McKinsey & Company

Rethinking the consumer-goods supply chain in response to COVID-19

Information for consumer-goods leaders

ALL INFORMATION CURRENT ONLY AS OF 10/19/2020

THIS DOCUMENT IS INTENDED SOLELY TO PROVIDE INSIGHTS AND EXAMPLE PRACTICES.

THIS DOCUMENT DOES NOT CONSTITUTE ADVICE.

Introduction

COVID-19 is, first and foremost, a global humanitarian challenge.

Thousands of health professionals are heroically battling the virus, putting their own lives at risk. Governments and industry are working together to understand and address the challenge, support victims and their families and communities, and search for treatments and a vaccine.

Within this health and economic crisis, consumer-packaged-goods (CPG) companies are facing significant changes in volume and volatility of demand and supply.

This document is meant to help senior leaders understand the impact of the COVID-19 situation on their supply chain and take steps to protect their employees, customers, supply chains, and financial results through a supply-chain control tower.

Read more on McKinsey.com $\rightarrow$

COVID-19 has already affected supply chains significantly and heightened uncertainty about the near future

What is happening

Demand for many items is **significantly volatile**. While short-term demand for some items has skyrocketed, demand for other items has significantly decreased

Physical supply chains have been disrupted. Quarantines and lockdowns have **slowed or interrupted the physical flow of materials** around the globe

A **tremendous level of uncertainty** has been introduced, and unpredictable events (e.g., unavailability of a warehouse and all its inventory because of potential infection, a supplier going out of business) require immediate action

How to respond to the crisis

Create supply-chain **transparency** across different data systems connecting functions, plants, suppliers, and customers

Set up a **cross-functional, empowered team** to accelerate decision making with imperfect data

Decision making can be guided by **scenario-driven processes** that consider operational, customer, and financial impact

Provide **senior leadership support** to break down functional silos and enable fast decision making

We describe the journey to a post-COVID-19 next normal as having five stages

This document focuses on resilience, return, and reimagination considerations for CPG companies

Resolve   Determine the scale, pace, and depth of action required

Resilience React to and manage the supply-chain shock through a control tower

Return   Ramp up to stable operations

Adjust supply chains to the expected new demand

Look for moves to gain advantage

Reimagination Based on hard lessons from the crisis, reimagine what the next-normal supply chain should be (e.g., autonomous planning)

Reform   Understand how the regulatory and competitive environment of the industry may shift and have an impact on supply chains

Source: Adapted from "Beyond coronavirus: The path to the next normal," McKinsey.com

The journey to post-COVID-19 'next normal' has five stages.
The following section focuses on CPG supply chain: Resilience

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COVID-19 crisis is resurfacing perennial questions that need an integrated crisis response, and it may define a next normal in CPG supply chains

Customer service and collaboration

How to **simplify the portfolio** to optimize manufacturer and retailer supply chains (win/win)?

How to **allocate insufficient inventory** across customers to create win-win situation?

How to **address dipping service levels** with partners?

How to improve end-to-end (E2E) **cost to serve**?

Supplier management

How to fast-track new-supplier approval processes?
How to **maximize supply continuity** and raw material availability?

How to **adjust production plans** with shortages in supply?

How to **reprioritize raw-material orders** as demand signal shifts?

Manufacturing operations

How to **maximize manufacturing up time** in labor scarcity and prioritize utilization of available capacity?

How to **plan for backup sourcing** where there is global production?

How to **fast-track new formulation** into production in case of potential new or substitute ingredients?

Distribution-center (DC) network

How to **plan for backup capacity** in case of DC closures? Flexible storage? Mobile warehouses?

