genpact
Transformation Happens Here

Supply Chain Evolution and Technology

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Born as the GE captive, our relentless focus puts the customer first, delivering superior outcomes through process and digital excellence

- Set up as a GE SSC in 1997
- Spun off from GE in 2005
- Listed NYSE in 2007 ("G")
- Bain Capital becomes largest shareholder 2012
- Launch of Lean Digital 2015
- Genpact Cora, AI platform 2017

70+ delivery centers, 16 countries

35+ Languages

Innovation
Palo Alto, Boston, Netanya, Delhi, Bangalore

800+ clients, one-fifth are Global Fortune 500

87,000+ Employees

69% NPS Client satisfaction

16% Revenue CAGR**:

$36 billion Business impact Delivered

Leaders in independent analyst surveys

99% Renewal rates

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A recognized leader in Supply Chain Management

Industrialized, Large Scale Delivery

- **20+** years of experience across industries, 500+ processes and 100+ customers
- **7000+** Analysts and planner supporting SCM functions
- **1000+** Consultants, Data Scientists and Statisticians in Supply Chain
- **$5Bn+** freight spend managed p.a.
- **50%** with advanced degrees and/or certifications (CPIM, CSCP)
- **20+** Digital Solutions
- **500 MN+** business impact delivered in 2017-18
- **5** continents supporting control tower & GTM operations

100+ Global Clients

Advisory, Managed Services, GBS & Digital services provided

PENSKE, GLOBAL F&B MAJOR, NBTY Passion For Wellness, ABInBev, NISSAN, U. S. Steel, GE, DETROIT, REGAL, Alcon A Novartis Division, VERITAS, NIKE, GLOBAL CPG MAJOR, JAGUAR LAND ROVER, SunEdison, YOKOGAWA, Panasonic

Technology Application Stack

Proprietary Solutions

- IO - Genpact Intelligent Supply Chain Planning Platform
- Genpact Sourcing Analytics Suite
- Genpact Supply Chain Command Center

Acquisitions

RAGE Frameworks, EmPower Research, BARKAWI, ENDEAVOUR, PNMSOFT, SMS

Partnerships

LLamasoft Supply Chain By Design, KINAXIS, E2OPEN, o9, FourKites, ToolsGroup

Third Party Applications

tableau, SAP, SAS, jda Plan to deliver, ORACLE, servigistics, Minitab, SAP BusinessObjects, QlikView, COGNOS, MicroStrategy, Spotfire

Industry Recognition

Rated as **LEADERS** & STAR PERFORMERS in 2018 Everest PEAK Matrix for SCM

IDC Ranked as a "Leader" for the last 3 years

H/S BLUEPRINT WINNER'S CIRCLE 2016 — BFS Analytics Services

H/S BLUEPRINT WINNER'S CIRCLE 2016 — Intelligent Automation

H/S BLUEPRINT EXECUTION POWERHOUSE 2016 — Digital Marketing Services

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The Barkawi integration increases our Supply Chain depth and domain expertise

Leveraging deep domain knowledge to define a vision and roadmap for improving operational performance and lowering costs

Offerings

1. Sales & Operations Planning
2. Control Tower
3. After Sales Services & Parts
4. Network design, Optimization

TRANSFORMATION and MANAGED SERVICES

Partnerships

- Kinaxis
- Anaplan
- ptc
- FourKites
- E2OPEN
- LLamasoft — Supply Chain By Design

Configure, implement and deploy new strategies, processes and any required enabling technology or digital assets.

Combine automation and AI technology with a highly capable organization to help operate a function with or for the client.

- Tools and Technology
- Processes
- Strategies
- Organisation Alignment

Interventions

- SEP™
- Lean Digital℠
- DESIGN THINKING
- i-SCTT (Supply Chain Transformation Toolkit)
- CORA SCA

Our supply chain service line covers the breadth of offerings to improve our client's supply chain performance and results

Capabilities

PLAN *Demand & Inventory*	SOURCE *Sourcing & Procurement*	MAKE *Manufacturing Optimization*	DELIVER *Logistics & Fulfillment*	AFTERSALES *Returns & Services*
▪ Supply chain planning: demand, supply, inventory, capacity, etc. ▪ S&OP ▪ Control Tower ▪ Portfolio management	▪ Strategy support ▪ Procurement research ▪ Supplier management ▪ Commercial support	▪ Smart factory / IoT ▪ Lean six sigma ▪ Production scheduling ▪ Working capital management	▪ Network design ▪ Logistics planning ▪ Transportation management ▪ Warehouse and distribution centers	▪ Parts management ▪ IoT / Asset management ▪ Field service / dispatch ▪ Warranty / claims (SLA) management

Approach

Value Discovery

Supply Chain Health Check

Enabling Transformation Alignment

Identify and Plan

Clearly defined vision and cross-functional alignment for "right-sized" business solution, assessing value and readiness

Days / Weeks

Value Delivery

Prescriptive Requirements and Solution Design

+

Configuration and Integration

+

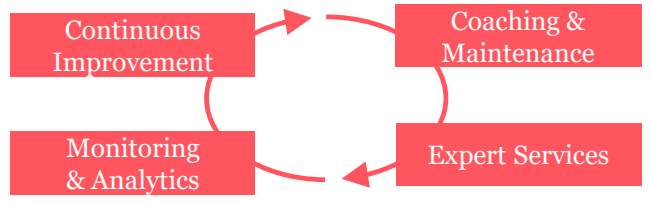
Process Improvement and Change Management

Identify and Change

Control deployment cost, align design to best practices and drive adoption to increase ROI, leveraging a solution portfolio

Months

Value Assurance



Evaluate and Extend

Maximize investment value, consolidate solution applications and retain institutional knowledge

Quarters / Years

FROM VISION TO VALUE

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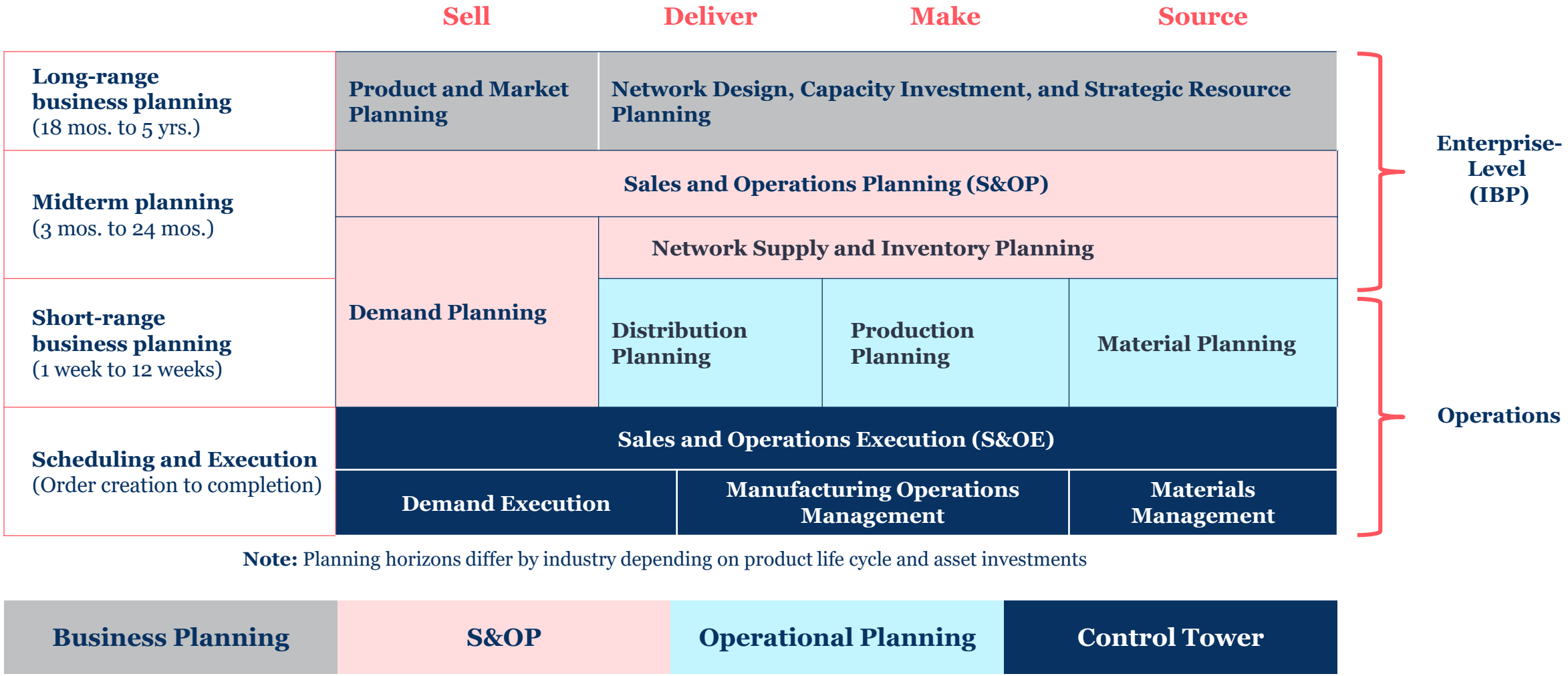
Genpact's digital offering leverages partner solutions that address all functions of the supply chain and aftersales services



