

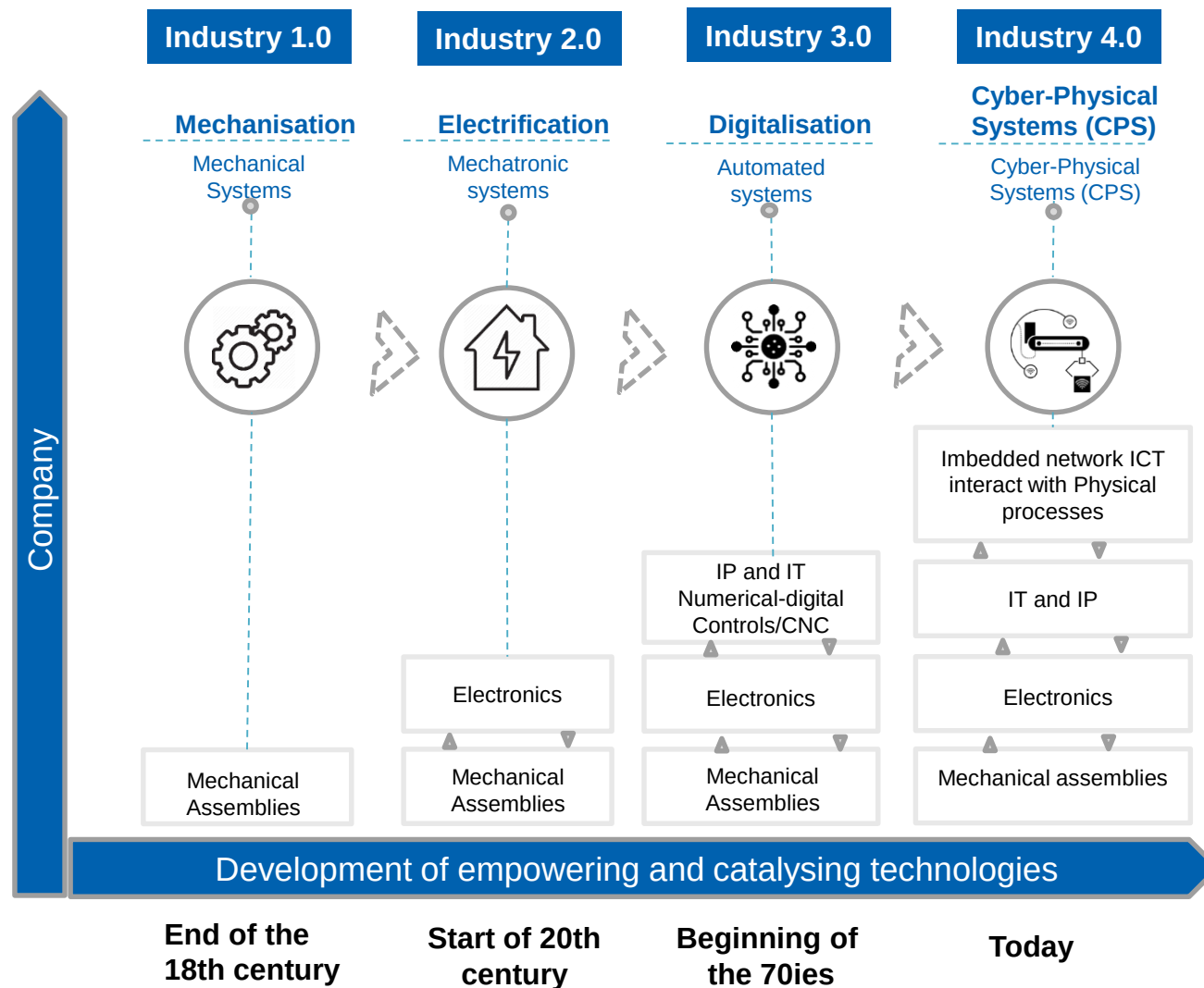
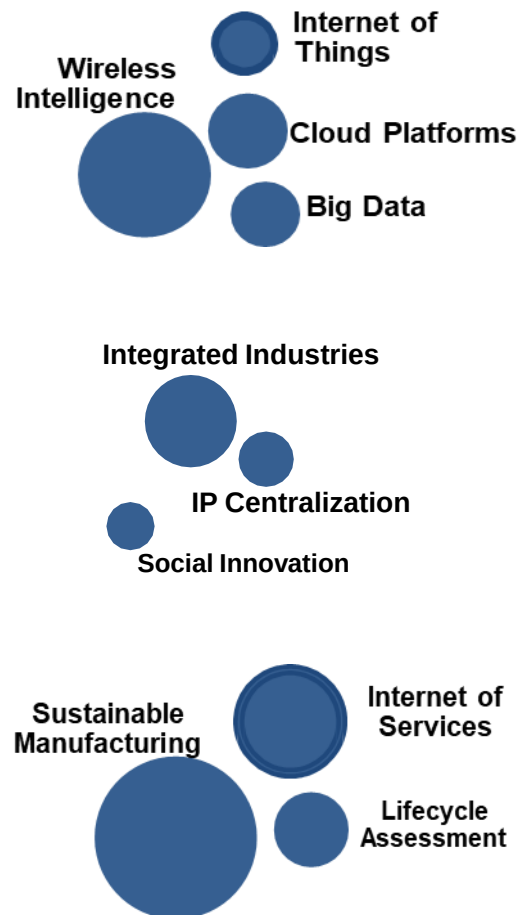


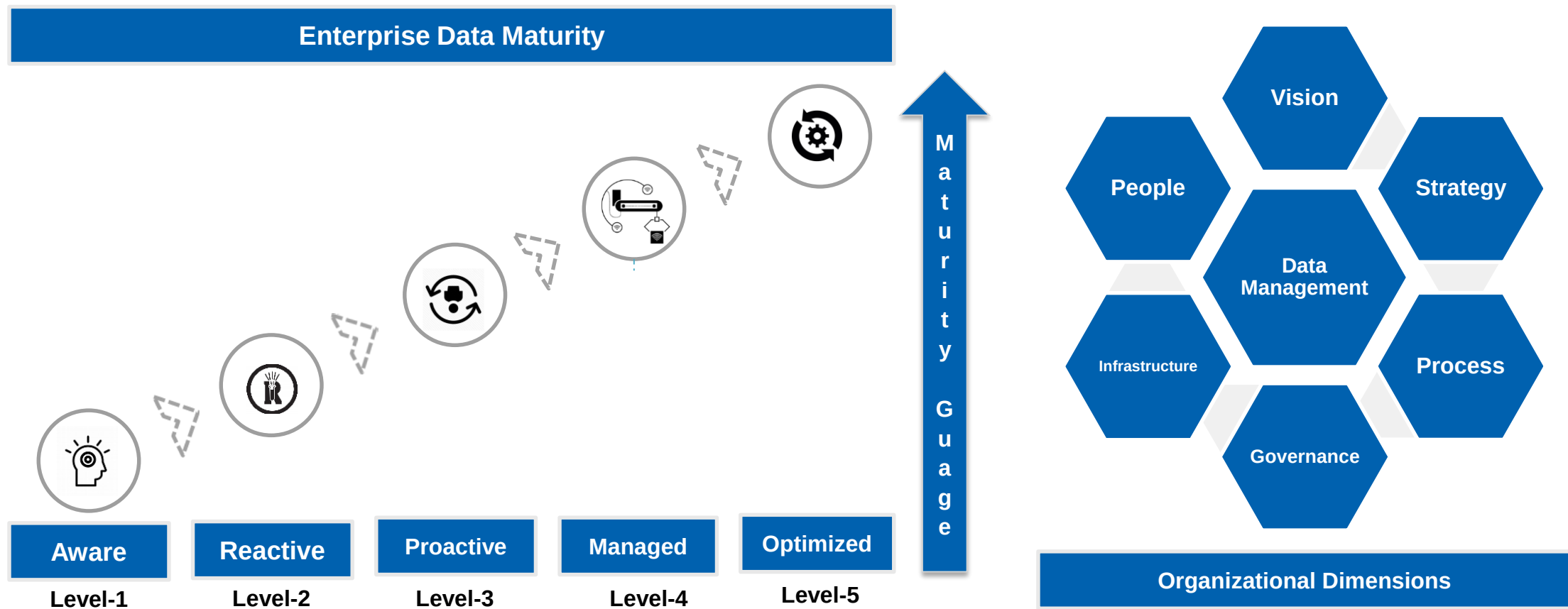
**FORIS DIGITAL FACTORY**  
**INDUSTRY 4.0 SOLUTION**



Sitronics Telecom Solution Pakistan

## Industry of The Future





- **Big Data Ingestion Engine**
  - Structured
  - Semi Structured
  - Unstructured
- **Data Lake (Data Repository)**
- **BI Portal**
  - Reports, Dashboards
  - Thresholds, Alerts
  - Self Service Analytics

- **Industry Knowledge**
  - ERP Experience
  - MRP Experience
  - Mechatronics Experience
- **3D Visualization**
- **Sensors Data Integration**
- **Multi Device Capability**