What to **change in DC operations** to maximize product availability and quick turnaround of products?
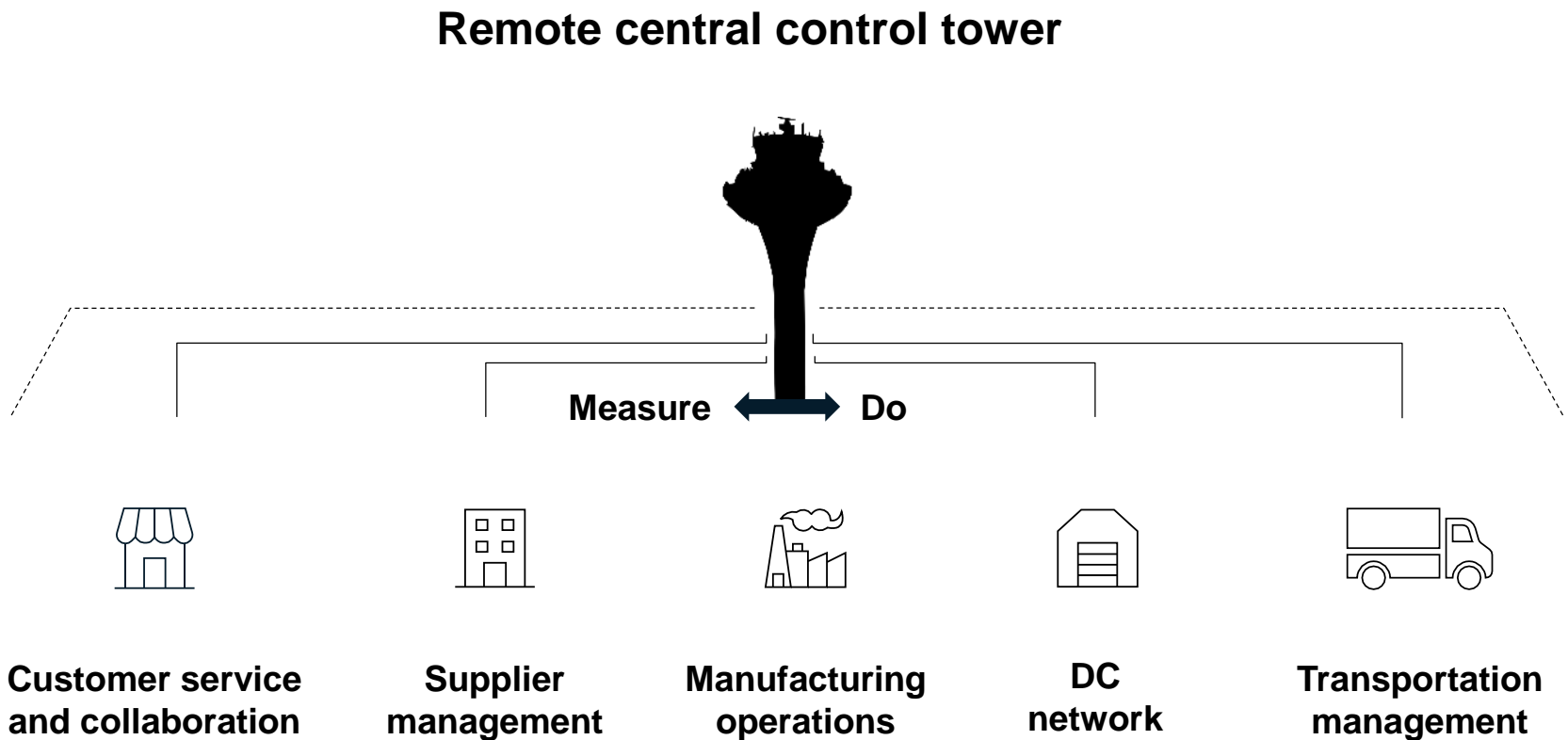
Transportation management

Should the last-mile delivery be rethought to ensure **transportation availability and the best customer service?**

Are there opportunities between **inbound and outbound** that have not been considered?

How to **manage the right set** of expedites?

What **short-term actions** to take to build **"flex"-fleet** capacity from partners?