Note: Planning horizons differ by industry depending on product life cycle and asset investments

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Supply Chain Maturity

Step 3. Build a Control Tower

Step 2. Get WMS/TMS/Planning System

Step 1. Get an ERP

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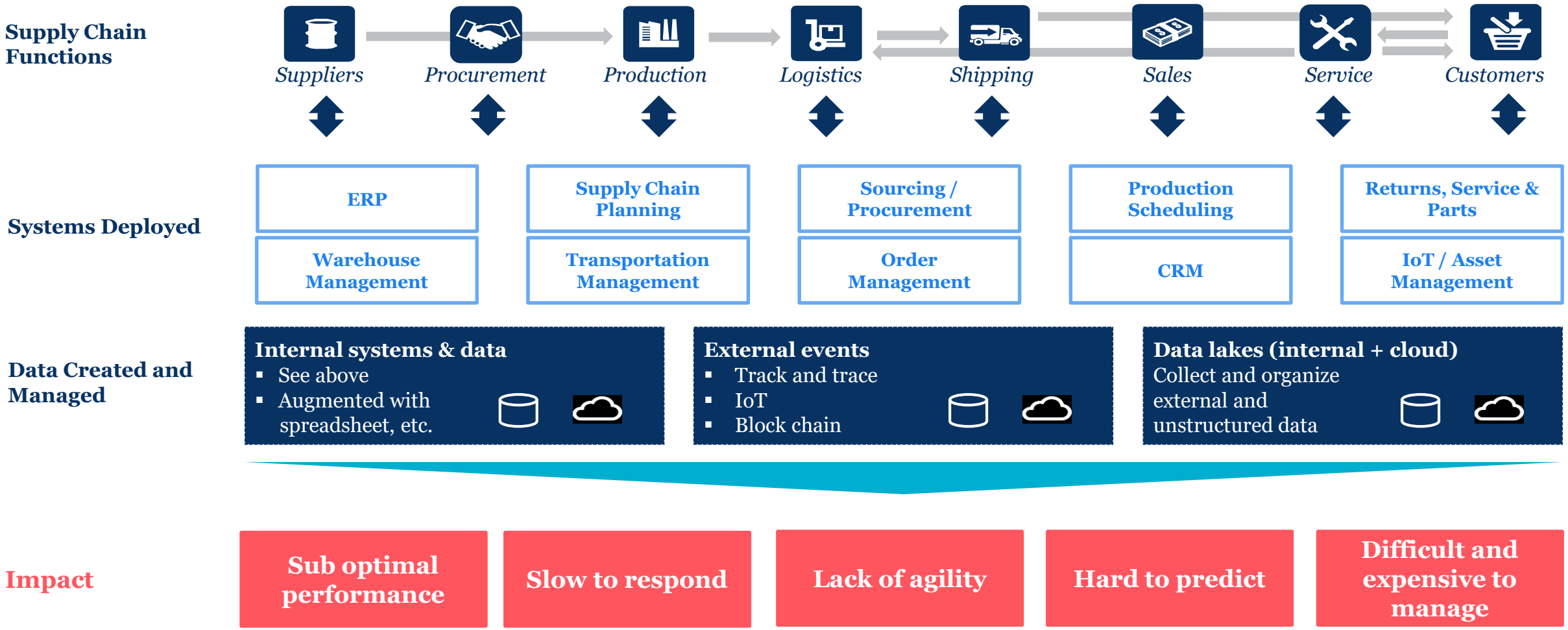
Today's Supply Chains are made up of siloed, disconnected functions

Investments in technology and data have been focused on just a part of the supply chain challenge



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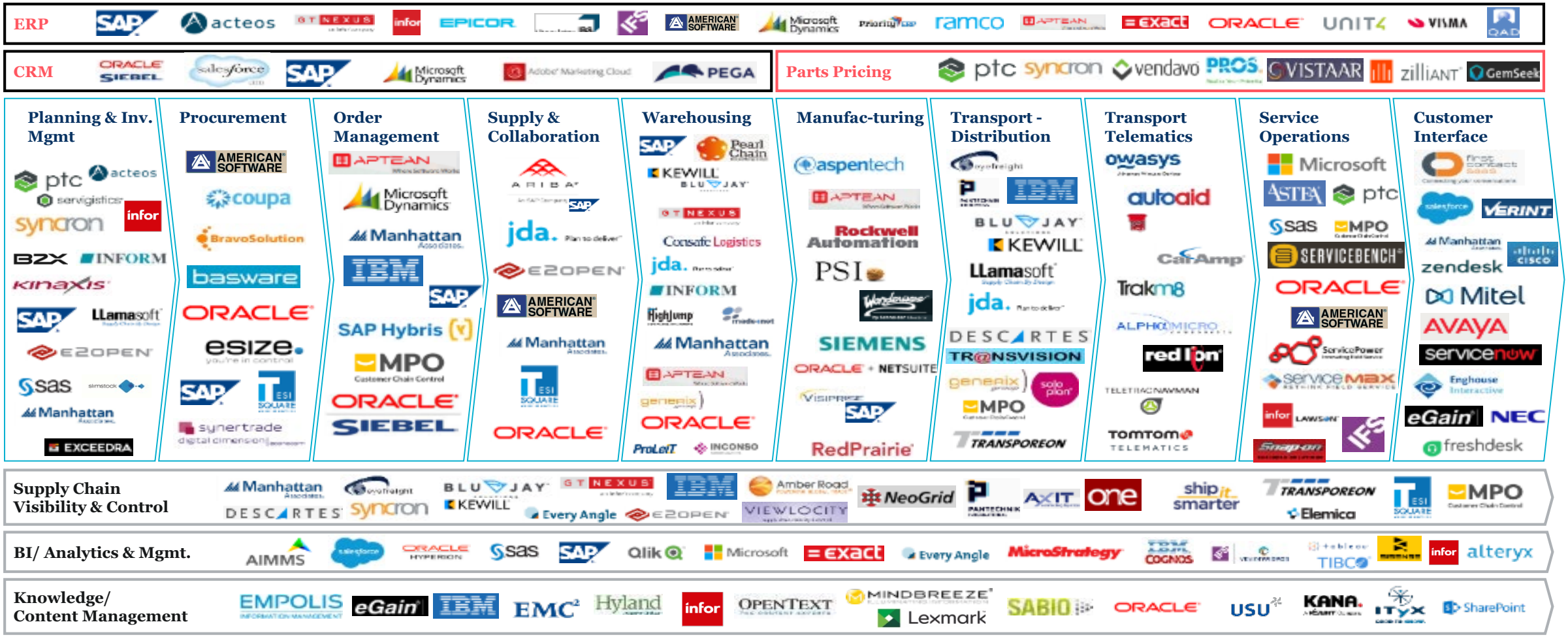
The number of software and technology providers is confusingly high