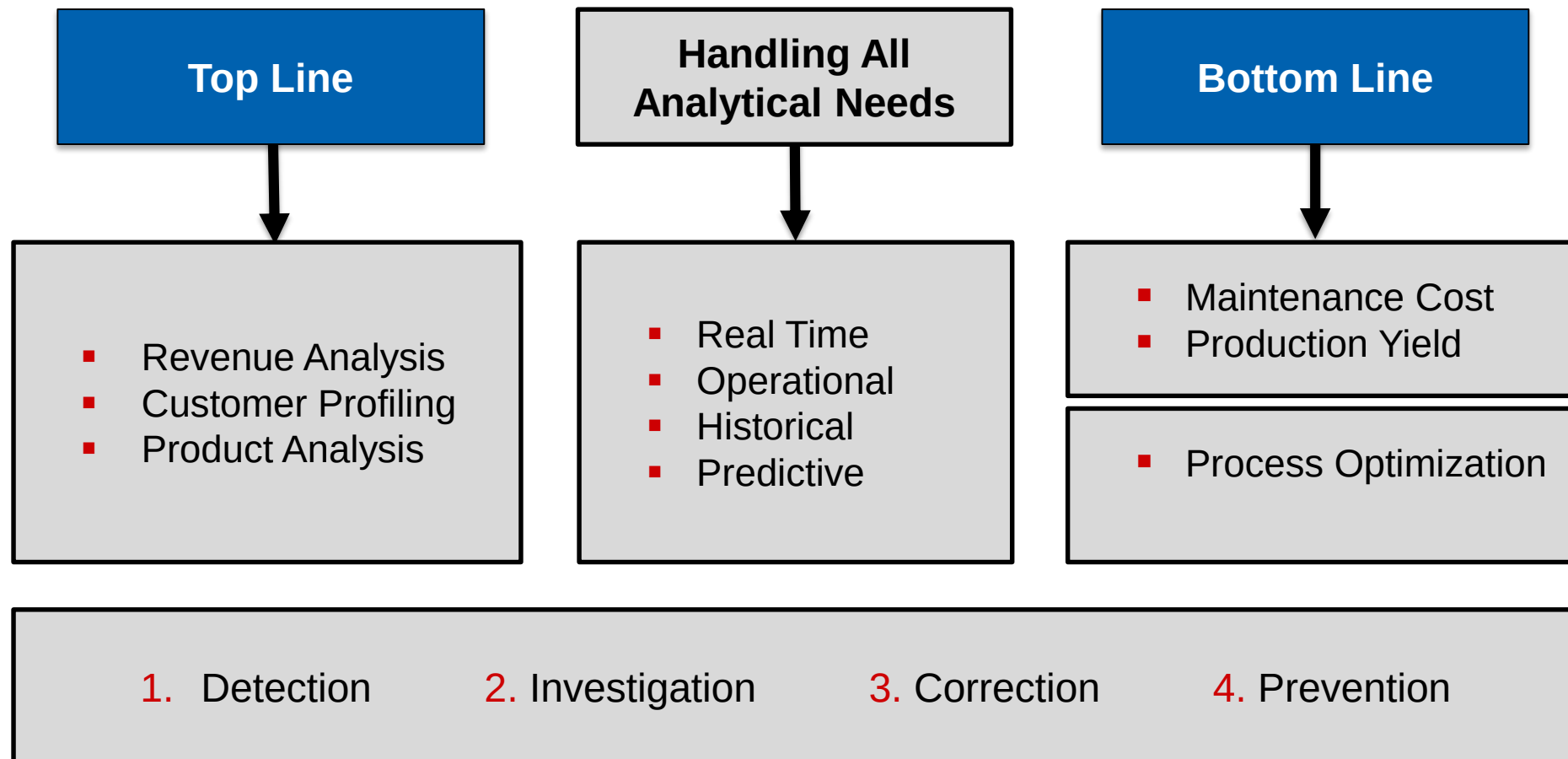


**NVision**  
CZECH REPUBLIC

# **SOLUTION DESIGN & DEVELOPMENT STRATEGY**

**FORIS Digital Factory – Industry 4.0 Solution**

**Designed On The Digital Revolution**



## Manufacturing

- Quality Assurance
- Production Performance
- Line Efficiency
- Cost Analysis
- Defect Analysis
- Average Downtime
- Cycle Time Analysis
- Production Vs Installed Capacity
- Workforce Performance Analysis

## Supply Chain

- Average Item Inventory Holding
- Days of Inventory Supply – Lead Time
- Finished Goods on Hand – Customer Orders
- Inventory Turnover
- WIP Cost
- Inventory Cost Vs Inventory Levels
- Sales Analysis

## Financial

- Cash Cycle Time
- Operating Expense
- Total Sales
- Sales Analysis (By product, brand, channel, territory)
- Sales Target
- Sales Growth
- Cost of Goods Sold
- Procurement Cost
- Labor Cost
- Maintenance Cost

Digitization of Products &  
Services

Digitisation & Integration of Vertical  
& Horizontal Value Chain

Digital Business Models  
& Customer Access



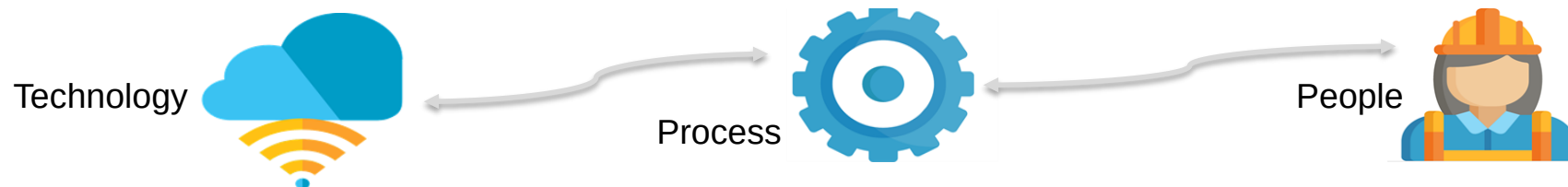
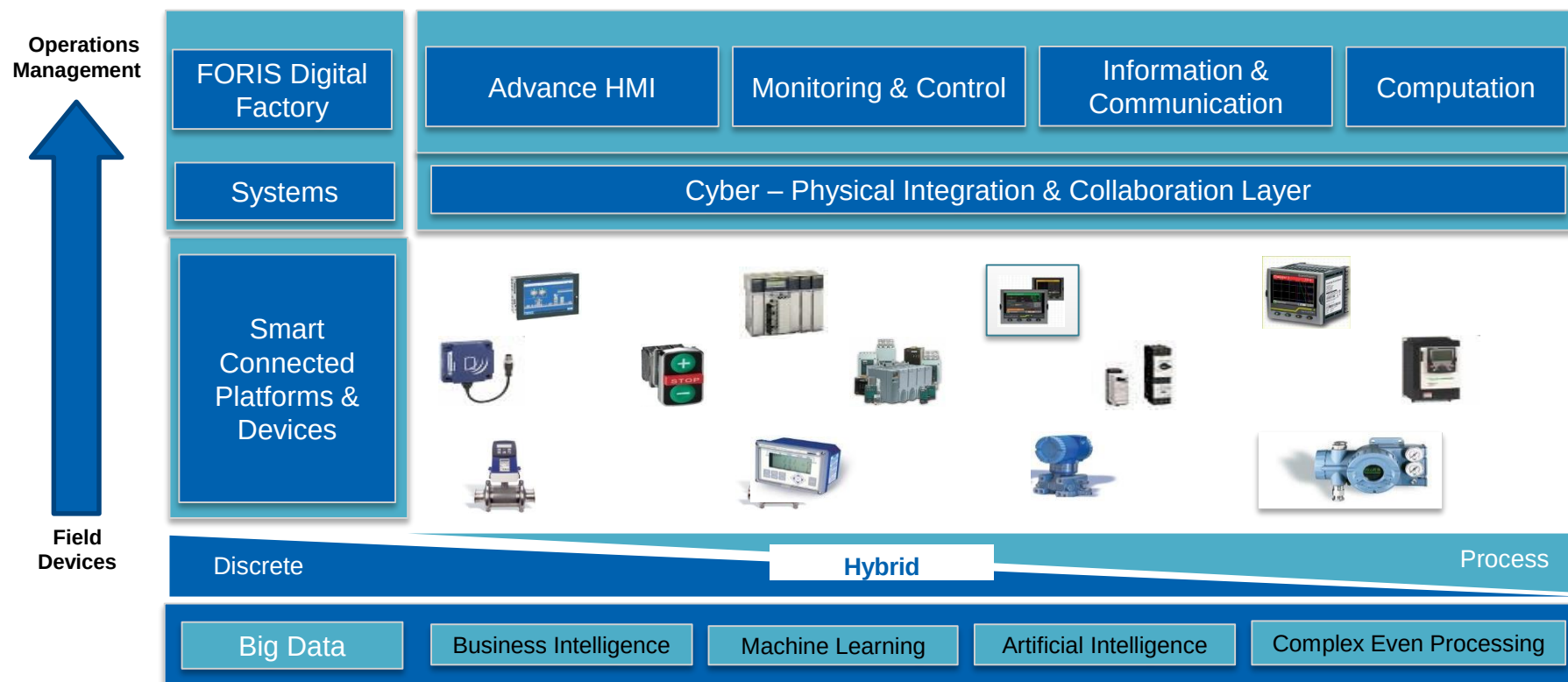
**NVision**  
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## **SOLUTION ARCHITECTURE**

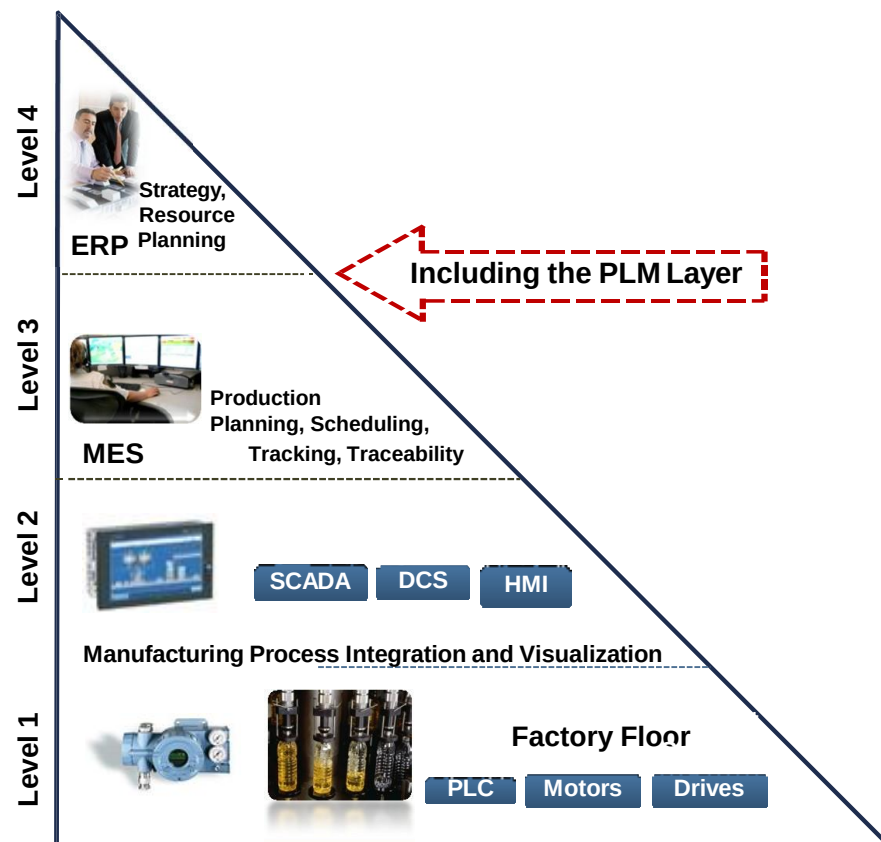
**FORIS Digital Factory – Industry 4.0 Solution**