A control tower can increase resilience through transparency and rapid, fact-based decision making

Remote central control tower

Measure ⬌ **Do**

Customer service and collaboration

Supplier management

Manufacturing operations

DC network

Transportation management

Data transparency and metric tracking

Focuses on optimal approach to maximizing product availability

Set up with full authority and accountability to make decisions

Organized as a cross-functional team

Communicates the urgency of the situation and approach

Tracks selected a set of metrics coupled with data and analytics to produce insights that guide decision making

The journey to post-COVID-19 'next normal' has five stages. The following section focuses on CPG supply chain: Return

| Scope of this section

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Demand archetypes during COVID-19 vary for CPG players, with volatility likely to continue across archetypes

Demand archetypes

Illustrative demand profile

1 Sustained demand increase

2 Pantry load and consume

3 Pantry load and preserve

4 Temporary demand decrease

In all cases, **volatility is likely to increase significantly:**

Timing uncertainty—when demand trends back to "next normal"

Demand uncertainty—what new demand will be

Competitive volatility—likely new competitions or competitive behaviors

Buyer volatility—shopping behavior likely to change—channels could be different (e.g., more bulk, more e-commerce)

Archetype 1—Sustained demand increase
# Example of actions to consider for return

Example: Cleaning products

Implement margin management for SKU portfolio

Proactive collaboration with retailers to determine product portfolio for next year, including new-product development

Optimize order complexity somewhere between the high complexity that used to exist and the extremely slimmed-down version during crisis peak
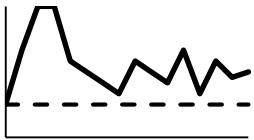
Move from fire fighting to scenario planning and proactive value-chain management

Drive margin management through E2E scenario planning from commercial through production and delivery

Invest in data and technology now to prepare autonomous planning capabilities

Optimize current capacity and plan for additional ramp-up capacity

Meticulously plan ahead for bottlenecks in personal protective equipment (PPE), cleaning product, space, etc., to protect labor to avoid reactive approach to capacity ramp-up

Leverage co-manufacturing network and consider building long-term, cost-efficient capacity

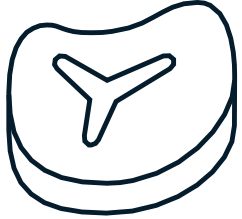Secure transportation capacity with carriers

Archetype 2—Pantry load and consume
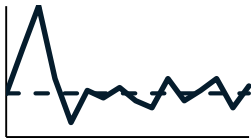# Example of actions to consider for return
Example: Packaged meat

Closely manage raw-material supply with demand-scenario planning for near term and long term

Work with suppliers to manage livestock to optimize cost while balancing supply risks in the future

Consider offering financial support to at-risk suppliers/farmers to secure future supply

Prepare plans to quickly ramp up supply-chain capacity based on demand and labor situations

Prepare meticulous plans for operations ramp-downs and ramp-ups for facility cleaning to minimize downtime in case of COVID-19 infection cases

Optimize labor cross-utilization from low-demand channels and facilities

Minimize wastage

Consider donating or selling products of "away-from-home" or excess products to associations in need of raw material while conventional-channel demand or conventional-channel capacity is absent

Archetype 3—Pantry load and preserve
# Example of actions to consider for return

Example: Pasta

Closely work with retailers, monitoring point-of-sale (POS) and inventory data to sharpen near-term view of demand and to adjust production

Use a supply chain control tower to actively minimize the total-delivered-cost of the supply chain

Balance on-hand finished-goods inventory within manufacturing and distribution network

Identify priority SKUs for inventory replenishment
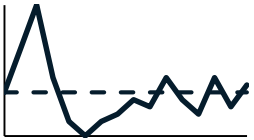
Closely manage global raw-material supply to ensure supply while avoiding excess on-hand inventory

Create full visibility into owned and vendor-managed inventory

Anticipate potential supply risks and put mitigating actions in place

Closely link demand and production planning to find right inventory balance

Refresh supply-chain-resilience playbook based on forward-looking demand scenarios

Develop forward-looking demand scenarios based on epidemiological and macroeconomic scenarios and observed consumer shifts

Build and update a set of resilience levers, with clear actions and trigger points, to increase speed of response (e.g., if and when demand starts to drop)
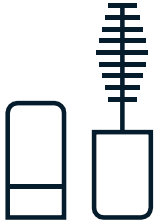
Archetype 4—Temporary demand decrease
# Example of actions to consider for return

