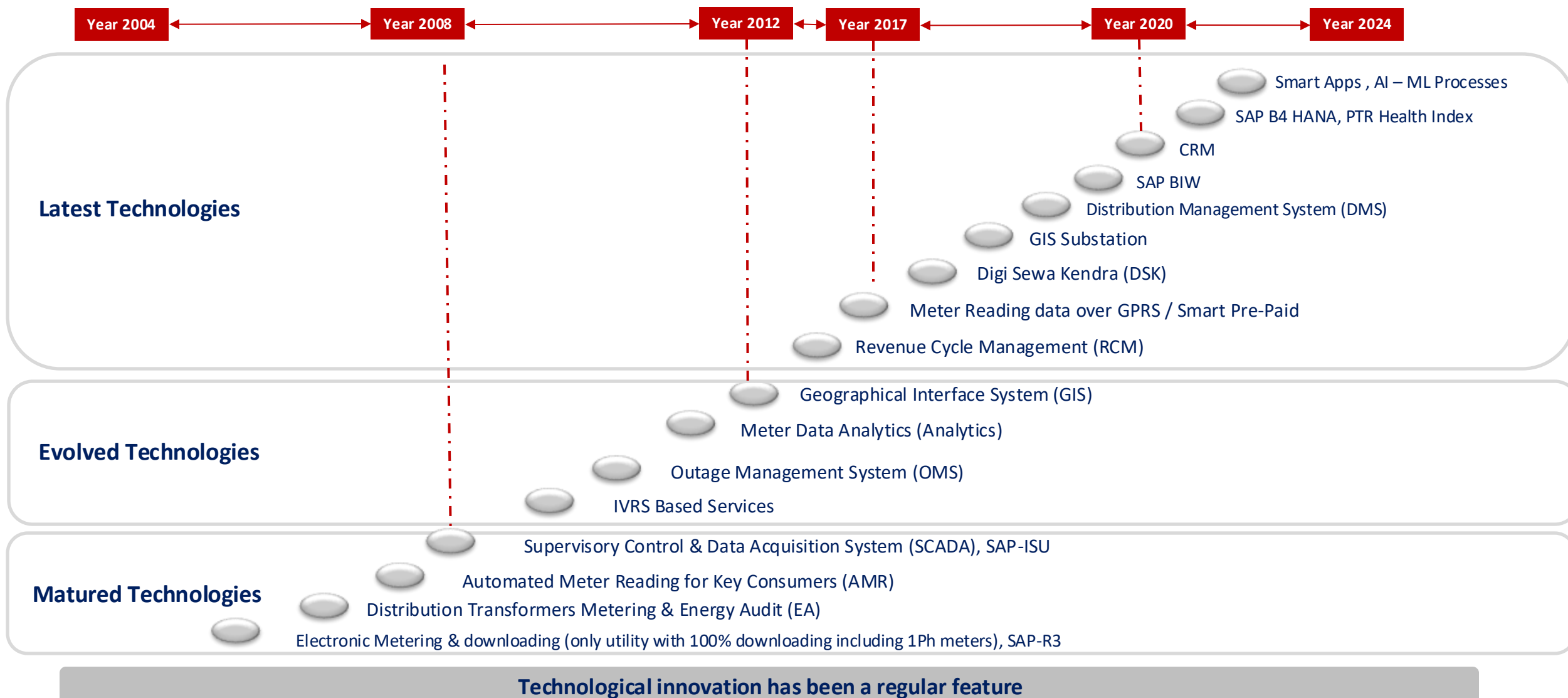
## The new energy consumer.

What if you could turn prosumer into partners with comprehensive behind-the-meter services?  
What if you could organize and operate local energy communities?

# Capabilities for Future Ready Utility



# Technology Journey so far at BSES



DMS – Distribution Management System, DERM – Distributed Energy Resource Management, ADR – Auto Demand Response, EV – Electric Vehicle, CRM – Customer Relationship Management



# Digitalization Roadmap –Future Project and Initiative.

## Asset Operations

- IOT based condition monitoring
- IoT Based DT Health Monitoring for critical equipments and Predictive Analytics
- Digital Twin- Predictive Asset Mgmt.
- Automation of BESS

## Network Operations

- SCADA Upgrade
  - DERMS
  - ADMS
- AI ML Powered based Procurement Optimization
- Automation of Long-Term bill processing
- Mobile App for Feeder Data Analytics
- AI ML Powered Load Forecasting