Selected IT Tools along the Supply Chain



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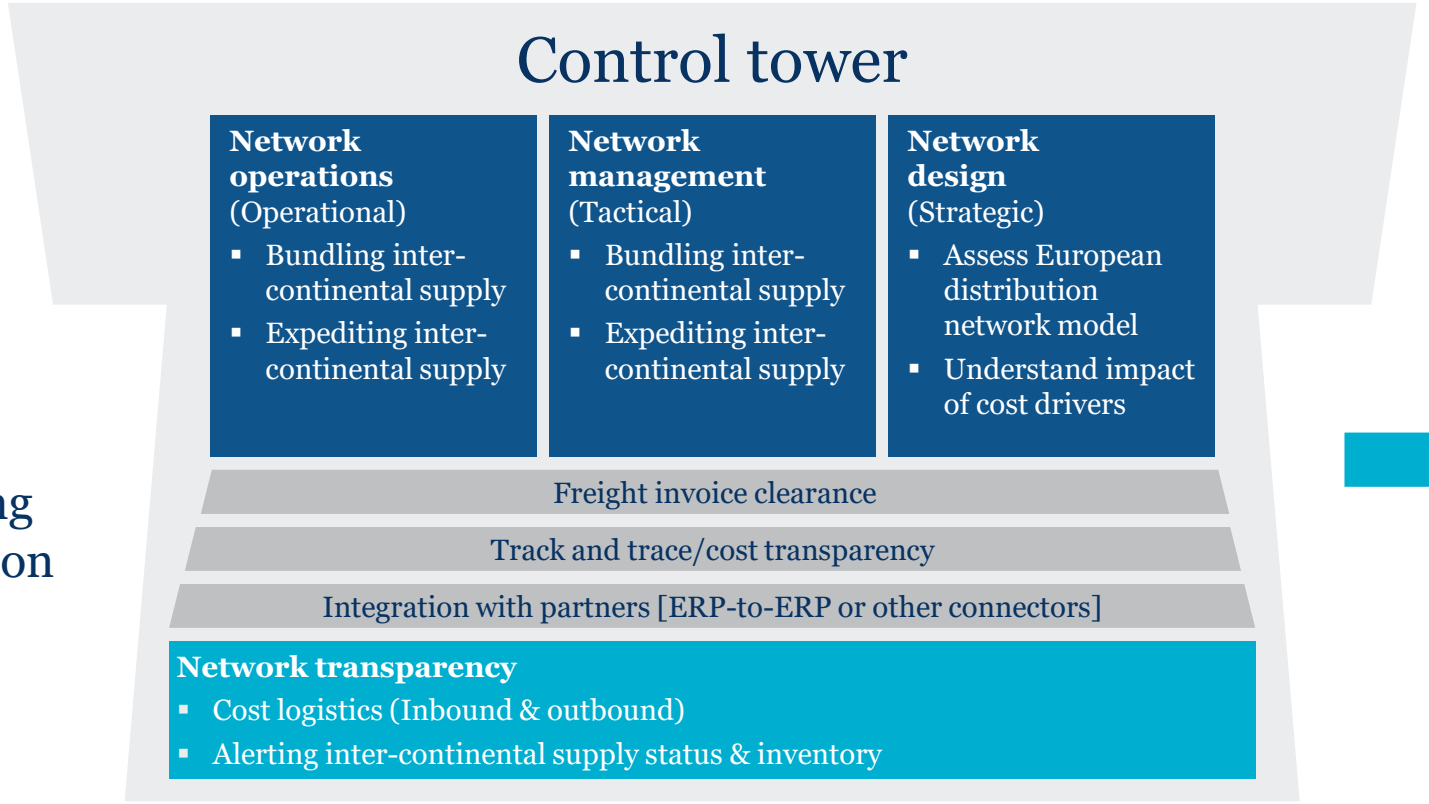
Supply chain control towers that provide real time network transparency and alerts will connect the enterprise drive supply chains in the future

Control tower concept – enabling foundation and core pillars

Core Pillars

Enabling foundation



Benefit area	Benchmark
On time delivery improvement	7% to 25%
Order cycle time reduction	15% to 30%
Time-to-alert resolution cycle time reduction	20% to 40%
Expediting costs reduction	20% to 30%
cash-to-cash cycle time reduction	7% to 13%

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Evolution of Automation Enables a Bigger Vision

Robotic process automation

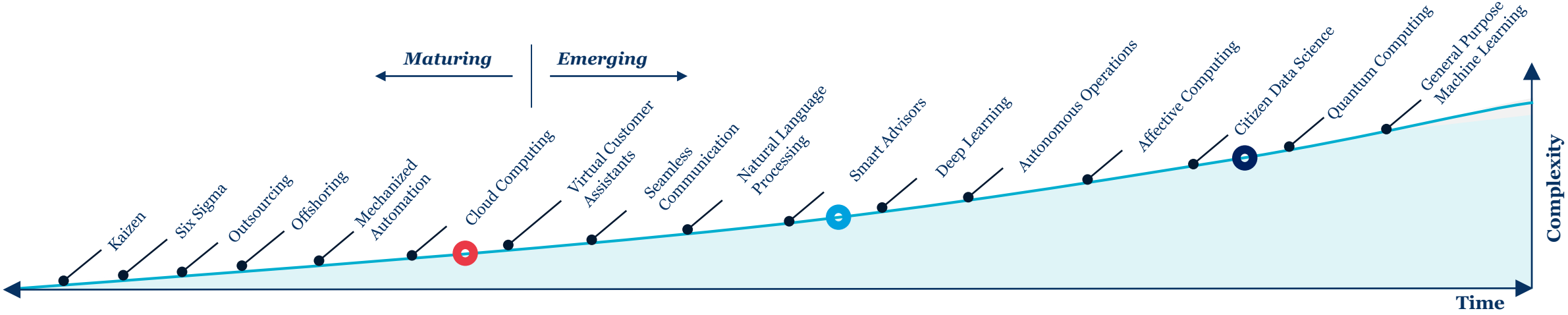
- Leveraged for rules-based methodical tasks
- Screen scraping data collection
- Tactical toolset to automate repetitive tasks
- Require lower investment, provide high quality and enable process efficiency

Cognitive automation

- Improve non-routine tasks requiring judgment
- Data input and output in any format
- Pattern recognition within unstructured data
- Basic learning capabilities for continuous improvement to quality and speed

Artificial intelligence

- Natural language recognition and processing
- Dealing with unstructured super data sets
- Hypothesis based predictive analysis
- Self-learning rules continuously rewritten to improve performance



Source: Gartner Hype Cycle for Emerging Technologies
Note: Trends across time are not to scale

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The challenges of managing a complex supply chain have led companies to a ‘divide and conquer’ approach

Each function has disruptions to manage and decisions to make throughout each day

Considerations

Inbound Supply	Supply/Demand Matching		Outbound Product
• Multiple modes • Transport visibility • Route constraints • Pooling constraints • Capacity constraints • Vehicle constraints • Driver constraints • Drop-off/yard constraints	• Demand type/priority • Forecast generation • Demand planning • Forecast consumption • Customer priority • Reserved inventory • Resource constraints • Material constraints • Order priority • Expiry	• Alternates/substitutes BOMs • Safety stock/optimization • Time-phased yields/leadtimes • Multi-sourcing options • Multi-echelon networks • NPI/EOL • Detailed/line scheduling	• Pick-up/yard constraints • Appointment scheduling • Transport visibility • Multiple modes • Route constraints • Drop-off date constraints • Pooling constraints • Capacity constraints • Date constraints • Vehicle constraints • Driver constraints

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As a result, most companies have no ability to effectively see and manage the total supply chain in an optimal way

With speed and agility being today's goal, the lines between planning and execution are blurring

Typical use-cases/disruptions to be addressed in the supply chain:

- **Supplier misses the delivery date**
- **Customer order cancel/increase/decrease**
- **Resource capacity changes**
- **Yield/scrap changes**
- **Inventory expiry prior to use**
- **Carrier misses a pick up/drop off**
- **Carrier missed capacity**

Guesses made at every stage.
Emotional buys. Little coordination.

