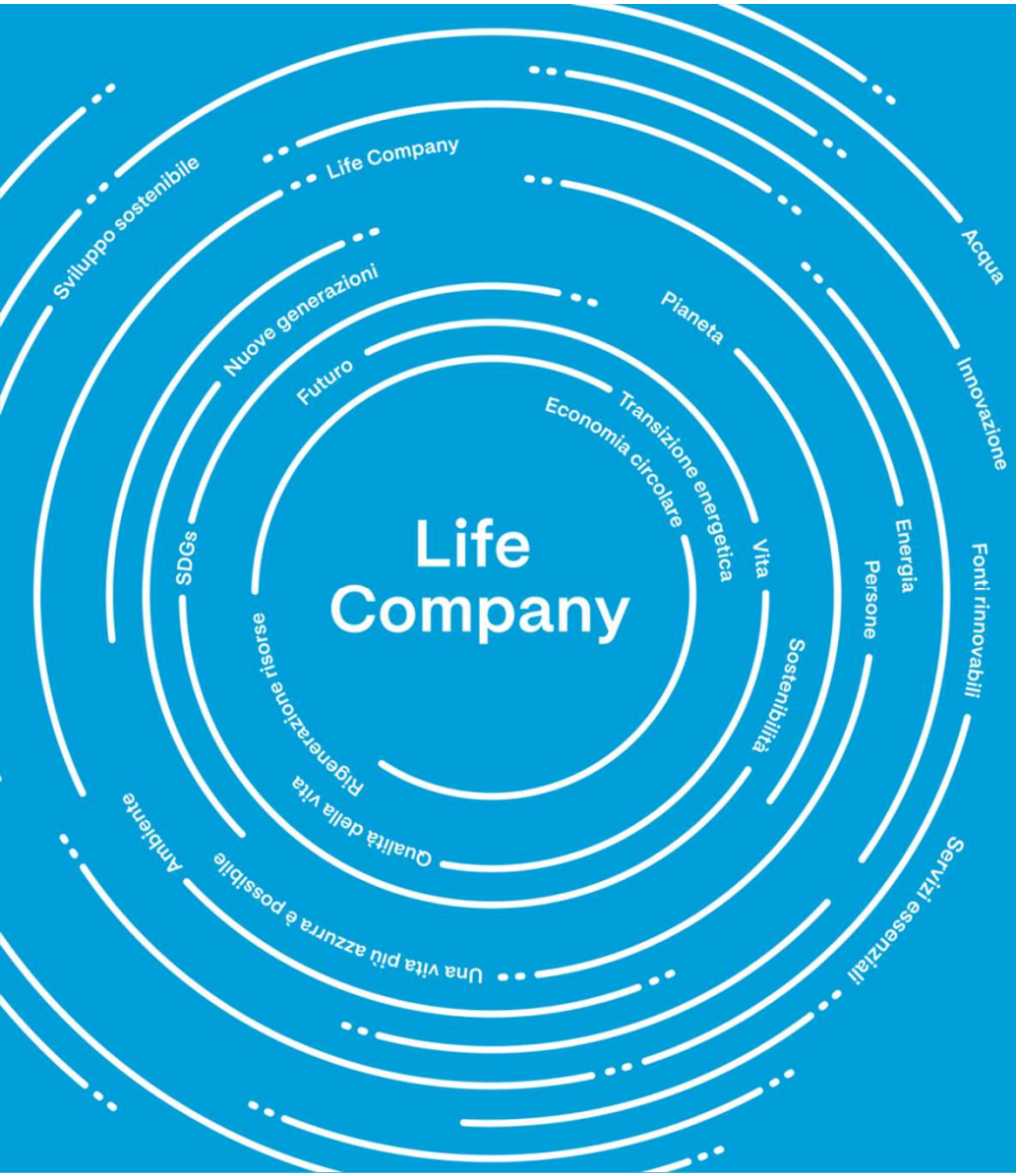

A2A Group
The DDMRP Program

Federico Mauri - Managing Director,
A2A Illuminazione Pubblica (Public Lighting)