**Designed On The Digital Revolution**





## Enterprise Pyramid in Transformation

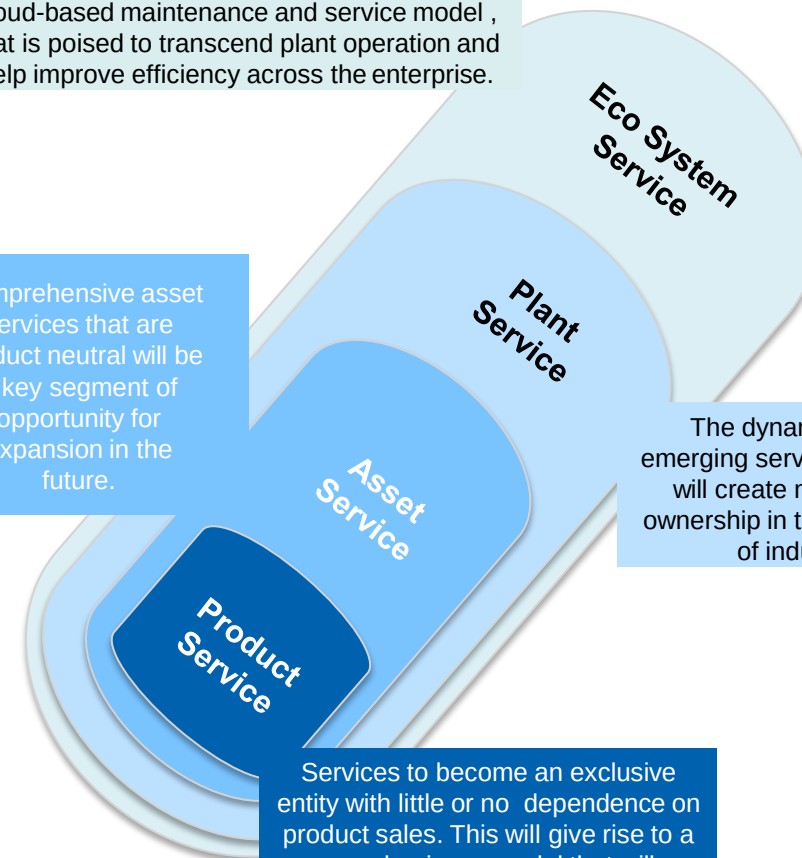


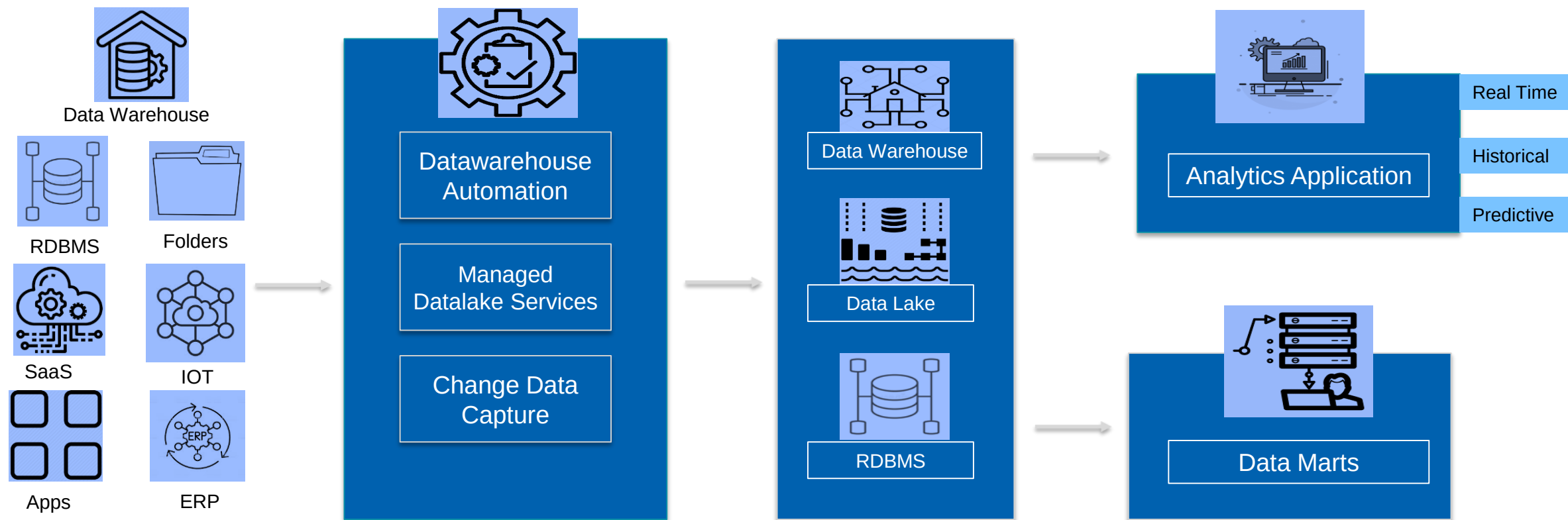
The amalgamation of Internet of Services with the Internet of Things will give birth to a new cloud-based maintenance and service model, that is poised to transcend plant operation and help improve efficiency across the enterprise.

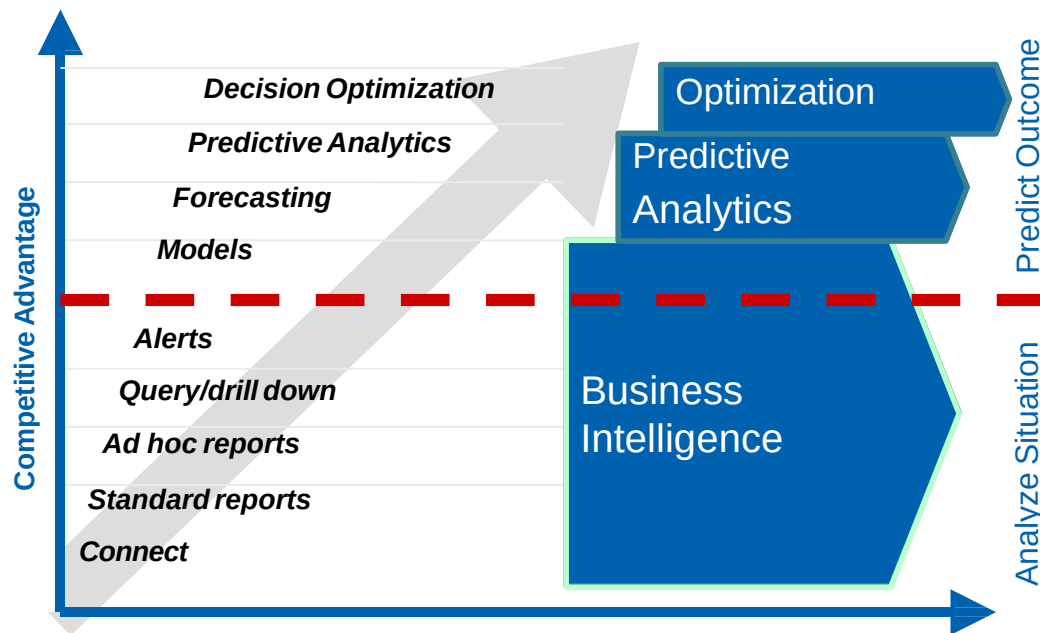
Comprehensive asset services that are product neutral will be a key segment of opportunity for expansion in the future.

The dynamics of the emerging service framework will create new seats of ownership in the value-chain of industries

Services to become an exclusive entity with little or no dependence on product sales. This will give rise to a new business model that will promote "product as a service"



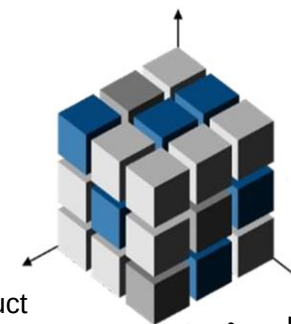




Real-time Decision  
Support Artificial  
Intelligence  
Optimization  
Simulation  
Water & District Heating

Enterprise Data Historian  
Real-time  
Historian  
Wide Area SCADA Wireless  
instruments & Infrastructure

- **Real Time Monitoring**
  - **Plant Efficiency**



- Product
- Cost
- Quality
- Time
- Suppliers
- Down Time
- Overtime
- Maintenance Cost
- Line Performance
- Asset Utilization

From Smart Connected Products through to Big Data Analytics, Process Optimization. FORIS Digital Factory enables manufacturers with services, systems and technology to reduce operating expenditures and achieve measurable efficiency.