- **What Q1:** Products that will be demanded
- **What Q2:** Part/products to be sourced/made/repaired
- **When Q1:** Supply order arrival time
- **When Q2:** Shipment arrival time for fulfillment
- **Where Q1:** Supply shipments within a supply chain
- **Where Q2:** Demand shipment destinations
- **Who:** Source/Supplier should provide the part
- **How much:** Supply and demand quantities
- **How:** Transport mode

Less Time

- **How to keep detailed schedule synchronized between planning and execution?**
- **How to generate a plan that is actually capable of being executed upon and not a non-executable one?**
- **How to do it all more efficiently in less time with higher margins?**

Higher Margin

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Future State Requires Tearing Down the Walls

A platform that can serve as the foundation to both support planning AND execution

- Requirements for Planning and Execution
  - Blend in with existing client infrastructure and technology investments as existing SCM, TMS, WMS, etc. investments should be maintained where possible.
  - Can run selectively or in full leveraging the existing domain expertise as required or applicable.
  - Can be deployed at a client site or managed entirely for a client through outsourcing or full managed services.
- Expected Outcome
  - Decades of “this is planning” and “that is execution”. No More! “Planning AND Execution” vs. “OR”.
  - Ability to react quickly in a coordinated way. The impact of “what now” on the planning cycle.
  - Execution and planning done properly blending the best in technology, data, processes and people.
  - Providing clients with the ”scaffolding to support SCM innovation” to continue to build upon and leverage ML, simulations, optimization against their continuously evolving and growing data landscape.

Better planner decision-making will more closely represent reality and minimize over-time, expedites and reactive inefficient transportation costs.

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Our Digital Vision: Enable the Hyperconnected Supply Chain to Provide an End-to-End Digital Twin

The Supply Chain Digital Twin

- End-to-end visibility AND control
- Leverage the data and capabilities of each functional systems
- Smart signals and collaboration framework
- Simulations and decisions that coordinate functions
- Enable blurring the lines between planning & execution

Data Layer and Hub

- Support functional systems
- Supports data conversion and transformation
- Real time data synchronization
- Support rules based or automated data integrity/conflict resolution

User Interface

- Integrates workflow with emails/sms and mobile use
- Role based user functionality
- Supports BI report, visual analytics and KPI
- Alert functionality

Intelligent Framework

- Facility smart signals between functional systems
- Enable AI/ML logic
- Multiple scenario analysis
- End-to-end coordination across systems
- Supply Chain Simulation

Functional and ERP Systems

Customers and Supplier Systems

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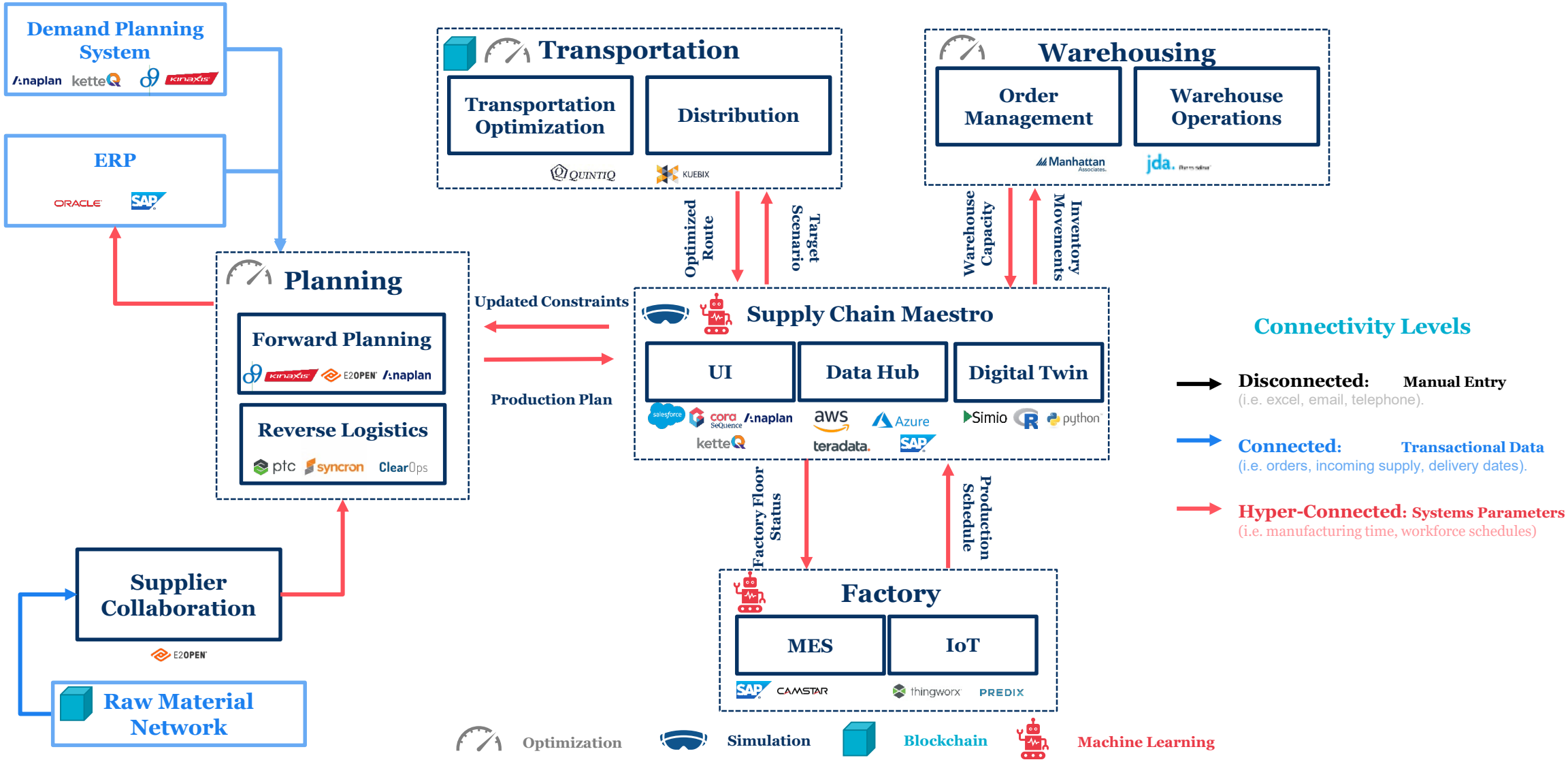
A hyperconnected supply chain creates a digital twin of the supply chain



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Digital Twin: "Executable Supply Chain" - *averages* to *reality*

Planner's view

Ideal Supply Chain *Perceived*

Data Used

- **Statistics and Measurements**
- Demand (orders)
- Capacity (throughput)
- Material Availability
- Resource Utilization
- Service Level

Rough Cut Production Schedule

Generates

Results

- Material Orders
- Available to Promise
- Expected Delivery
- Demand/Supply Match

Financials

Expectation

- Standard Cost

Operation's view

Real Supply Chain *Hidden*

Factory Scrambling to *Produce*

Warehouse Scrambling to *Pick*

Transportation Scrambling to *Deliver*

Reality

- Expedites
- Overtime
- 3rd Party Hauling

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Digital Twin: "Executable Manufacturing" - *averages* to *reality*

Data Used

Generates

Planner's view

Ideal Supply Chain *Perceived*

Statistics and Measurements

- Demand (orders)
- Capacity (throughput)
- Material Availability
- Resource Utilization
- Service Level

Rough Cut Production Schedule

Expected Results

- Material Orders
- Available to Promise
- Expected Delivery
- Demand/Supply Match