Frankfurt, Demand Driven World
October 17th 2024

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LIFE COMPANY

Index

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About me

Federico Mauri – Managing Director, AIP - A2A Illuminazione Pubblica (Public Lighting)

Since 2016 in the A2A Group, he has held various roles:

- PM for the integration of the Networks division
- Chief of Staff of the group's CEO
- Head of Business Development, Digital and Operations of the Networks division
- General Manager A2A Public Lighting

- Previously worked as a consultant in leading national and international companies
- Graduated in Management Engineering
- MBA from Insead
- Lives in Milan, has two children, loves cooking, travelling, and walking

About A2A Life Company

A2A deals with energy, water and the environment, through a circular use of natural resources.

MISSION

"We want to guide the ecological transition, fostering virtuous circles involving businesses, individuals and institutions with the aim of generating a positive impact on the life of People, of towns and cities, of the Planet."

SERVICES

ENERGY

ENVIRONMENT

SMART INFRASTRUCTURES

Distribution Networks
Electricity and gas are distributed daily through networks to various types of users, including households, small businesses, and large industrial operations.

District Heating
The production, distribution, and supply of heat for district heating are managed through a cost-effective, safe, and environment-ally friendly system.

Water Cycle
Drinking water is piped to homes daily, guaranteeing the management of the whole cycle: catchment, distribution, wastewater recovery, purification.

Smart City
Services provided encompass urban mobility, connectivity, neighborhood safety, and sustainable use of energy resources.

Public Lighting
Public, artistic, traffic light, and votive lighting systems are managed using high-performance LED technology.

14.758 mln € Revenues

1.930 mln € EBITDA

659 mln € Net Profit

1.376 mln € Investments

People **> 13.000**

All figures refer to the 2023 financial data

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How We Worked Together

Steering Team

Federico Mauri
Ivan Lavatelli (Partner PwC)


Ivan Lavatelli

Federico Mauri


A2A Core Team

- Operations & Maintenance
- Engineering & Construction
- Planning & Scheduling
- Procurement
- ICT