**NVision**  
CZECH REPUBLIC

Real-time monitoring of  
Resources and System  
Performance



Fully integrated with end-  
end solution components  
and services

## **FORIS Monitoring Panel**

Foris Process Monitoring x Dashboard x

← → ↻ ⓘ 🔍 ☆

ICE PROCESSOR DETAILS VIEW ...

| #  | Site IP | Site Name                   | Status          | Today Files ↑ | LastFile Time          | Old Files |
|----|---------|-----------------------------|-----------------|---------------|------------------------|-----------|
| 1  |         | IceProcessor_2              | RUNNING         | 0             | 2019-01-29 04:36:23 PM | 0         |
| 2  |         | IceProcessor_CGSN_OLDFILES  | RUNNING         | 0             | 2019-01-29 04:36:23 PM | 0         |
| 3  |         | IceProcessor_MMSC           | RUNNING         | 0             | 2019-02-01 10:36:03 AM | 0         |
| 4  |         | IceProcessor_MMSC_OLDFILES  | RUNNING         | 0             | 2019-02-01 10:36:03 AM | 0         |
| 5  |         | ICE Map Service             | RUNNING         | 1             | 2019-05-22 03:01:16 AM | 0         |
| 6  |         | IceProcessor_TAPIN          | RUNNING         | 1             | 2019-05-22 03:01:16 AM | 0         |
| 7  |         | IceProcessor_TAPIN_OLDFILES | RUNNING         | 1             | 2019-05-22 03:01:16 AM | 0         |
| 8  |         | IceProcessor_TAPOUT         | RUNNING         | 1             | 2019-05-22 03:01:16 AM | 0         |
| 9  |         | IceProcessor_SDPCS5         | RUNNING         | 784           | 2019-05-22 11:06:40 AM | 646       |
| 10 |         | IceProcessor_SDPCS5_8_3B    | RUNNING         | 784           | 2019-05-22 11:06:40 AM | 646       |
| 11 |         | IceProcessor_SDPCS5_OLD     | Status Changing | 784           | 2019-05-22 11:06:40 AM | 646       |
| 12 |         | IceProcessor_A              | RUNNING         |               |                        |           |
| 13 |         | IceProcessor_EMM_11_12      | RUNNING         |               |                        |           |
| 14 |         | IceProcessor_EMM_A_0        | RUNNING         |               |                        |           |
| 15 |         | IceProcessor_EMM_A_1        | RUNNING         |               |                        |           |



**SITRIONICS**  
Technology Solutions  
Innovative Analytics

Foris Process Monitoring x Dashboard x

ICE PROCESSOR DETAILS VIEW ...

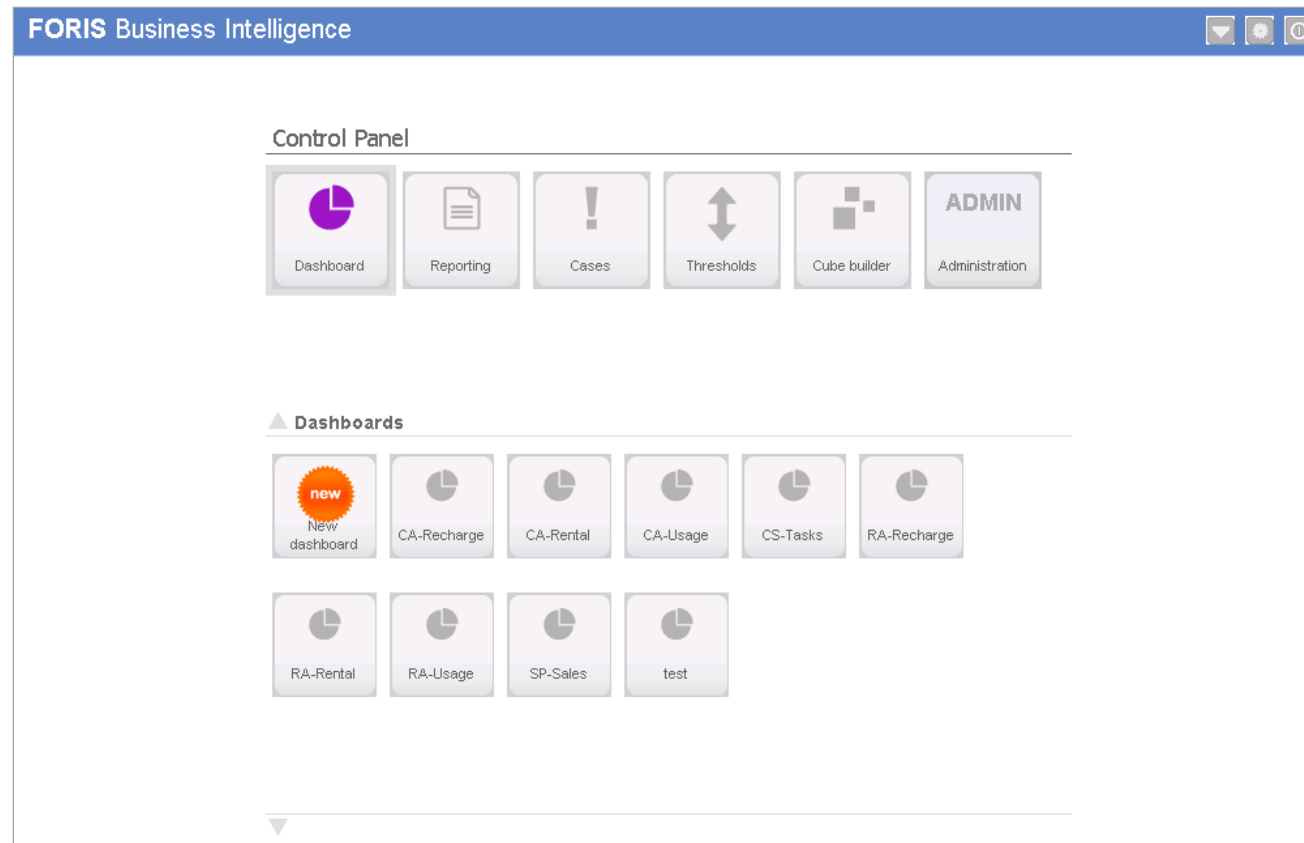
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| 5  |         | ICE Map Service             | RUNNING         | 1             | 2019-05-22 03:01:16 AM | 0         |
| 6  |         | IceProcessor_TAPIN          | RUNNING         | 1             | 2019-05-22 03:01:16 AM | 0         |
| 7  |         | IceProcessor_TAPIN_OLDFILES | RUNNING         | 1             | 2019-05-22 03:01:16 AM | 0         |
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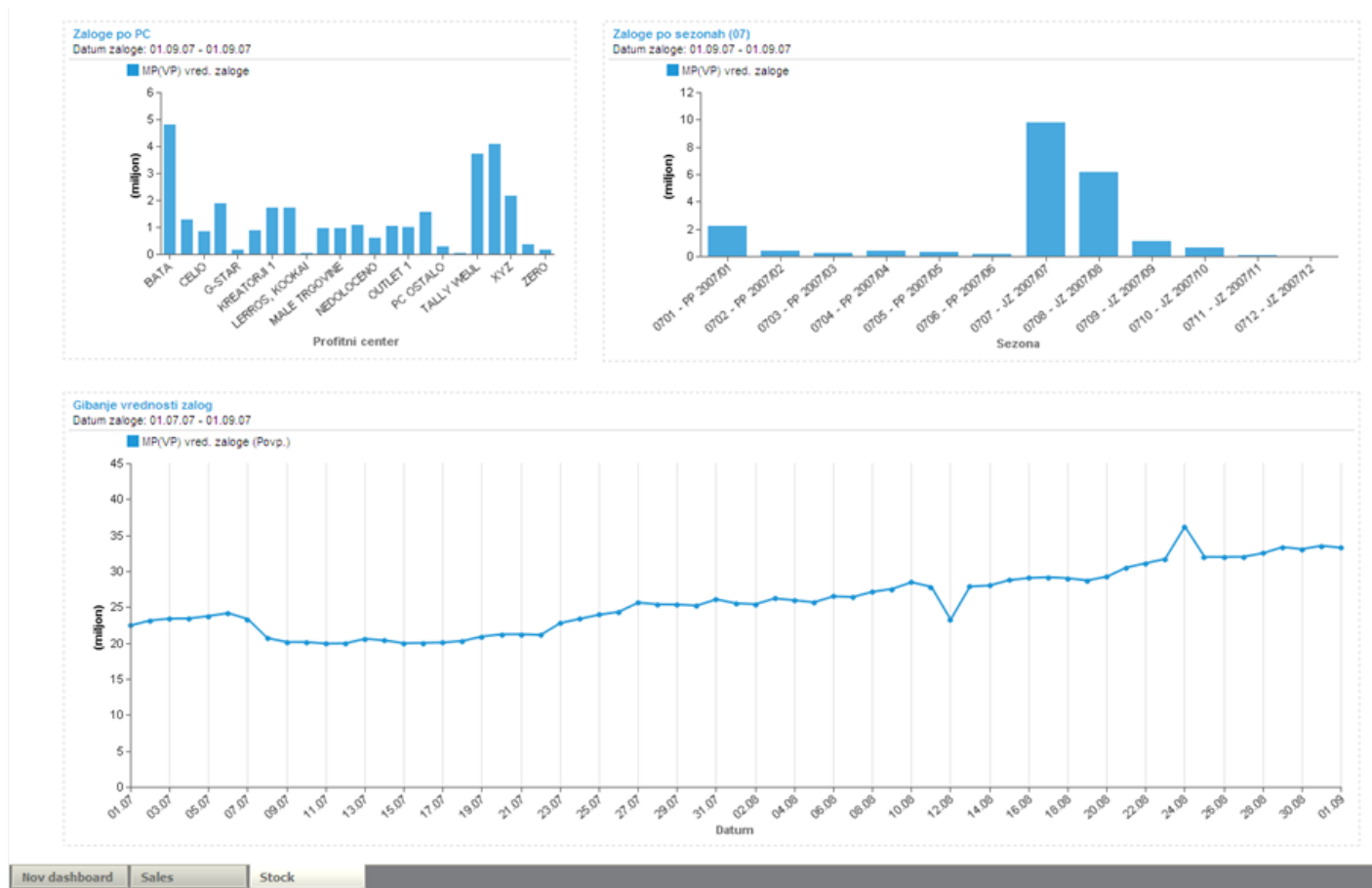