Operator's view

Real Factory *Hidden*

Real Events and Resources Status

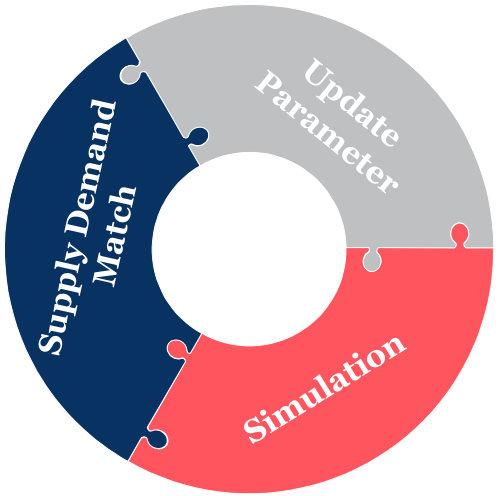
- Actual Availability - Breakdowns
- Changeovers and Setups
- Maintenance Schedules
- Operator Skill and Availability
- Quality Issues - Reworks

Detailed Production Schedule

Actual Results

- Resource Overtime
- Expedites
- Asset Utilization
- Production Yields
- Realized Throughput

Simulation



Cyclical Process ensures measurements are updated to match cycle's reality

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Digital Twin: "Executable Warehousing" - *averages* to *reality*

Data Used

Generates

Planner's view

Ideal Supply Chain *Perceived*

Statistics and Measurements

- Demand (orders)
- Capacity (throughput)
- Material Availability
- Resource Utilization
- Service Level

Rough Cut Production Schedule

Expected Results

- Material Orders
- Available to Promise
- Expected Delivery
- Demand/Supply Match

Dispatcher's view

Real Warehouse *Hidden*

Real Events and Resources Status

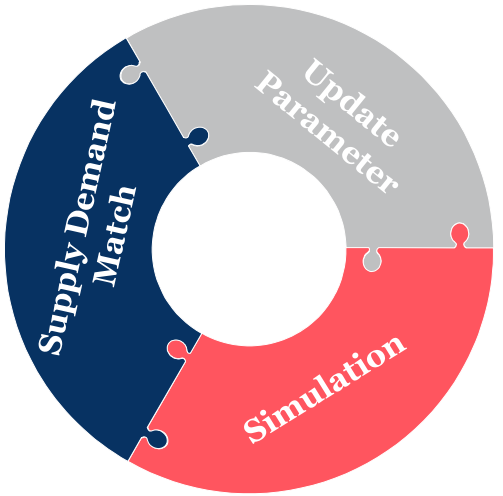
- Equipment Availability
- Staging Area Space
- Rack Availability
- Employee Schedule
- Container Docks

Picking Schedule and Storage Slotting

Actual Results

- Picking Time
- Warehouse Space
- Asset Utilization
- Overtimes
- Dock Loading

Simulation



Cyclical Process ensures measurements are updated to match cycle's reality

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Digital Twin: "Executable Transportation" - *averages* to *reality*

Data Used

Generates

Planner's view

Ideal Supply Chain *Perceived*

Statistics and Measurements

- Demand (orders)
- Capacity (throughput)
- Material Availability
- Resource Utilization
- Service Level

Rough Cut Production Schedule

Expected Results

- Material Orders
- Available to Promise
- Expected Delivery
- Demand/Supply Match

Dispatcher's view

Real Transportation *Hidden*

Real Events and Resources Status

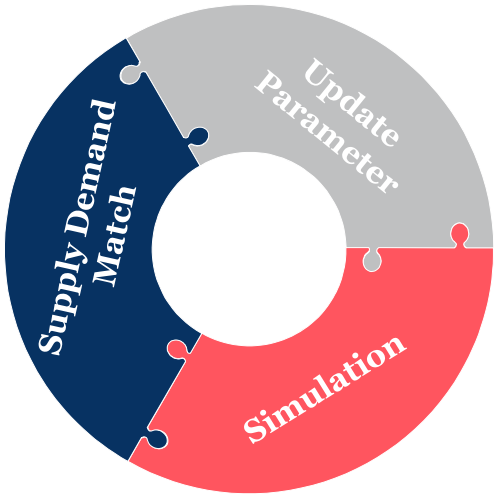
- Fleet Size
- Driver Availability
- Truck Capacity
- Pick Up/Drop Off Windows
- Drop off Locations

Route Dispatch Schedule

Actual Results

- Distance Travelled
- Expedites
- Asset Utilization
- Overtimes
- Delivery Times

Simulation



Cyclical Process ensures measurements are updated to match cycle's reality

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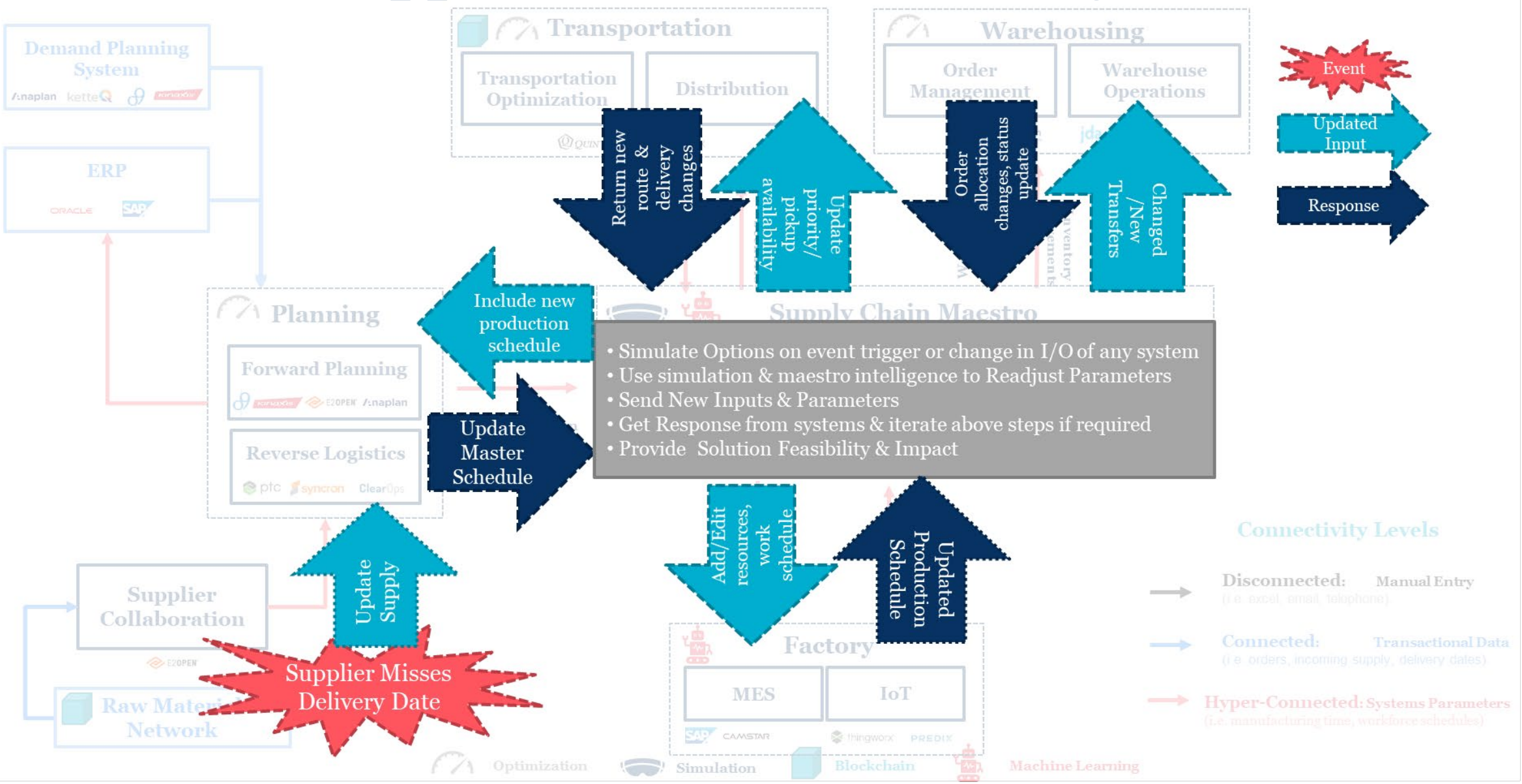
Use Case : Supplier misses the delivery date