Michele Cianci


Simone Boschetti

Giovanni Bassi


Giacomo Monte


Martina Giannini


PwC Team

- Engagement Leader
- Project Manager
- Consultant


Luca Resmini


Martina Mauri

Elisabetta Venturelli


Luca Valletta

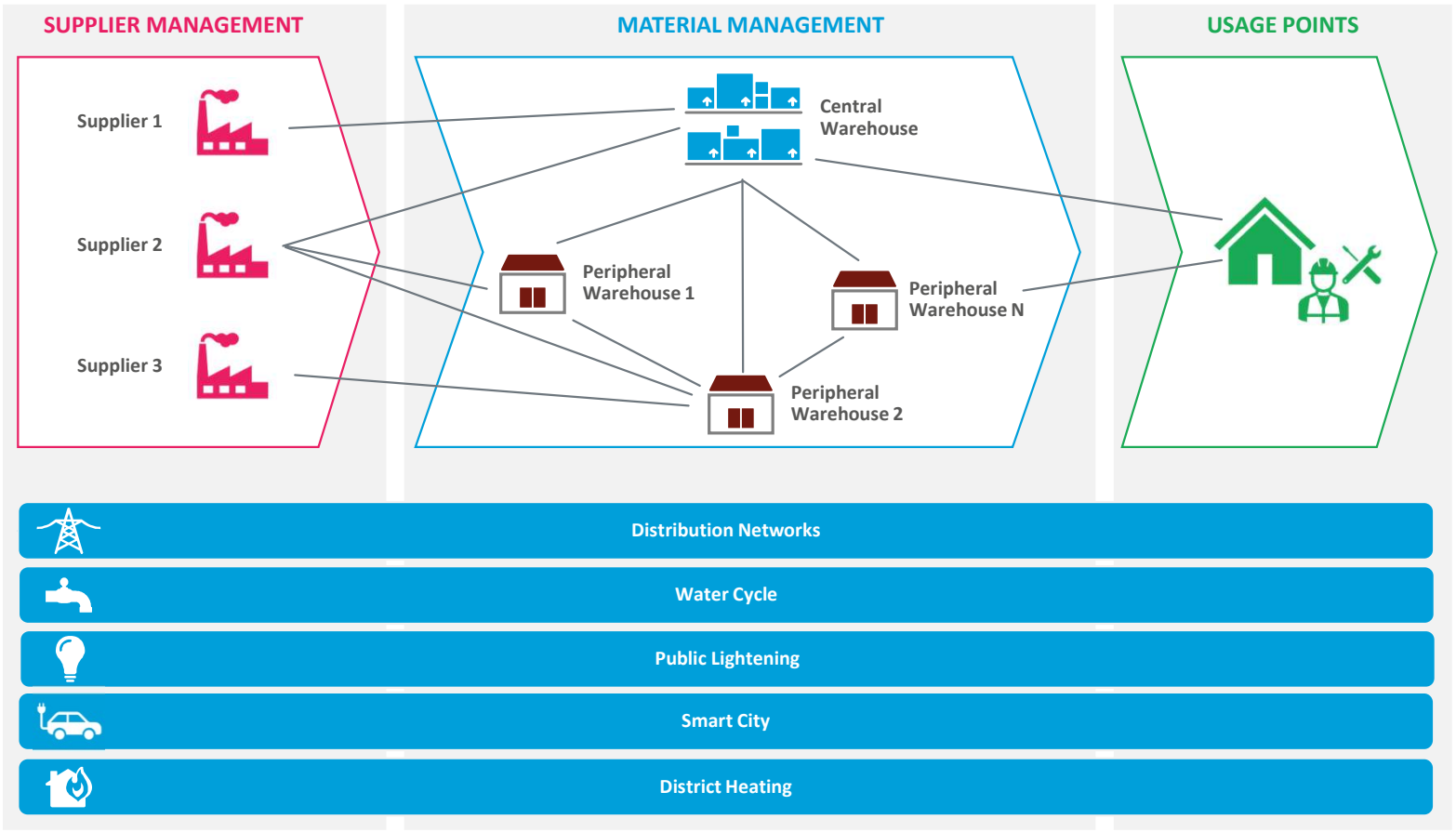

DDTECH

- Analyst
- Functional Consultant
- Executive


Erik Bush

Tim Root

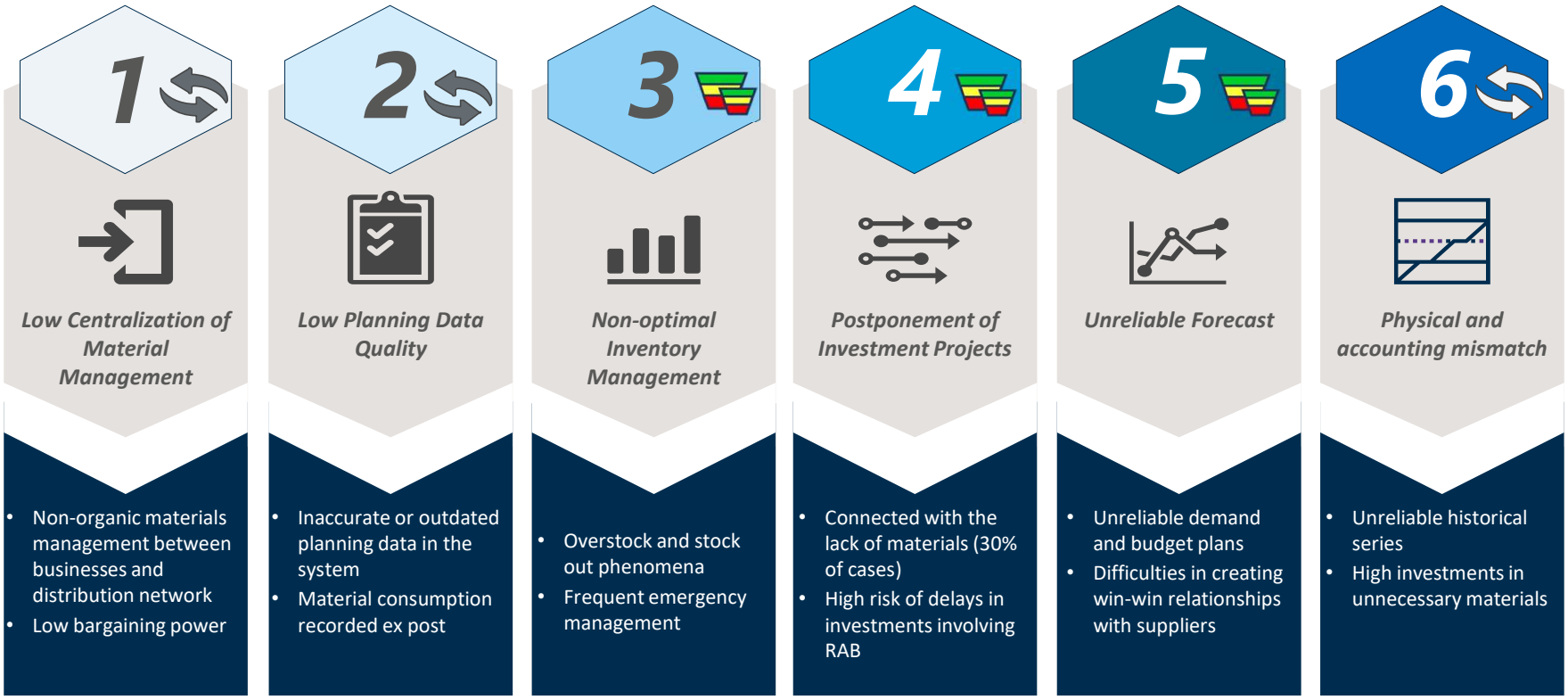

The Starting Picture | July 2019



The Value Chain, from the suppliers to the end-use points, suffered from **fragmented** and **unstructured management**