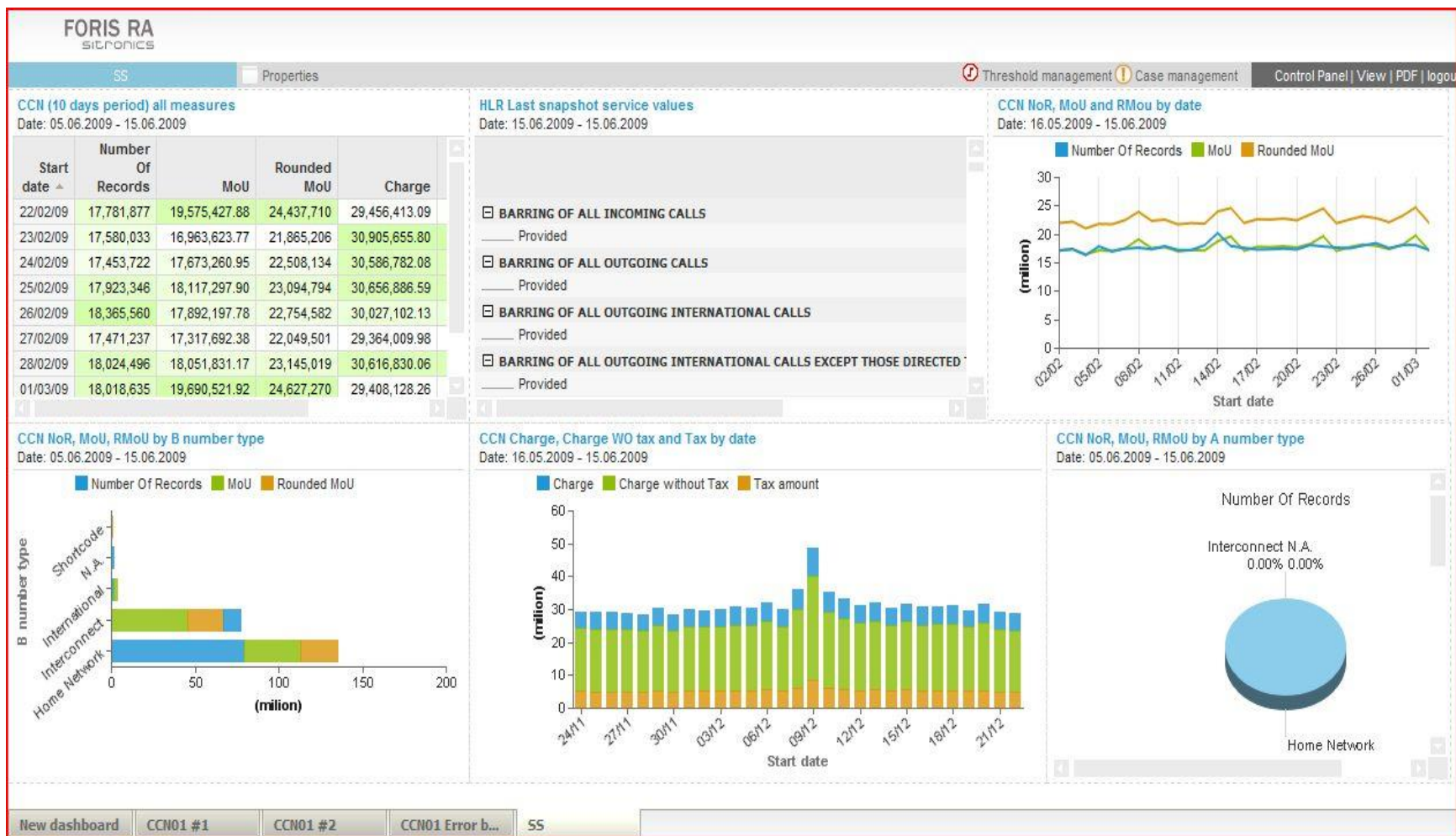
## FORIS Business Intelligence System

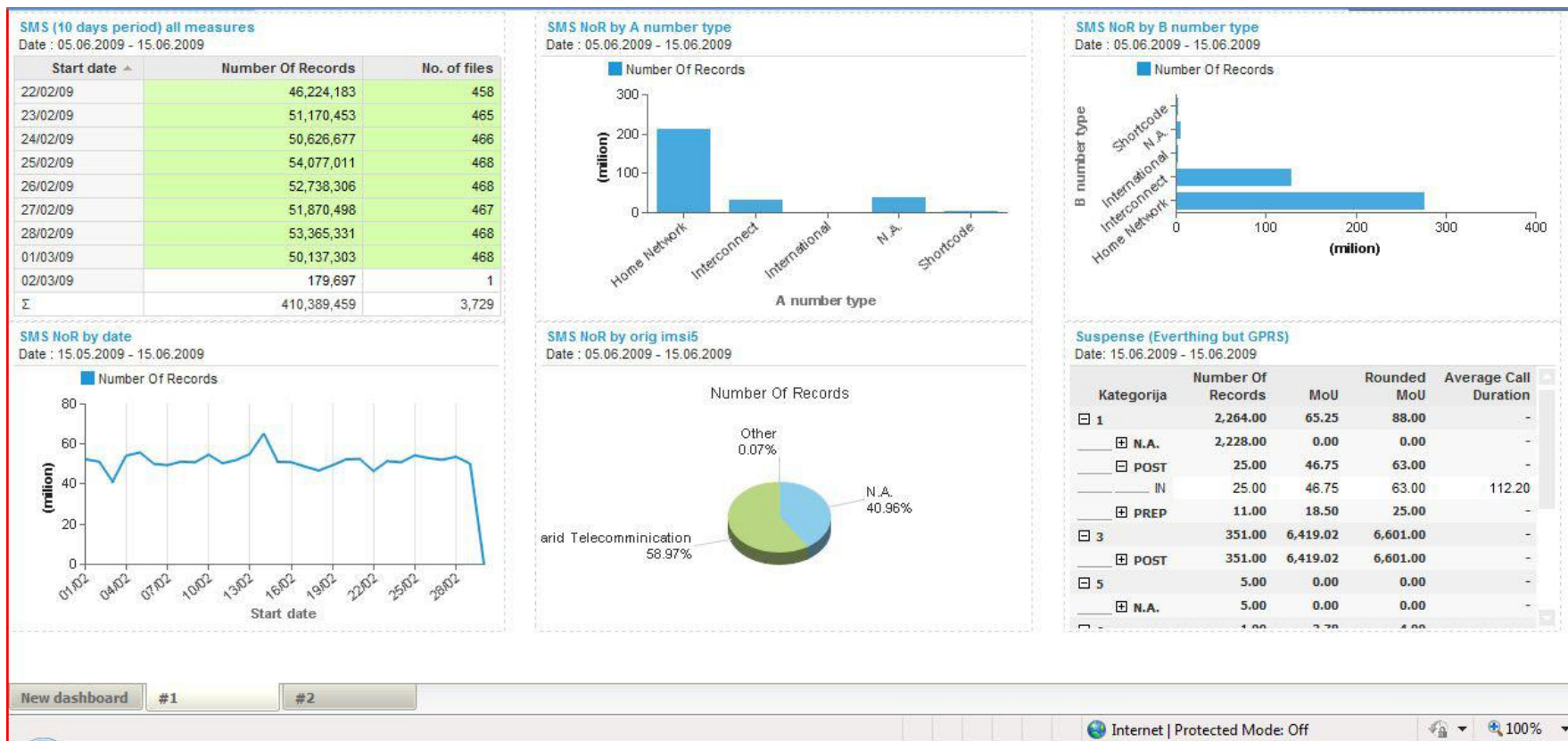




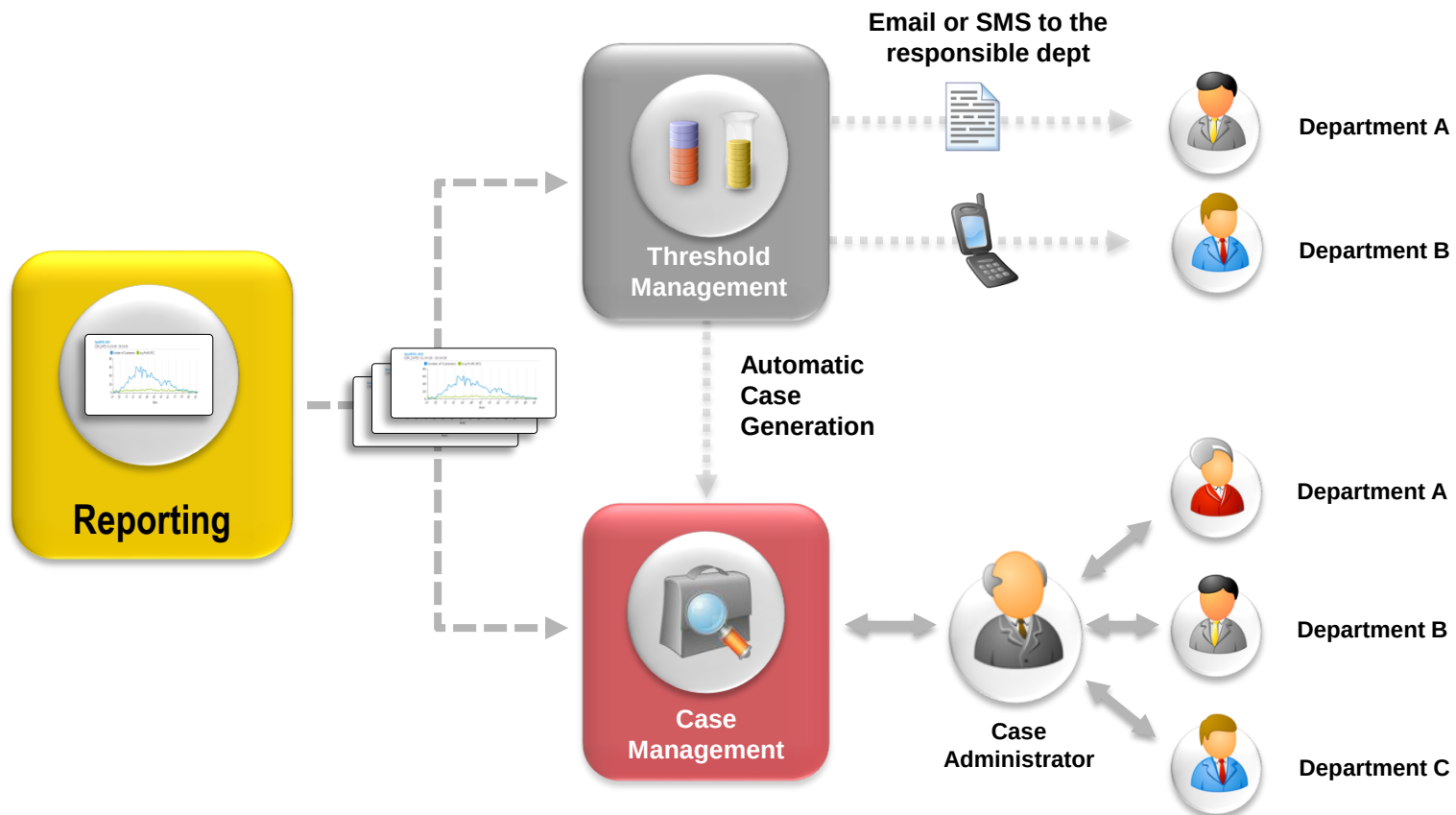
- FORIS RA lets users view multiple reports on a single screen, encouraging more holistic observation opportunities