## Device Operations

- Smart Metering / AMI
- Warranty Management
- Safety App – Rakshak

## Customer Operations

- Data Lake
- Payment Behavior Analytics
- Management Dashboard
- Security Operation Center (SOC)
- Advanced Analytics
- Upgrade to SAP S4 HANA

## Customer Experience

- Gen AI Powered Services / ChatBOT
- Solar Portal
- Generation based incentive
- Revamping of Power App
- Behavioral Energy Efficiency (BEE) Program
- Blockchain for Energy Trading and P2P contract management



# Electrical Management System – Digital Twin

## Operational Advantages:-

- Predictive Maintenance
- Real Time Monitoring
- Optimized Energy Distribution
- Improved Fault Detection

## Planning & Design Advantages:-

- Virtual Testing
- Network Planning
- Scenario Simulation

## Customer Centric Advantages:-

- Personalized Energy Management
- Proactive Outage Management

## Cybersecurity Advantages:-

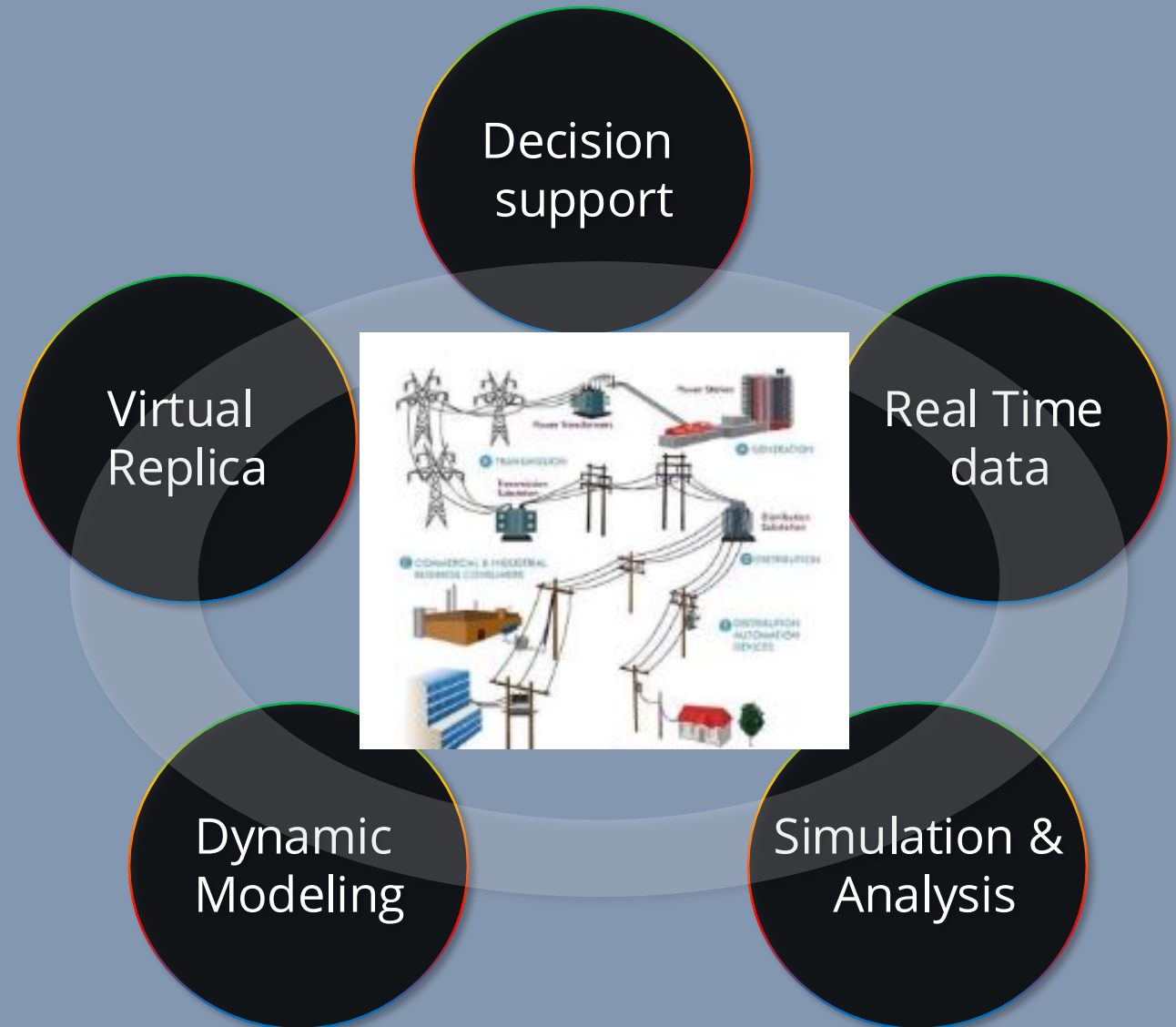
- Enhanced Cybersecurity
- Real-time Threat Detection