The different companies within the Smart Infrastructure Business Unit operated in **isolated silos**, each with its own management system, resulting in the **absence of a unified, streamlined approach across the entire network**

The Starting Picture | Main Pain Points Highlighted in July 2019



Solution **provided** by the adoption of a **DDMRP** initiative

Solution **supported** by the adoption of a **DDMRP** initiative (***DDMRP as enabler***)

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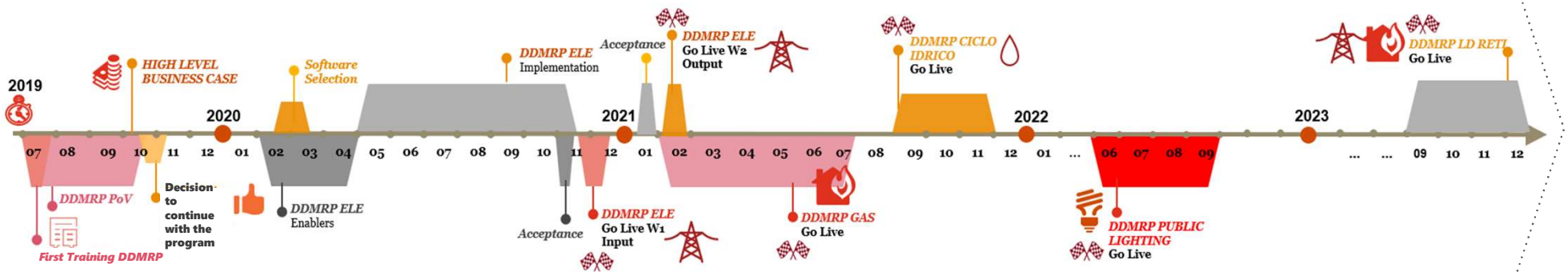
The DigiMaMa (Digital Material Management) Journey