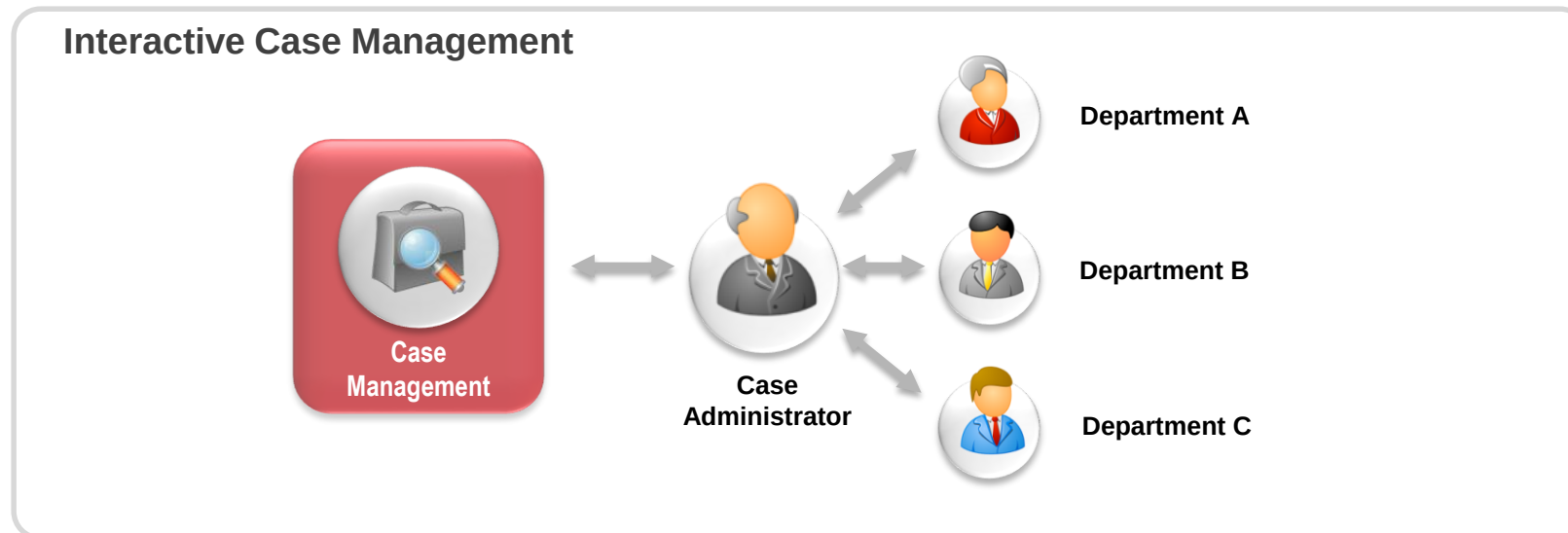


# Threshold & Case Management Overview



FORIS BI's **Case Management** is an integrated component that allows deviation issues to be logged and tracked as they are investigated

- ✓ Cases can be created automatically or manually
- ✓ Case Management allows problems to be tracked as they are passed between departments
- ✓ Information about the investigation's progress can be stored
- ✓ Provides a full audit trail of each case
- ✓ Must be 'closed' by a responsible department – control is maintained

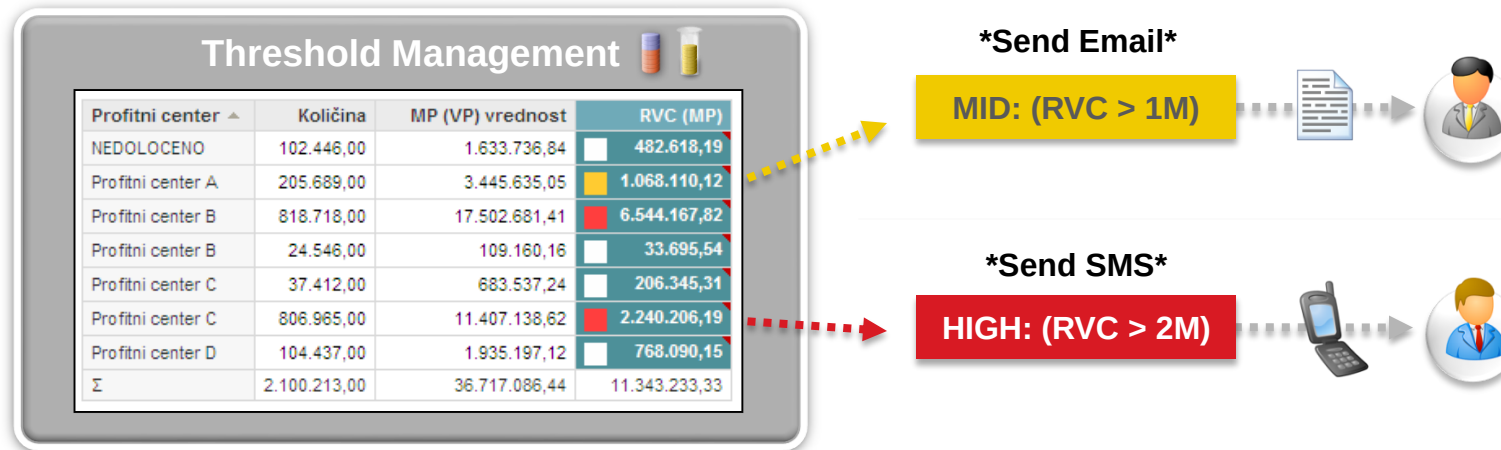




FORIS BI's **Threshold Management** is a component that maintains multi-dimensional thresholds to offer a more holistic view of operations:

- Thresholds can be placed on different dimensions or on a single cell
- Multiple levels available (low, mid, high) and each level can trigger different action, e.g.: automatically generate case, send SMS/email
- Thresholds are evaluated each time a report is refreshed

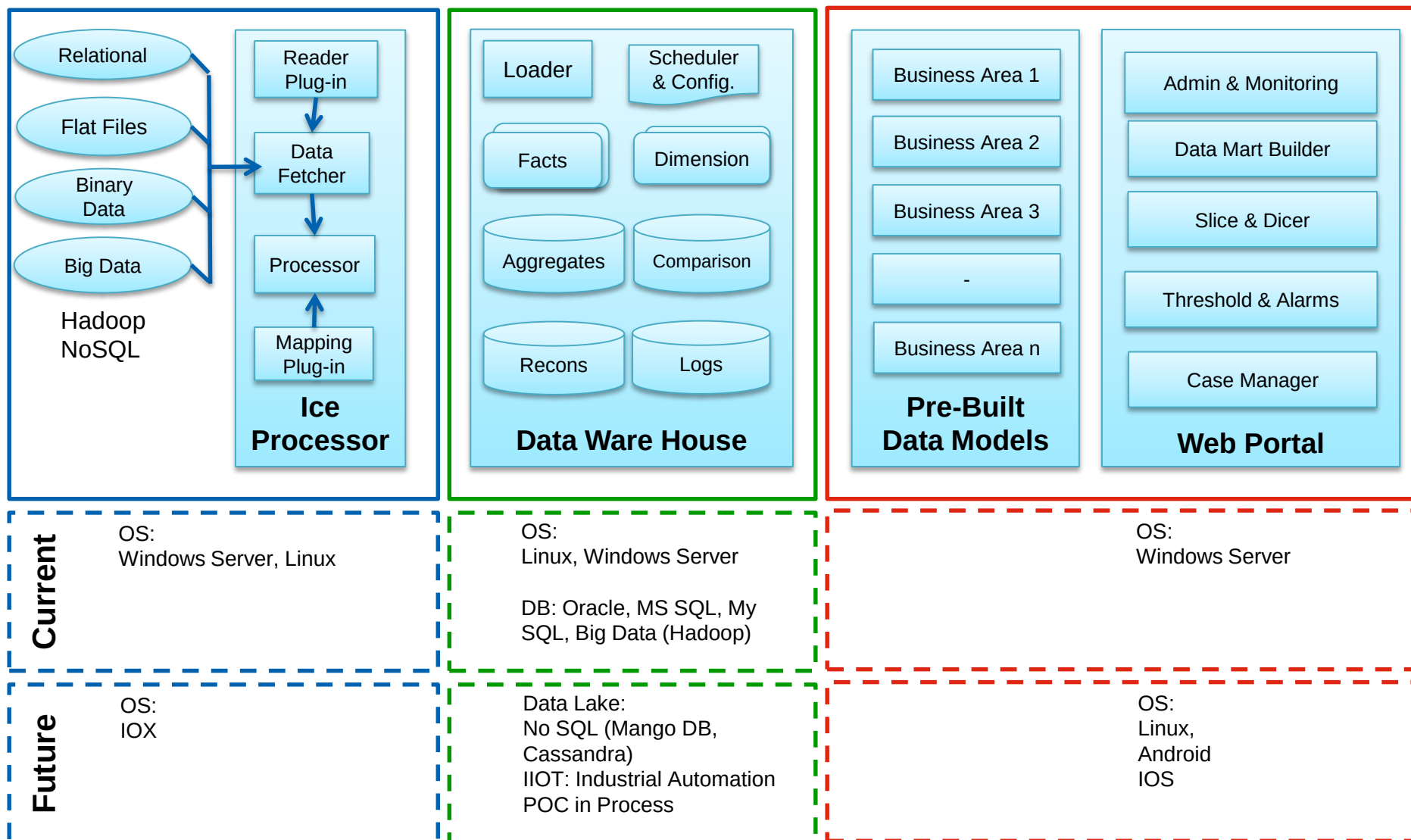
## Managing Thresholds through Alerts





# FORIS Product Development Roadmap

# FORIS Application Architecture Roadmap



# Product Development Roadmap

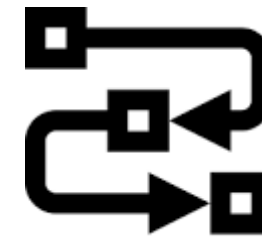
## (Jul 2019-Jun 2020)