Example: cosmetics

Stay close to near-term demand and adjust production schedule accordingly

Use control tower to drive minimal total delivered cost with a focus on balancing labor costs and reduced demand

Consider maintaining full workforce through use of temporary furloughs instead of permanent layoffs of part of workforce
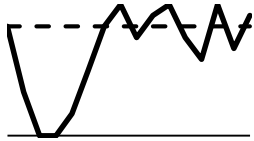
Strategically manage cash flow

Adjust inventory targets to match near-term-demand forecast

Reduce hours of nonessential employees for duration of demand reduction

Take advantage of plant or production-line downtime

Complete any required maintenance and clear opportunistic maintenance backlog

Consider pulling overhauls, upgrades, and capital projects forward, if possible with cash constraints

Prepare for employees to return to work

Develop strategy for production ramp-up while minimizing risk of spreading infections

Define new policies (e.g., staggered break times, lunchroom capacity) and ways of working to encourage social distancing

Make necessary changes to shop floor and office layout

Return stage is also the time to consider how to build agility in supply chain to react to scenarios and evaluate cost and service options

Customer service and collaboration

What are the demand recovery scenarios across the portfolio?

How to segment response to demand scenarios product or promotion activities that competitors would be launching?

How to balance inventory prebuild and service level to minimize wastage and maximize service levels?

Supplier management

Is it necessary to consider the geographic location of the supplier base?

How to increase visibility of supplier lead time?

How to continue to collaborate closely with suppliers to optimize raw-material availability (e.g., maintain supplier raw-materials inventory or supplier finished-goods inventory)?

Manufacturing operations

How to reassess manufacturing priorities given the various consumer-demand shifts across products and channels?

How to quickly build buffer capacity for managing product-demand volatility? Which products and formats to prioritize?

DC network

How much buffer capacity is needed? At which locations?

What DC flows would continue to be at capacity? Can DC flows be changed to reduce network lead times?

What changes in DC flows would be need to be considered for new demand (e.g., case pick for e-commerce vs. pallet picks)?
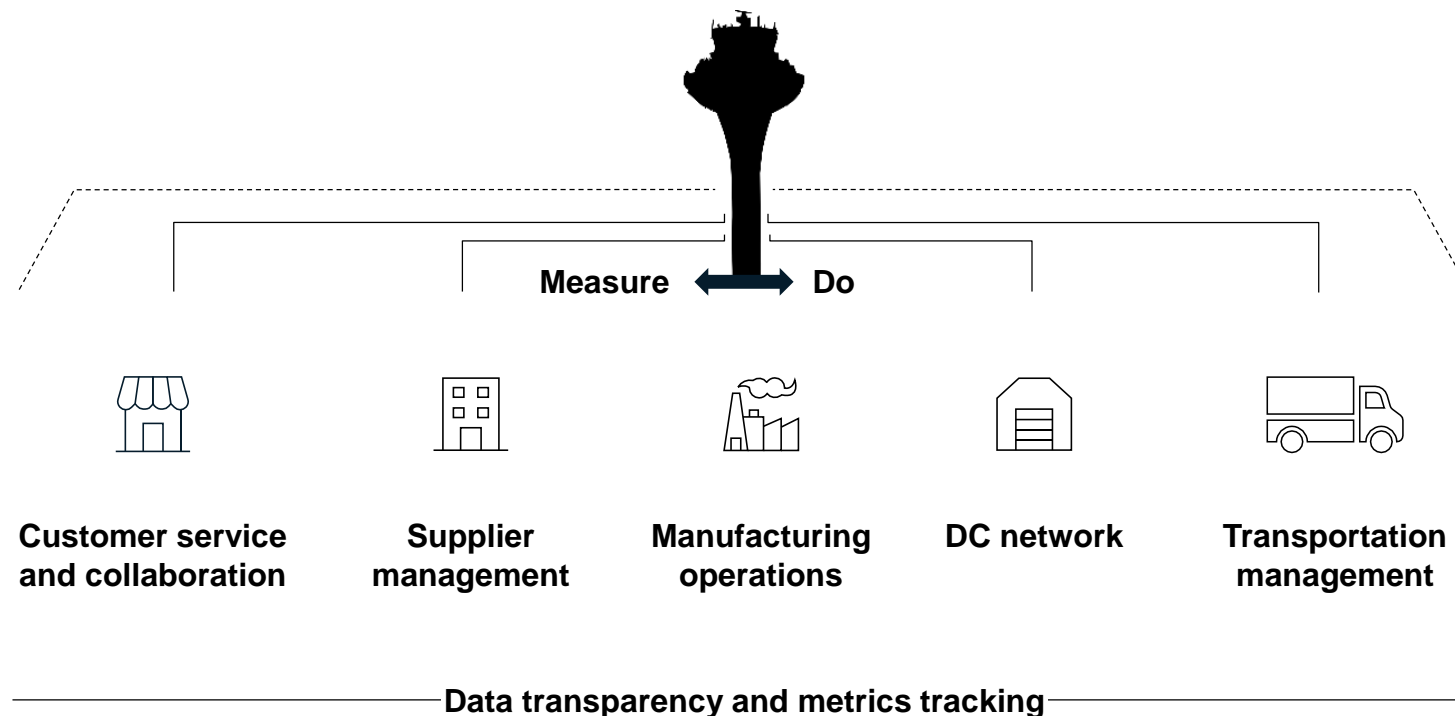
Transportation management