First experience in Energy & Utility

ROADMAP



COMPONENTS

~ 70 Users (Planners, Material Managers)

Planning — *DDMRP* — *Execution*

WMS – Warehouse Management System

WFM – WorkForce Management

~ 40 Network Nodes involved

~ 800 Users (Technicians)

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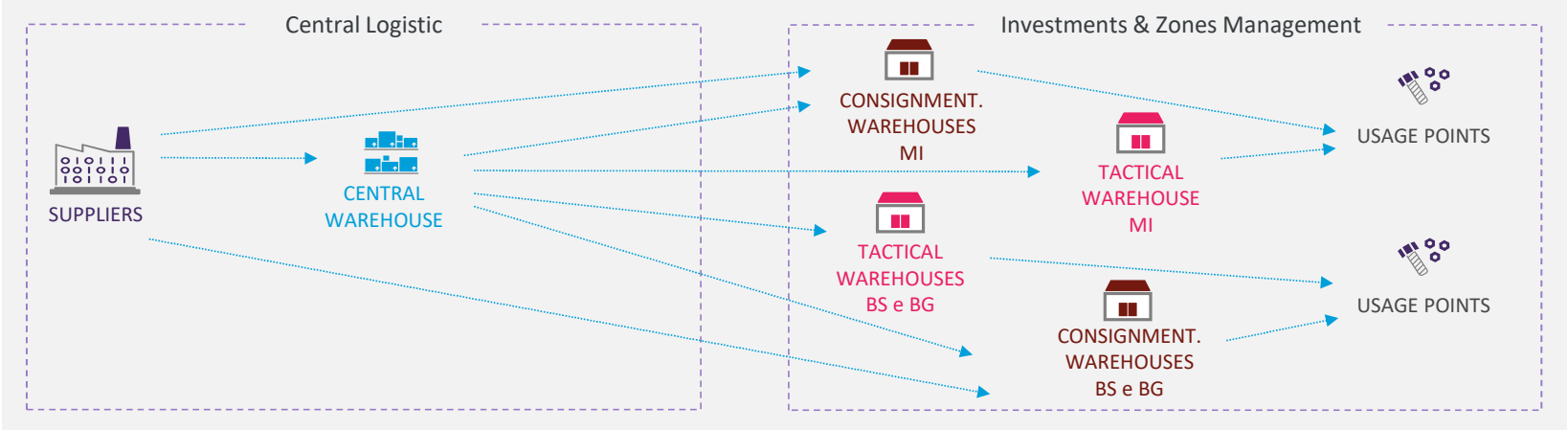
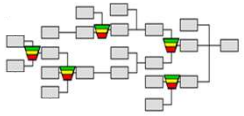
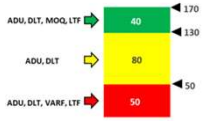
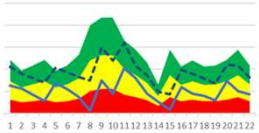
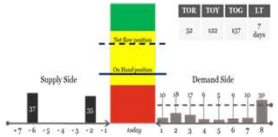
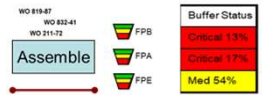
Opco Distribution Network: the example of AIP – A2A Public Lighting



	Central Warehouse	Tactical Warehouses & Consignment Warehouses (Zones)	Consignment Warehouses (Investments)
Items *What materials are included?*	All materials	BoM Materials + Consumables	BoM Materials + Rare materials intended for specific projects and not managed in tactical warehouses
Buffer Positioning *Where are buffers placed?*	For all the materials in use, according to supplier's delivery LT	BoM materials and consumables, according to transfer LT from central warehouse	BoM materials, according to transfer LT from central warehouse
Starting quantity *What will be the initial set-up amount?*	Calculated based on historical average daily usage	Calculated based on historical average daily usage	Calculated based on historical average daily usage and investment forecast

The Design of the DDMRP Model | Main Features in A2A

	POSITION		PROTECT		PULL	
DDMRP COMPONENTS	1 Strategic Decoupling		2 Buffer Profiles and Levels	3 Dynamic Adjustents	4 Demand Driven Planning	5 Visible and Collaborative Execution
						