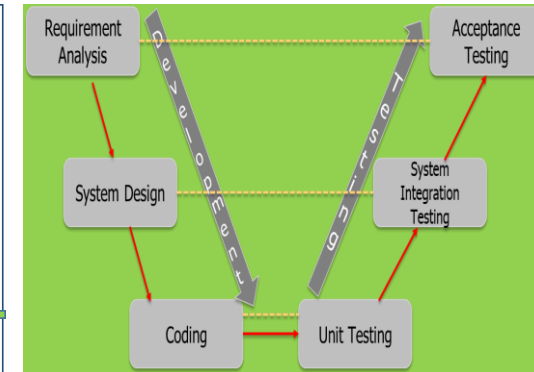
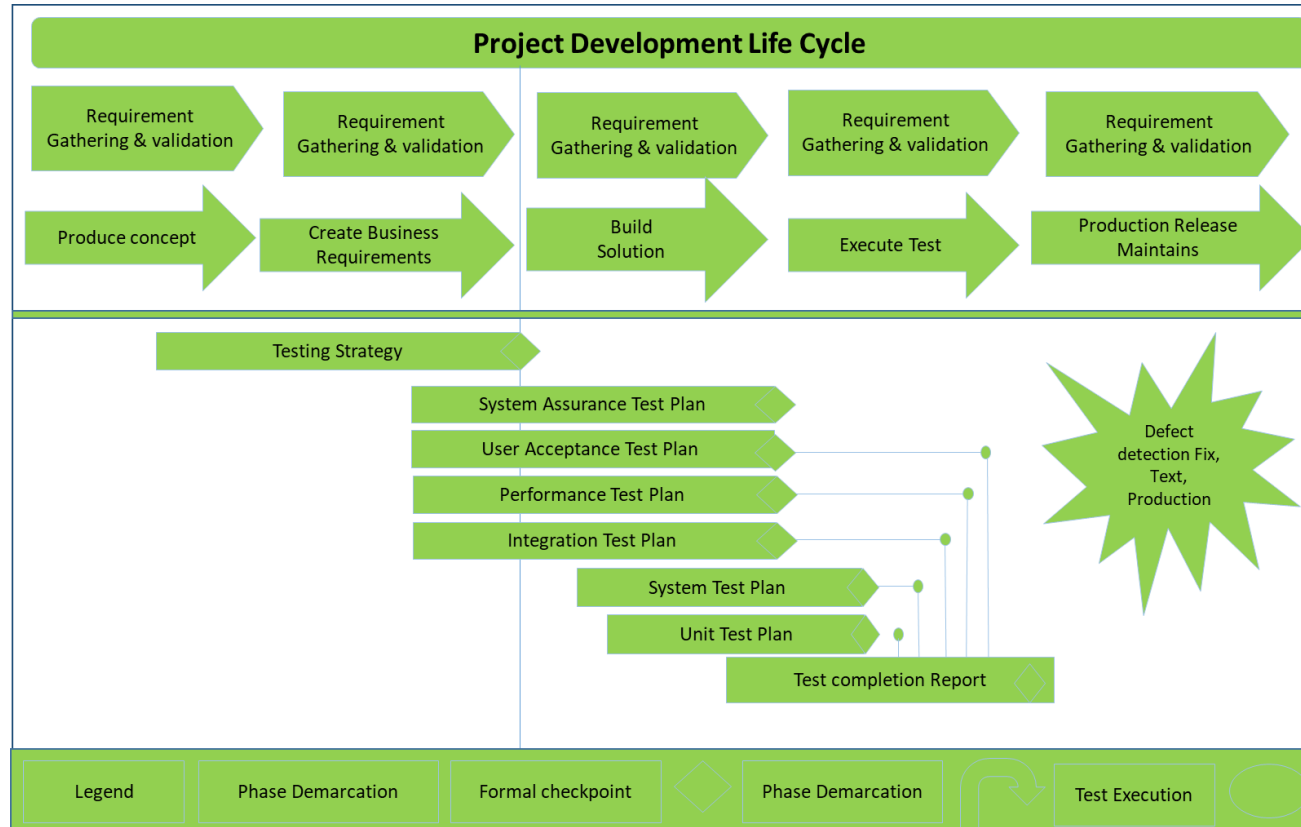
|          | 1 <sup>st</sup><br>Quarter                      | 2 <sup>nd</sup><br>Quarter | 3 <sup>rd</sup><br>Quarter | 4 <sup>th</sup><br>Quarter |
|----------|-------------------------------------------------|----------------------------|----------------------------|----------------------------|
| EDW      | AS IS Continue                                  |                            |                            |                            |
| BI       | SQL                                             | Advance                    | Interactive                | Configura                  |
|          | AS IS Continue                                  |                            |                            |                            |
|          | Enabled                                         | s                          | ds                         | Checks                     |
| RA       | Rules Based Alarms, Profiles Matching, Analyses |                            |                            |                            |
| FMS      | AS IS Continue                                  |                            |                            |                            |
| RE       |                                                 |                            |                            |                            |
| BIG DATA | R&D/Desi<br>gn                                  | Developm<br>ent            | Marketing                  | Marketing                  |



# FORIS Implémentation Méthodology

- Phased approach recommended – each phase managed as a project
- Focusing on early wins as soon as possible
- Allowing the correct identification and monitoring of each revenue stream (e.g. pre-paid, post-paid, interconnect, roaming, next-gen, non-usage)
- Balancing resource demands within both the customer and SITRONICS TS – allowing focus and thus balancing of risk
- This approach increases likelihood of getting early results and the manageability of the system by the customer as it moves into production





## Agile Deployment Method (Scrum)

- Incremental and Iterative model for product development
- The project is divided into Sprints of specified time lines
- Time lines will be agreed by the team during the periodic Sprint Planning Meetings