## Business Advantages:-

- Increased Revenue
- Improved Regulatory Compliance
- Data-Driven Decision Making

## Environmental Advantages:-

- Reduced Energy Waste
- Increased Renewable Integration



# Multi-Dimension Digital-Twin Platform



## Design

- Smart Visualization
- Rule-Based, Standards
- Integrated Network Analysis
- Collaborative Engineering
- Project Management
- Intelligent Analytics

## Automation

- Proactive Control
- Rule-Based Control
- Model-Based Control
- Situational Awareness
- Intelligent Optimizations

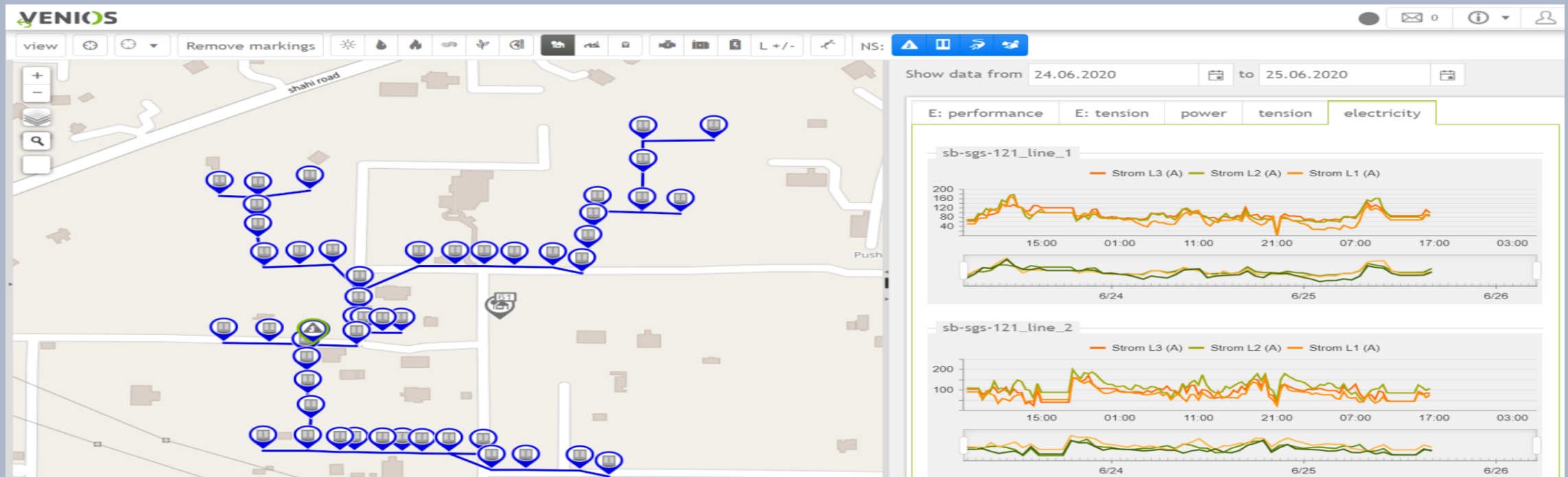
## Operation

- Digital-Twin Base Monitoring
- Operational Awareness
- Predictive Simulation
- Real-Time Analytics
- Optimization Solutions
- Operator Training Simulator

# Digital Twin on LT Network

## Digital Twin Pilot:

- ✓ Enables utility to easily **monitor, analyse** their LT electricity grids in real time.
- ✓ Provides **transparency** into grid domains via **real-time calculation** and depiction of the distribution grid below classic SCADA systems
- ✓ The platform provides information and intelligence by combining data from **GIS**, **asset management** and **other systems** and integrates **smart meter data** and **high-resolution power analysers** like the **Smart Box**.
- ✓ The right measure to integrate **renewable energy sources**, **electric vehicle charging** and **flexibility management** Cloud based massive parallel **processing** of various data sources and models.



# Thank You

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