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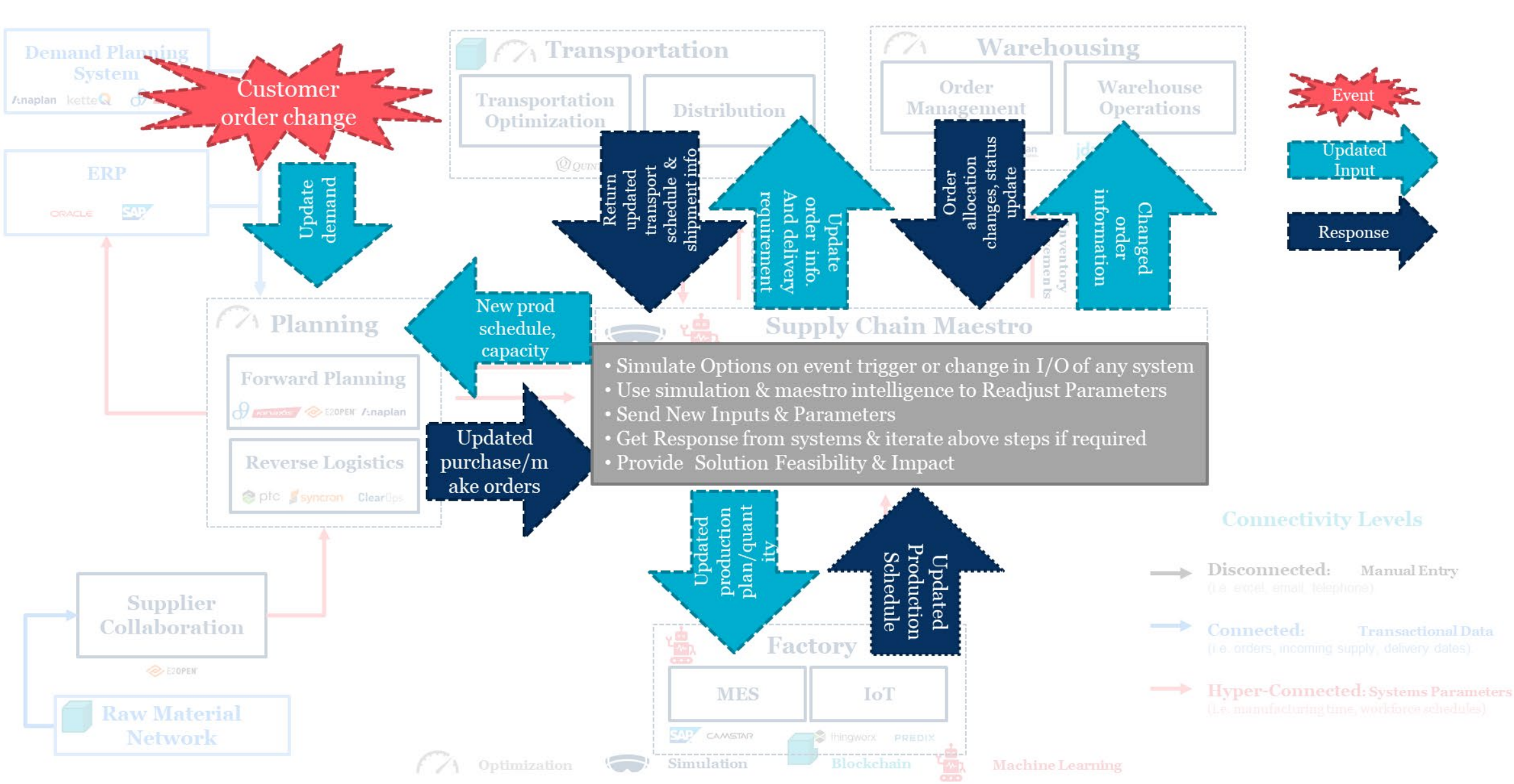
Use Case : Customer order change :cancel/increase/decrease



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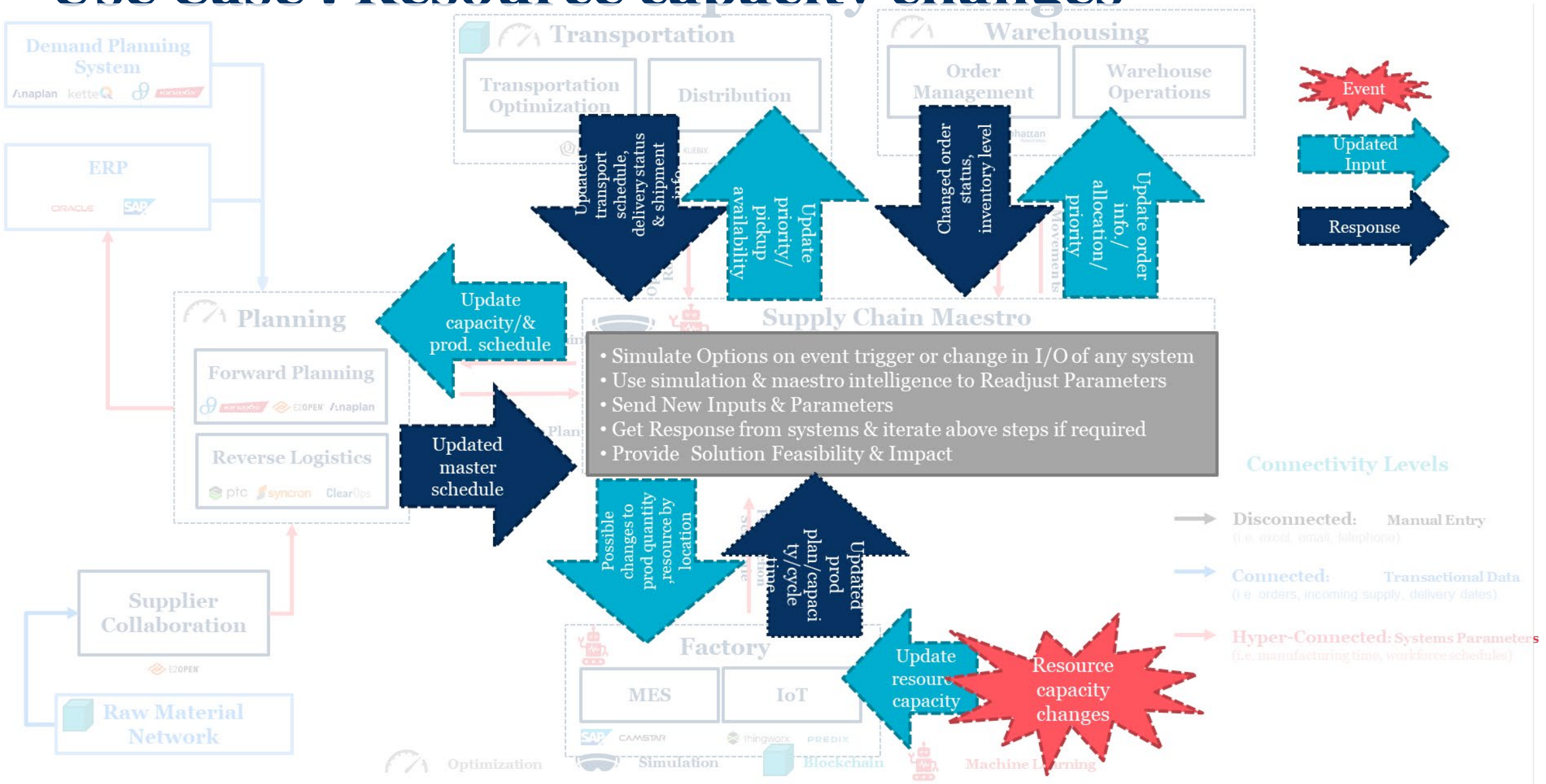
Use Case : Resource capacity changes