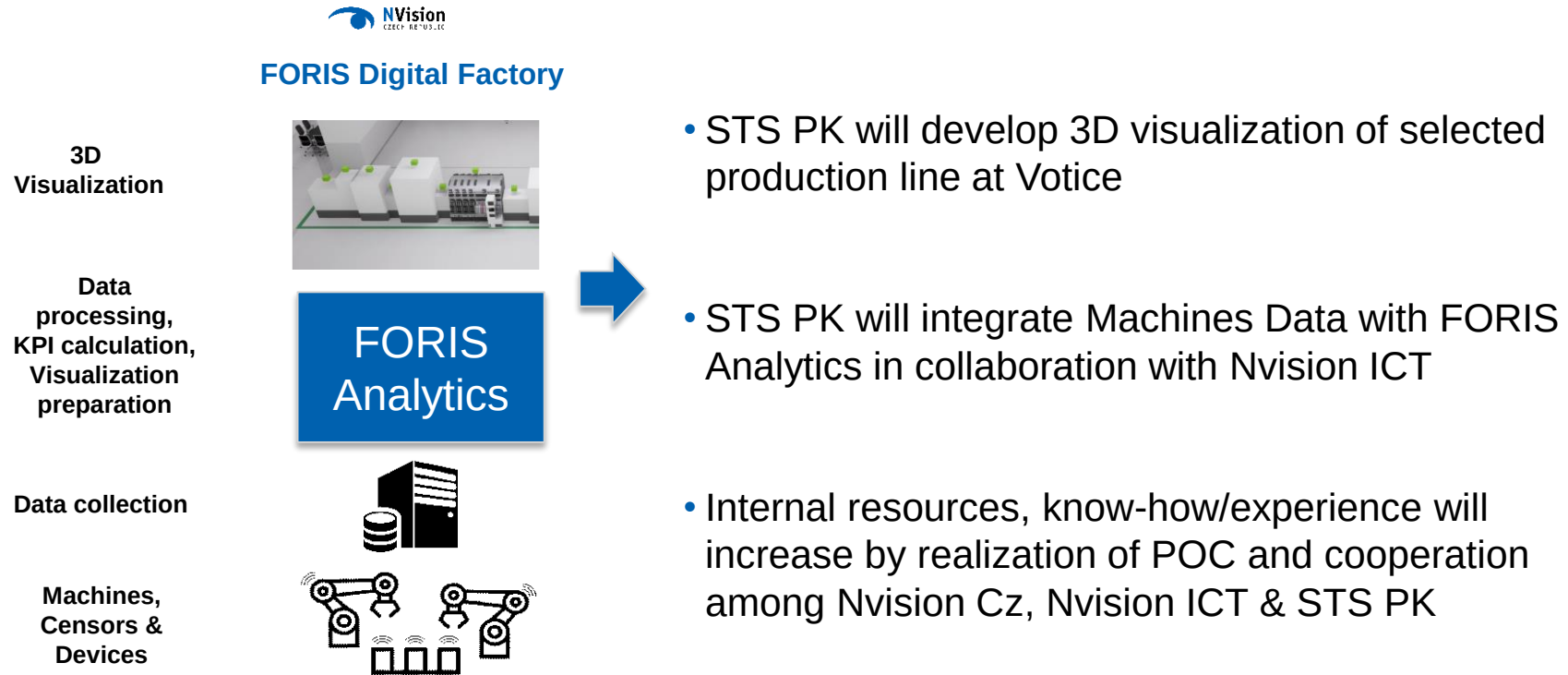


# Nvision Czech Republic

## Case Study

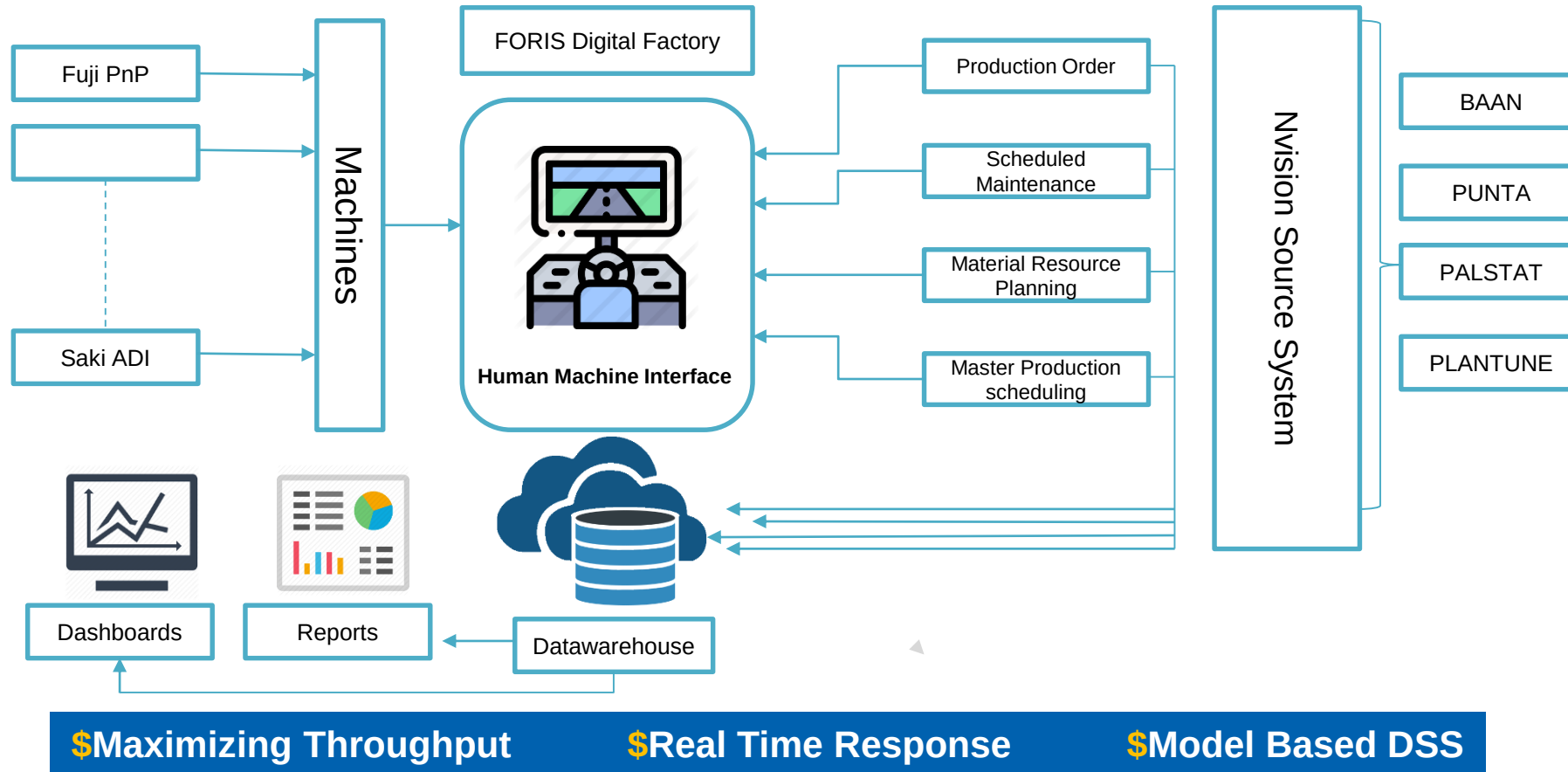


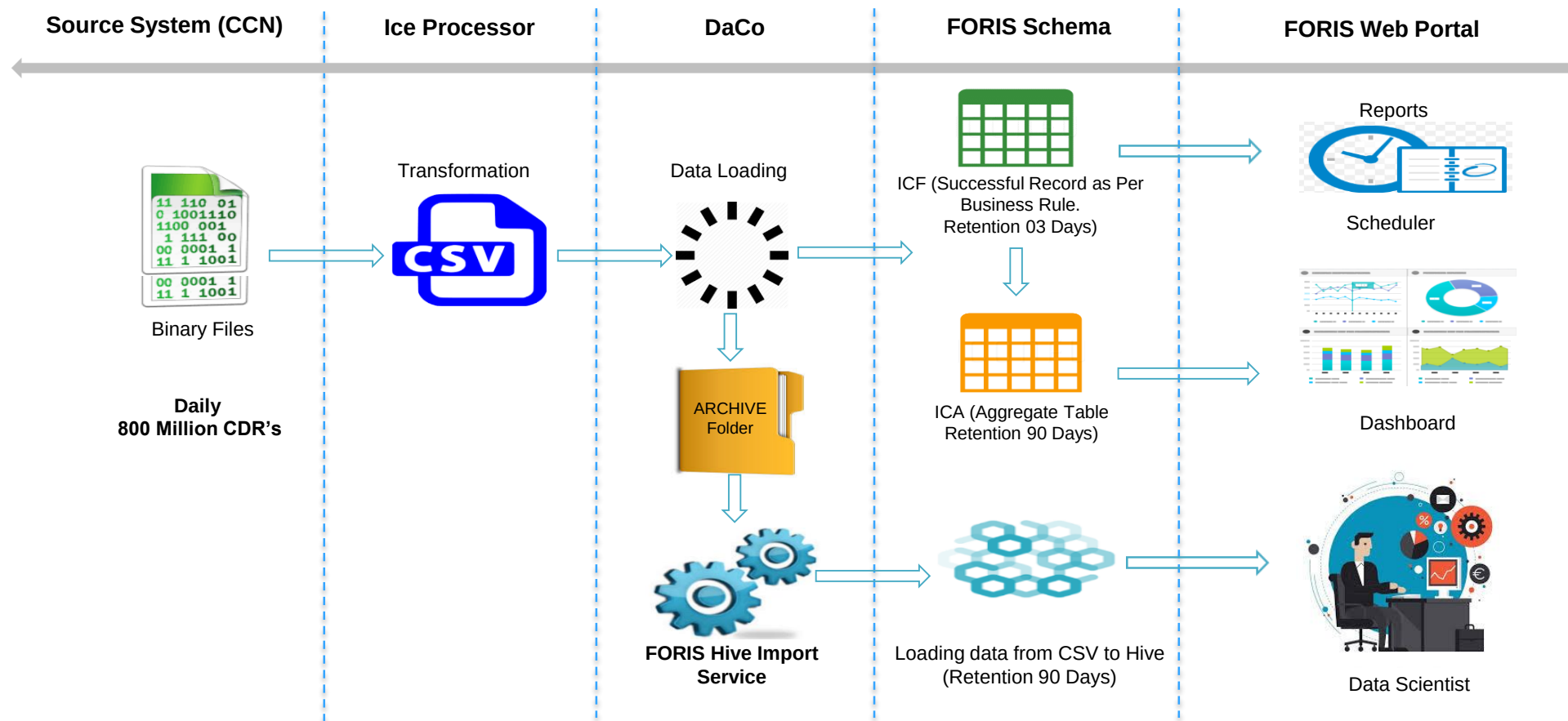
| Project Phase:              | Content:                                                                                                                                                  | Goals:                                                                                                                                 |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Pilot Study                 | <ul style="list-style-type: none"><li>Machines in production line are reporting results of their work (for every board, every element on board)</li></ul> | <ul style="list-style-type: none"><li>Data from different machines depicts information from various steps of production line</li></ul> |
| Concept Development         | <ul style="list-style-type: none"><li>Development of a Concept for Implementation of real time alerts from selected machines</li></ul>                    | <ul style="list-style-type: none"><li>Implementation of experimental field in real production environment at Nvision CZ.</li></ul>     |
| Demonstrator Implementation | <ul style="list-style-type: none"><li>Data is sent to FORIS Digital Factory and displayed for Validation of business benefit</li></ul>                    | <ul style="list-style-type: none"><li>Implementation of real time analytics and alerts and for decision making</li></ul>               |
| Knowledge Transfer          | <ul style="list-style-type: none"><li>Instructive revision of the results. Buildup of expertises for industrial customers &amp; Prospects</li></ul>       | <ul style="list-style-type: none"><li>Provision of expertises and competence to Nvision ICT, Sales &amp; Pre-Sales</li></ul>           |



**Solution based on Industry 4.0 Principles**

## FORIS Digital Factory Nvision POC Overview





Mediation of Jazz 800 Million CDRs Per Day

Big Data Integration

Data Lake Interpretation

Analytics, Reporting, Profiling

# Manufacturing Big Data Case Study



## Factory's Business Challenge

One of the leading auto parts manufacturer in Central Europe was facing the challenge of performance monitoring based on historic data reports. Highly fragmented data collection system made real-time visibility to machine availability and maintenance status and planning very difficult.



## Real Time Facility Monitoring CNS Big Data

Using

CNS Big Data Solution was deployed and integrated with several SMT production lines, ERP and Production Scheduling Systems. Helping the industry leader with 3D visualization that states the maintenance status & history and open tickets for planned maintenance. Resulted in reduce manual efforts, steadily increasing machine uptime rates, improved quality and overall efficiency.



# **FORIS Digital Factory Demo**