What are the cost and availability scenarios for third-party-logistics market?

Where are likely risks of availability and what new lanes and additional capacity buffers need to be built in?

In particular, institutionalizing the E2E control-tower function can permanently drive agile decision making

"Remote" central control tower

Measure ◄► Do

Customer service and collaboration

Supplier management

Manufacturing operations

DC network

Transportation management

─── **Data transparency and metrics tracking** ───

Forward-looking scenario planning highly frequent (e.g., weekly/daily)

Executive/chief supply-chain officer reporting and escalation of critical issues for close partnership with commercial team

Structured and cross-functional problem solving for efficient decision making

Root-cause analysis and resolution implementation **to gear toward continuous improvement**

In parallel, companies are considering various measures to minimize risk of reinfection

Example mitigation measures seen across industries

Protect workers and minimize on-site contact

Provide PPE to every worker and install hand-washing stations, and frequently monitor for compliance

Stagger starts and ends of shifts and create break shifts

Make production teams as small as possible and implement social-distancing measures

Encourage best-practice hygiene and behaviors

Senior leaders and managers to role-model best practices and use of safety gear on site to minimize risk of exposure

Leverage remote-working tools (institute remote working for high-risk sites and, if feasible, for other sites) until confirmation of containment of the virus

Reduce of essential travel and/or eliminate nonessential travel; encourage new ways of working where possible

Adapt facilities to prevent contamination

Develop detailed, site-specific checklists for processes, needed equipment, and postcrisis operational guidelines

Keep rigorous control of site entry and take temperature of everyone who enters

Increase frequency and intensity of facility cleaning, and ventilate facilities per latest guidance by health authorities

Reorganize layout of workstations and office areas to ensure distance of more than 1.5 meters is respected

Close communal areas (e.g., meeting rooms, changing rooms) and discourage use of elevator

For special areas, install additional cleaning procedures or machines

Establish containment plans in case of reinfection

Dedicate resources that are trained and committed to ensuring control of the spread in case of reinfection

Announce new developments, measures, and changes to established protocols in case recontamination does occur

Provide counselor or health expert to deal with health-related questions

Note: Many of these measures are also applicable to earlier stages of recovery. To prevent reinfection, it is important to continue to focus on these during the return stage.