DISTINCTIVE PROJECT FEATURES	▪ The logic of buffer placement was mainly based on to the **types of interventions managed** by different warehouses (e.g. investment works, maintenance, etc.). ▪ It has been considered to place buffers for materials used in **critical maintenance activities** and strategic materials for **investments** (e.g. characterized by long LT).		▪ Buffers are sized taking into account: ○ **historical** data; ○ adjustments from **forecasts**; ○ a **minimum stock**, part of the red zone, always guaranteed to avoid stock out and maximize the service level.	▪ Buffers are adjusted on a daily basis considering: ○ **ADU**; ○ revised **forecasts**; ○ **fault** trends; ○ **forecast campaigns** (e.g. Smart Meter 2G); ○ presence of **new contractors**; ○ **Phase-In / Phase-Out** for technology upgrades.	▪ Implementation of an **observe phase** aimed at **fine-tuning** the sizing of buffers, using actual data. ▪ Constantly updating net flow based on actual demand compared with strategic buffers has **reduced the bullwhip effect** throughout the value chain.	▪ Intuiflow is a simple and **easy-to-use** tool that enables the **engagement** of **all users** involved in materials management. ▪ The implementation of the DDMRP software has **extended visibility** to all operators and consequently the ability, in case of urgency, to **replenish from nearby warehouses** based on their stock availability.

Y: Yearly Q: Quaterly M: Monthly W: Weekly D: Daily

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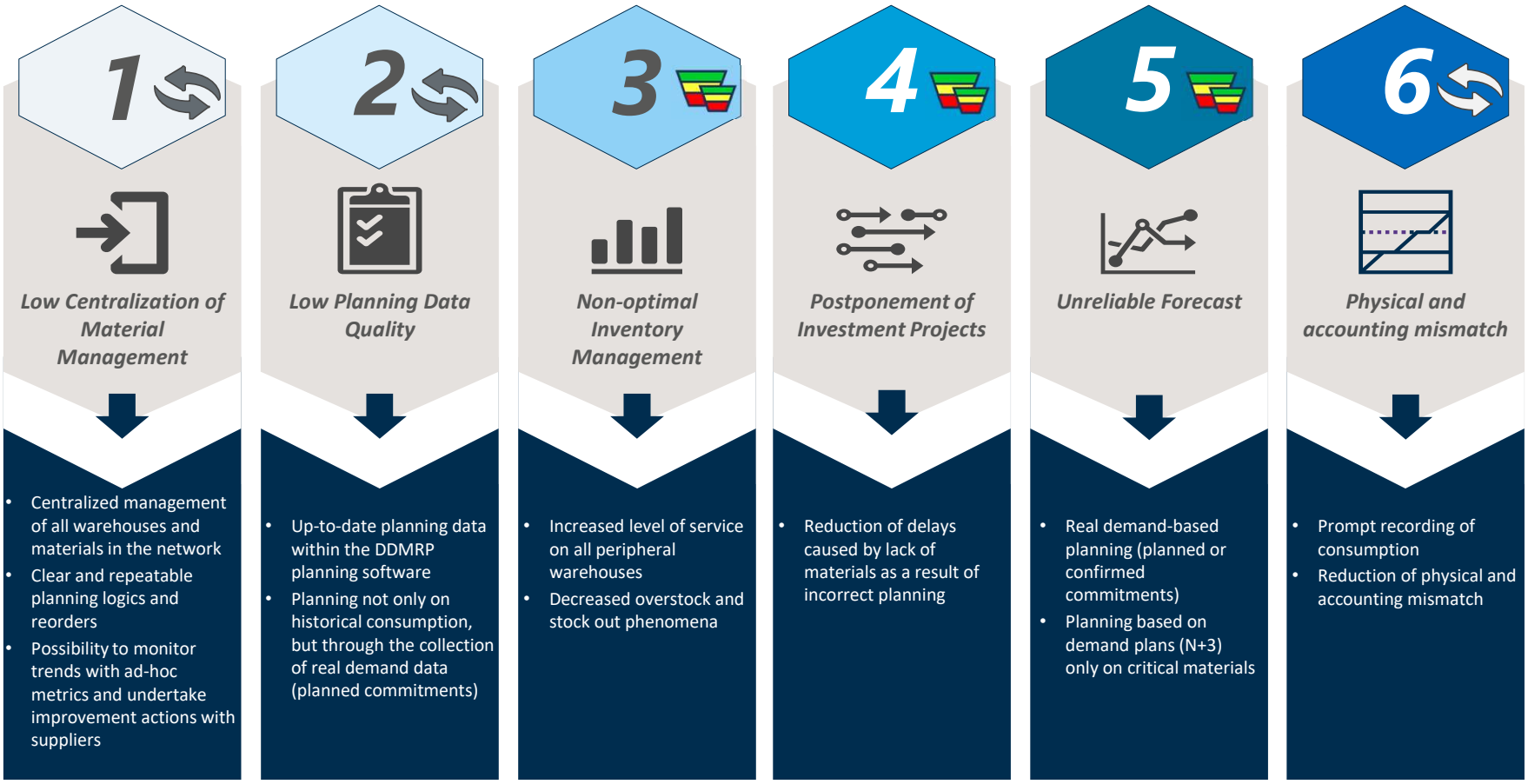
The Main Benefits Encountered