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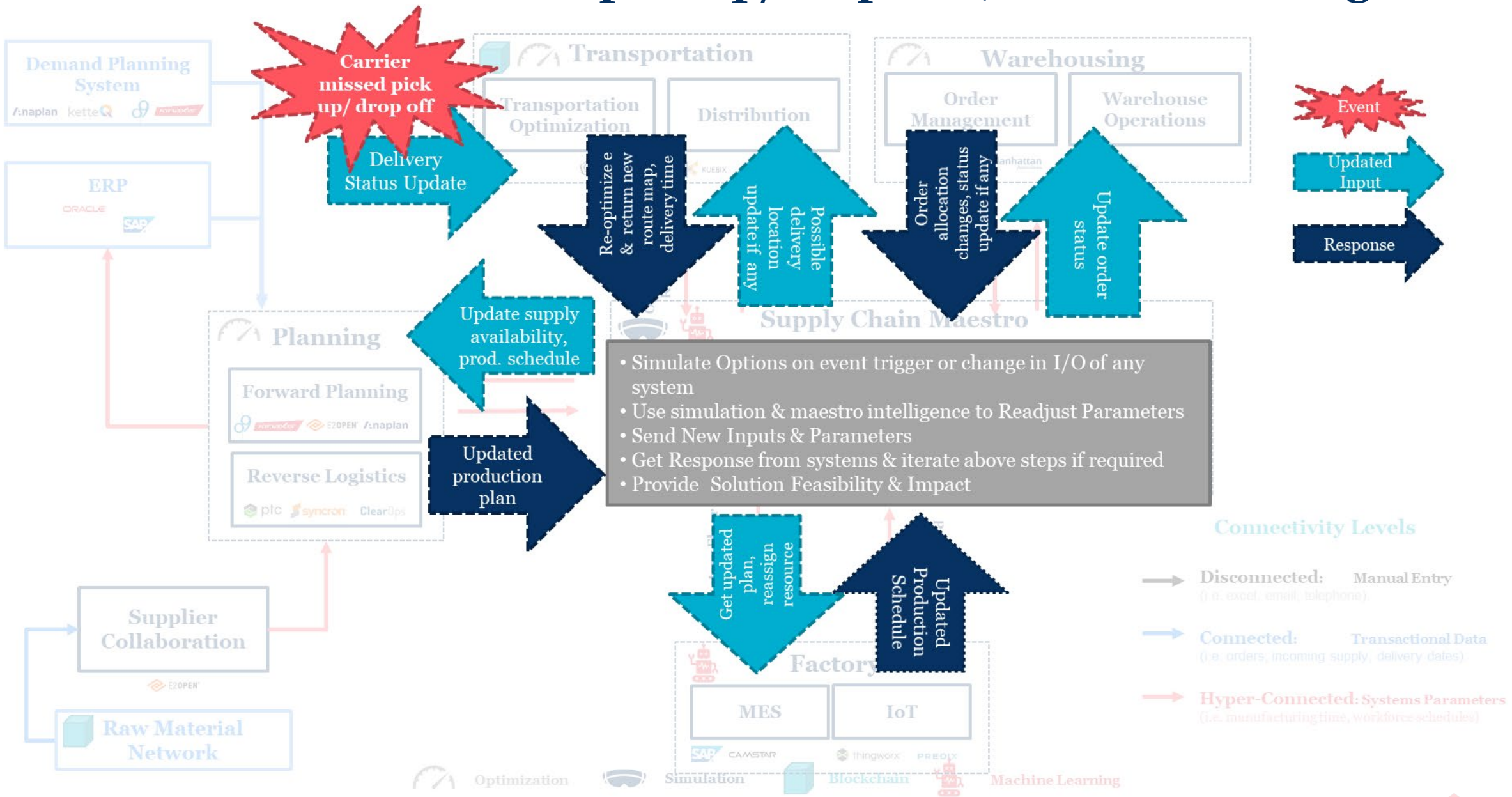
Use Case : Carrier misses a pick up/drop off (to manufacturing location)



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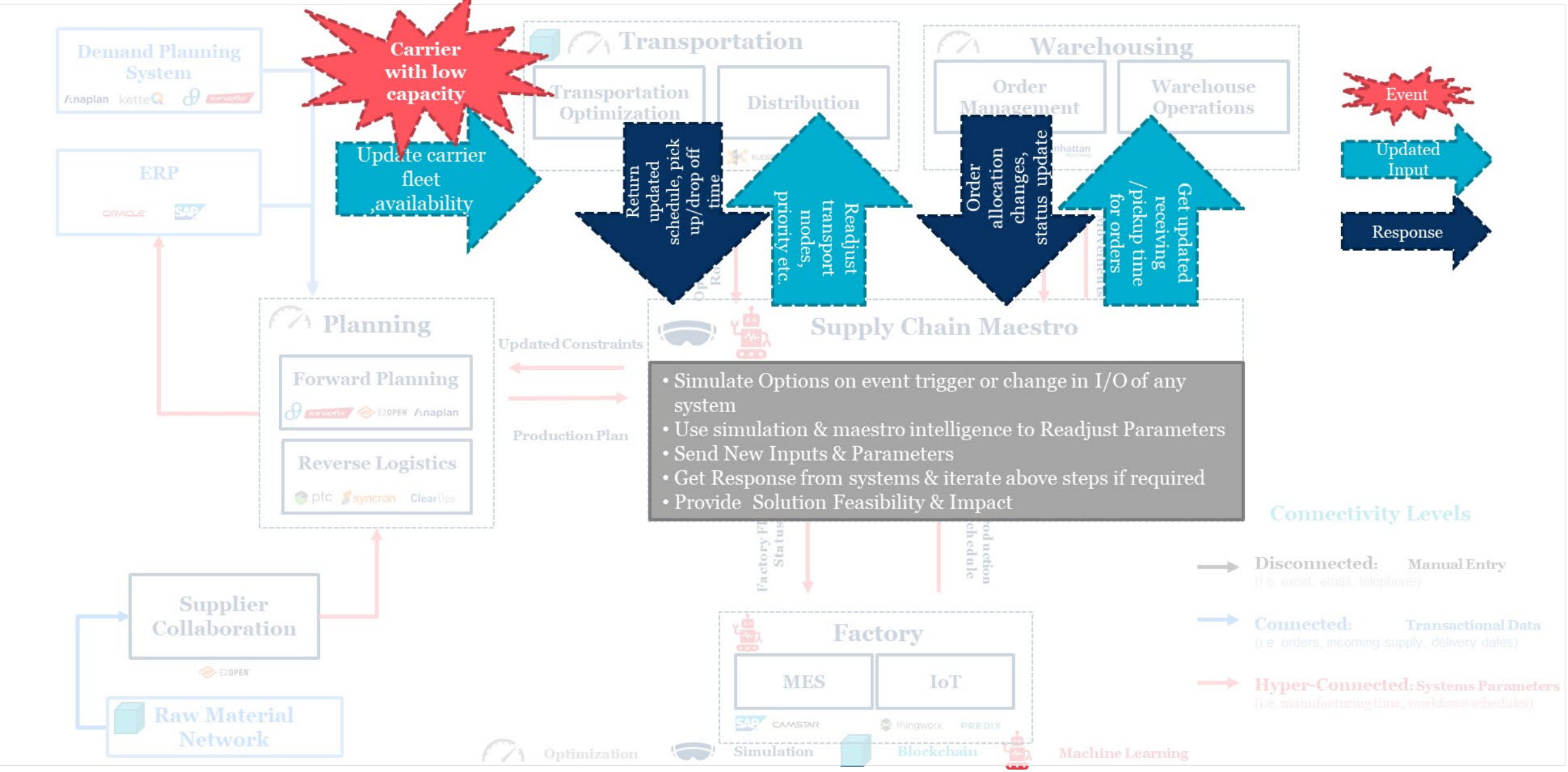
Use Case : Carrier missed capacity (Finished Good Delivery to DC)