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Source: Adapted from "Beyond coronavirus: The path to the next normal"

The next normal for supply chain could be framed by four themes
Sample levers

⬤ Deep dive follows

Reimagining a sustainable operations-strength advantage

Rethink network strategy, footprint, and partnership models to create a more resilient and flexible E2E value chain

Risk management is equally important as efficiency

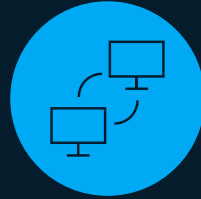**Prioritize local partners** and increased control and transparency with global partners

Replicate capabilities **with contract manufacturing in multiple locations**

Accelerate transition to omnichannel for greater customer collaboration

Leverage subscription **incentives** to shape customer demand online

Accelerating E2E value-chain digitization

Link internal and external digital systems, including those of suppliers

Launch **autonomous planning** to accelerate data insights into actions

Reinvigorate factory-of-the-future efforts

Launch digital logistics

Remove supply-chain bottlenecks through **automation, Internet of Things (IoT), and predictive analytics**

Continuously monitor throughput data for choke points and opportunities to remove bottlenecks

Rapidly increasing capital- and operating-expense transparency

Reassess **total operational cost structure**

Revisit operating model and governance while boosting investment in the Future of Work

Set a new standard for **rationalization and management of supply-chain complexity;** use transparency to prevent business-cost creep resulting from incremental complexity

Driving the Future of Work with new workforce skills and capabilities

Standardize process and train employees in health and safety measures

Leverage remote-working tools to bring central team expertise to address daily issues on demand at the plant level

Redeploy lean and automation to create safe working environment

Reskill production employees from executing repetitive tasks to data-driven operation, troubleshooting, and improving automated equipment

Portfolio of 50+ digital use cases can serve as inspiration to tailor specific approaches for companies

Digital machines

Integrating artificial intelligence into processes and machines for optimized performance

Digital maintenance

Leveraging physical components, such as sensors, and advanced analytics for targeted and proactive maintenance

Digital performance management

Creating single-source-of-truth performance-management engine with real-time leading and lagging indicators

Digital quality management

Enhancing quality, efficiency, and effectiveness using data, analytics, and IoT

Digitally enabled sustainability

Linking advanced analytics with IoT capabilities to step-change performance and reduce energy use and waste

Example digital use cases

Digital machines

Digital maintenance

Digital performance management

Digital quality management

Digitally enabled sustainability

Cycle-time optimization through big-data analytics of manufacturing line programmable logic controllers (PLCs)

Mixed reality to enable digital standard work and training

Digital lean tools (e.g., eKanban, eAndon, eSpaghetti)

Advanced industrial Internet of Things (IIoT) applied to process optimization

Artificial-intelligence-powered process control

Artificial-intelligence-guided optimization of machine performance

Digitally enabled variable task time

Digitally enabled modular production configuration

Light-guided production sequence

Automation use in packaging

Example digital use cases

Digital machines

Digital maintenance

Digital performance management

Digital quality management

Digitally enabled sustainability

Cost optimization of operations through sensor analysis

Remote assistance using augmented reality

Predictive maintenance aggregating data based on historical and sensor data

Machine alarm aggregation, prioritization, and analytics-enabled problem solving

Real-time pipeline cost optimization based on edge sensors

Analytics platform for deviation root-cause identification

Example digital use cases

Digital machines

Digital maintenance

Digital performance management

Digital quality management

Digitally enabled sustainability

Digital dashboards to monitor overall equipment efficiency (OEE) performance

Digital standard work

Analytics platform for remote production optimization

Digital twin for remote production optimization

Enterprise manufacturing intelligence system to upgrade operations management

Integration platform to connect machine-level data with enterprise software

Real-time asset performance monitoring and visualization

Reporting of sensor-based manufacturer key performance indicators (KPIs)

Digital tools to enhance a connected workforce

Digital recruitment platform tailored to shop floor

Digital twin of sustainability

Digitally enabled human-machine matching

Example digital use cases

Digital machines

Digital maintenance

Digital performance management

Digital quality management

Digitally enabled sustainability

Scanning to replace and improve performance for high-cost coordinate measuring machines

Automated in-line optical inspection to replace end-product manual inspections

Digital work instructions and quality functions

Digitized standard procedures for line operations with integrated workflow

Mixed-reality glasses to guide operators in end-of-line inspection

Field quality failures aggregation, prioritization, and advanced-analytics-enabled problem solving