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Focus on the Main Outcomes

Stock out and critical planning situation

% SKUs with a stockout risk

$$\frac{\#SKUs\ with\ on\ hand < inventory\ alert}{\#\ buffered\ SKUs}$$

Nov 2022*	*35,7%*
Jul 2024	*10,9%*

The increased availability of materials due to the strategic buffers positioning has greatly **reduced the postponement of planned investment projects**

Overall inventory

Net availability

$$\frac{\#SKUs\ with\ on\ hand > 0}{\#buffered\ SKUs}$$

182%	Nov 2022*
139%	Jul 2024

Inventory Turnover

$$\frac{COGS}{Average\ Inventory}$$

Nov 2022*	*0,97*
Jul 2024	*1,54*

The project resulted in overall inventory optimization with a ***reduction in the stock of non-critical materials*** *and an* ***increase of inventory turnover***

The data from November 2022 represent the **baseline; the prior situation was, in fact, not even measurable.*

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Lessons Learnt and Next Steps

Main lessons learnt

Data

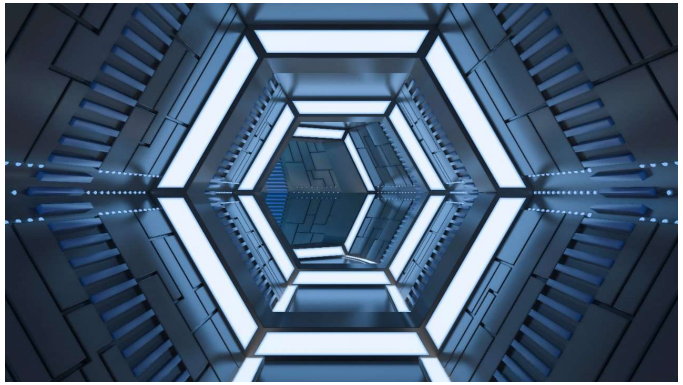
Data quality was critical for the success of the implementation and should remain a focus for the next stages of the DDMRP journey

People

People from all levels of the organization have been involved since the earliest stages of the project to ensure the proper commitment

Cloud Philosophy

Adhering to the application's cloud philosophy, ensuring continuous evolution through the adoption of the system latest versions and the integration of DDTECH's most cutting-edge functionalities



...and Next Steps

Aiming For Perfection

- Extended Supply Chain (e.g. inclusion of suppliers and contractors)
- Readiness to incorporate other new A2A group companies by adopting the existing reference model

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Q&A Session

Thanks!