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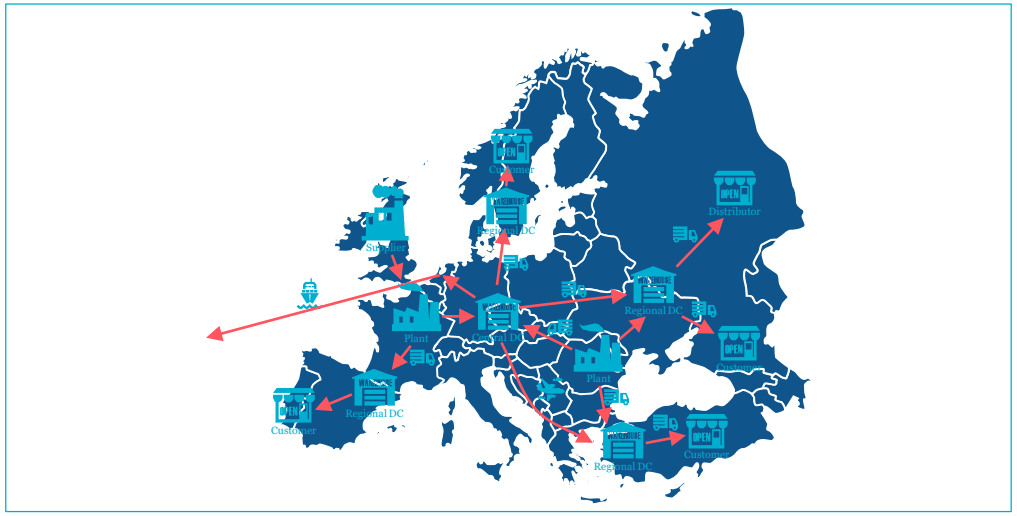
Managing the future supply chain will include enhanced partner collaboration that thinks beyond the enterprise's borders

Concept: Difference between enterprise planning and partner collaboration

Multi-echelon **enterprise** planning



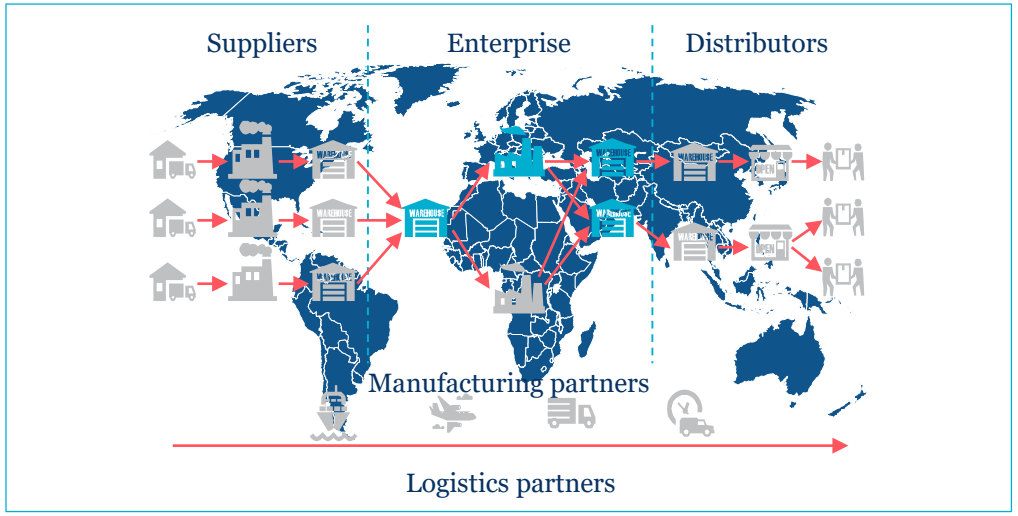
- Plans: tactical, operational
- Capacities
- Schedules
- Sequences and priorities
- Commitments

- Exceptions and expedites
- Execution statuses
- Actuals

Depth of integration

Integration type

Multi-tier **partner network** planning



Breadth of integration

- Tier 1/Tier 2 suppliers
- Raw material suppliers
- Manufacturing contractors
- Transportation providers

- 3PL and distribution service providers
- Retail partners
- Service partners

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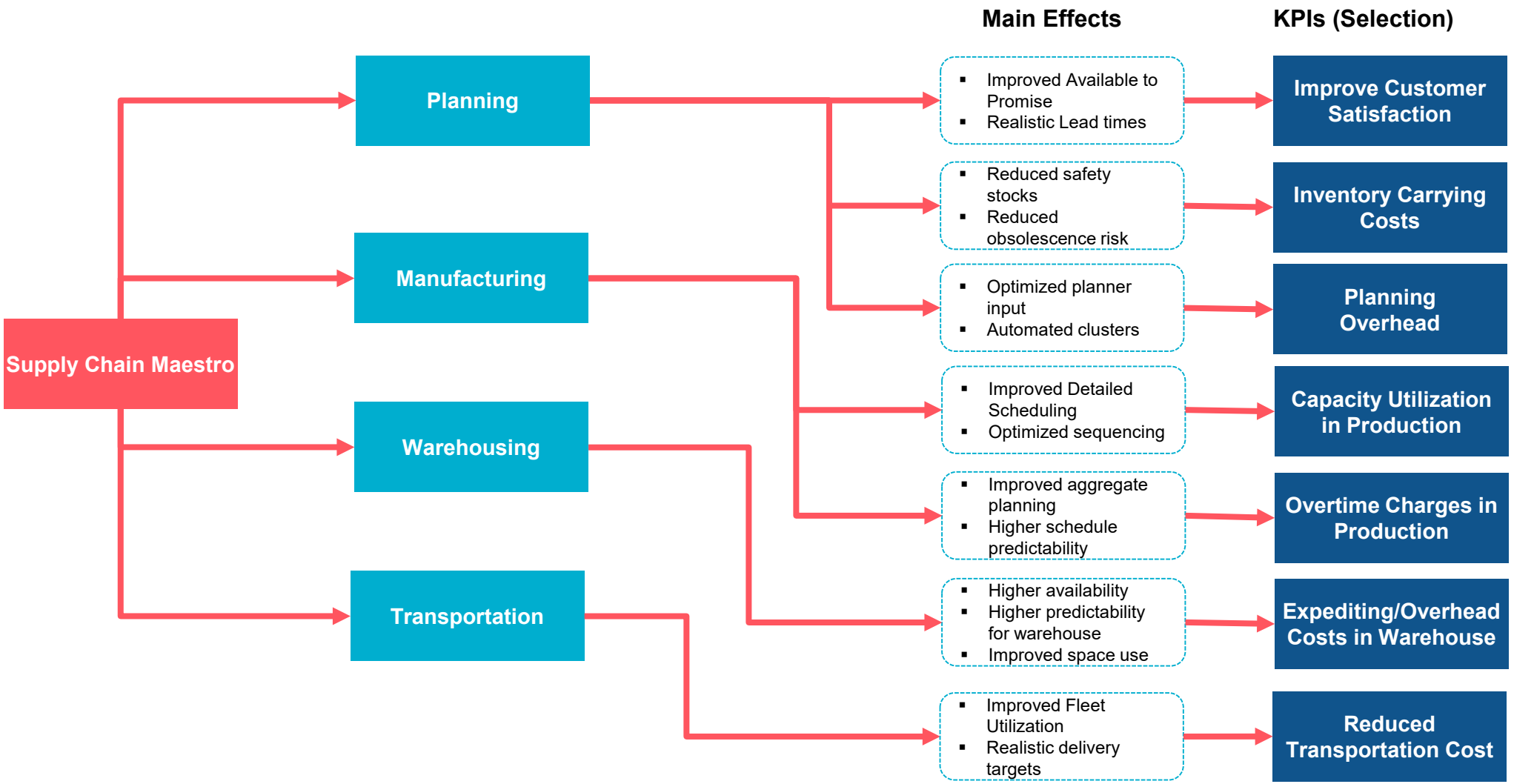
Hyper-connectivity improves KPIs across the Supply Chain



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