IoT-enabled manufacturing quality management

Digital quality audit

Quality improvement by predictive analytics

Example digital use cases

Digital machines

Digital maintenance

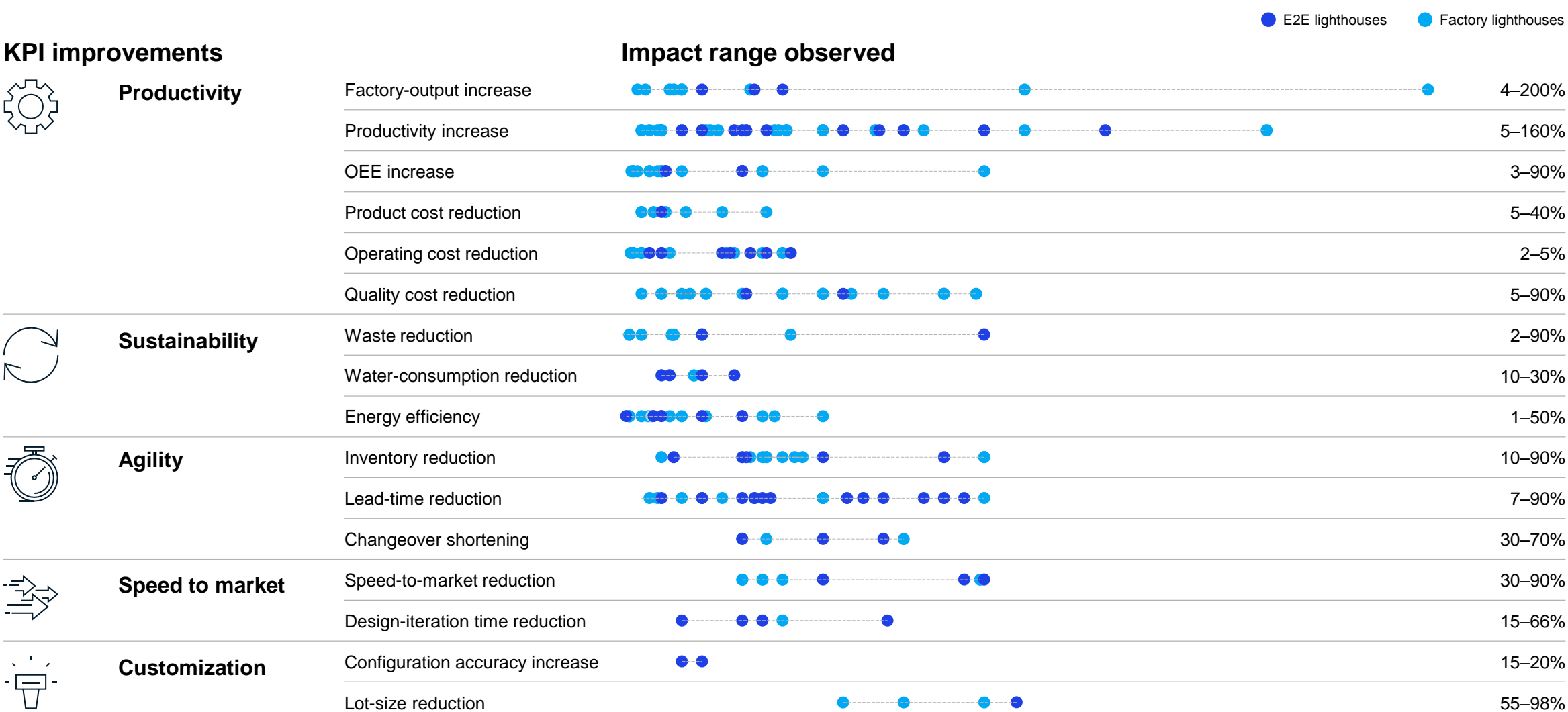Digital performance Management

Digital quality Management

Digitally enabled sustainability

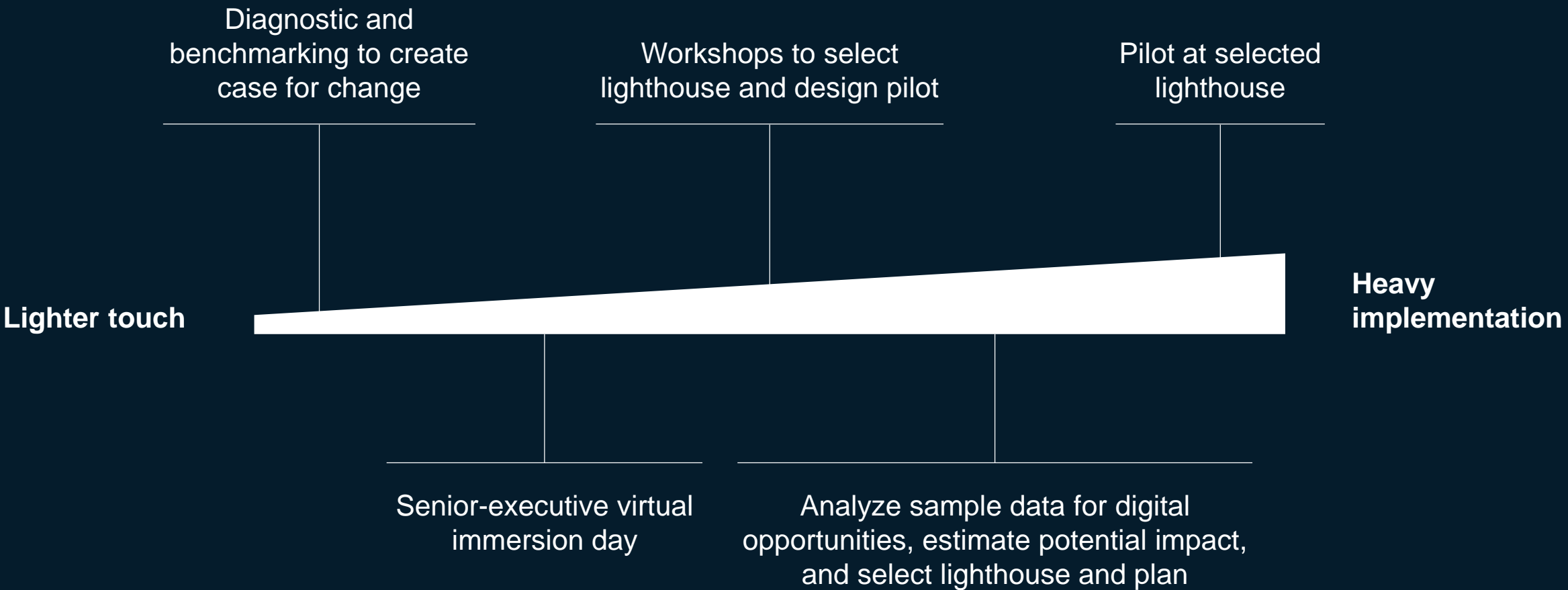Energy optimization by predictive analytics

IIoT real-time energy-data aggregation and reporting dashboard

Sensor-based data collection for energy management

A digital transformation of the factory and supply chain can lead to significant improvements across a range of KPIs

● E2E lighthouses   ● Factory lighthouses

KPI improvements   **Impact range observed**

Category	KPI	Range
Productivity	Factory-output increase	4–200%
	Productivity increase	5–160%
	OEE increase	3–90%
	Product cost reduction	5–40%
	Operating cost reduction	2–5%
	Quality cost reduction	5–90%
Sustainability	Waste reduction	2–90%
	Water-consumption reduction	10–30%
	Energy efficiency	1–50%
Agility	Inventory reduction	10–90%
	Lead-time reduction	7–90%
	Changeover shortening	30–70%
Speed to market	Speed-to-market reduction	30–90%
	Design-iteration time reduction	15–66%
Customization	Configuration accuracy increase	15–20%
	Lot-size reduction	55–98%

A digital journey as part of the reimagination stage can start in different ways, from light touch to heavy implementation

Diagnostic and benchmarking to create case for change

Workshops to select lighthouse and design pilot

Pilot at selected lighthouse

Lighter touch

Heavy implementation

Senior-executive virtual immersion day

Analyze sample data for digital opportunities, estimate potential impact, and select lighthouse and plan

Disclaimer

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