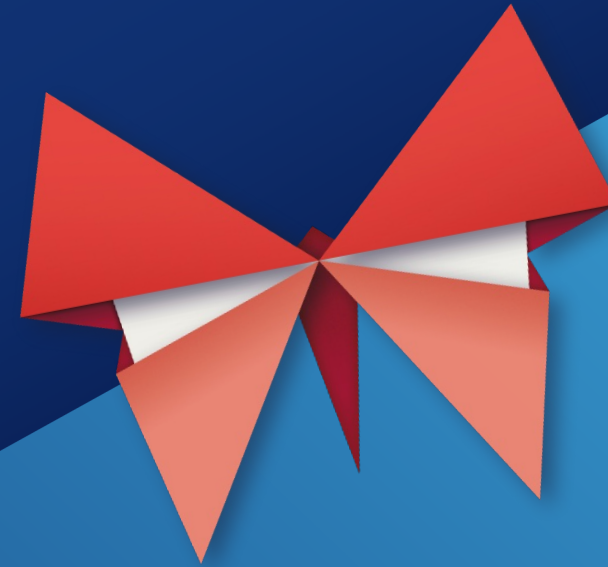


# 7 KEY CAPABILITIES for a Supply Chain Lean Transformation

(E2E, Demand Driven, Agile & Lean)

A New Paradigm for achieving Breakthrough Results and Competitive Advantage in Customer Service & Profitability



Webinar & White Paper



GEMBAKAIZEN™

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# Why we Need Resilient E2E, DD, Agile & Lean Supply Chains

## 7 Key Capabilities for a Lean Resilient Supply Chain Transformation

### 1. Strategic E2E Mapping of the Supply Chain

- Map the E2E Supply Chain and Learn to See the Logistics Loops
- Develop an E2E Lean Vision
- Prioritize a Roadmap
- Develop a Business Case

### 2. Implement a Pull Planning System

- Implement a Demand Driven Pull S&OP
- Implement Demand Driven Pull S&OE
- Implement Levelling
- Implement Synchronisation

### 3. Create Material & Information Flow

- Create Flow in Production
- Create Flow in Warehouses
- Create Flow in Transportation
- Streamline the Information Flow

### 4. Increase Resource Efficiency

- Improve OEE in Production
- Improve Efficiency in Warehouses
- Improve Efficiency in Transportation
- Modernize with Digitalisation & Automation Technologies (but respecting the Pull Flow System)

### 5. Reinforce the KAIZEN™ Culture

- Engage Top Management in E2E Supply Chain Transformation
- Implement Daily KAIZEN™ in All Natural Teams
- Learn how to do Focused KAIZEN™ Events
- Implement a Strategy Deployment Process
- Educate & Train with a KAIZEN™ Lean Academy

### 6. Increase Supply Chain Resiliency

- Explore the Pull System to Fight Instability and become more Resilient
- Develop a Supply Chain Digital Twin Model to Gain more Visibility
- Install an Oobeya Room for Visual Risk/Crisis Management
- Implement a Tiered Help Chain Process

### 7. Pilot, Assess, Benchmark & Scale

- Engage in Pilots & Benefits Tracking
- Develop and Use an Assessment Maturity Model
- Do Internal & External Benchmarking
- Go Quickly with the Deploy & Scale Process

## KEY CAPABILITY #6

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# Increase Supply Chain Resiliency



- Explore the Pull System to Fight Instability and become more Resilient
- Develop a Supply Chain **Digital Twin Model** to Gain more Visibility
- Install an *obeya* Room for Visual Risk / Crisis Management
- Implement a Tiered Help Chain Process

# Increase Supply Chain Resiliency

We live in a VUCA World... and its getting worse !!!

## We are facing challenges at every turn:

- a pandemic
- a strong recovery after a sharp and deep global recession
- a war in Ukraine
- dramatic economic sanctions against Russia
- mounting inflation
- ...

[Jamie Dimon's annual letter to J.P. Morgan shareholders](#)

## More than ever We live in a **VUCA** world

### Volatile

The environment demands you react quickly to ongoing changes that are unpredictable and out of your control

### Uncertain

The environment requires you to take action without certainty

### Complex

The environment is dynamic, with many interdependencies

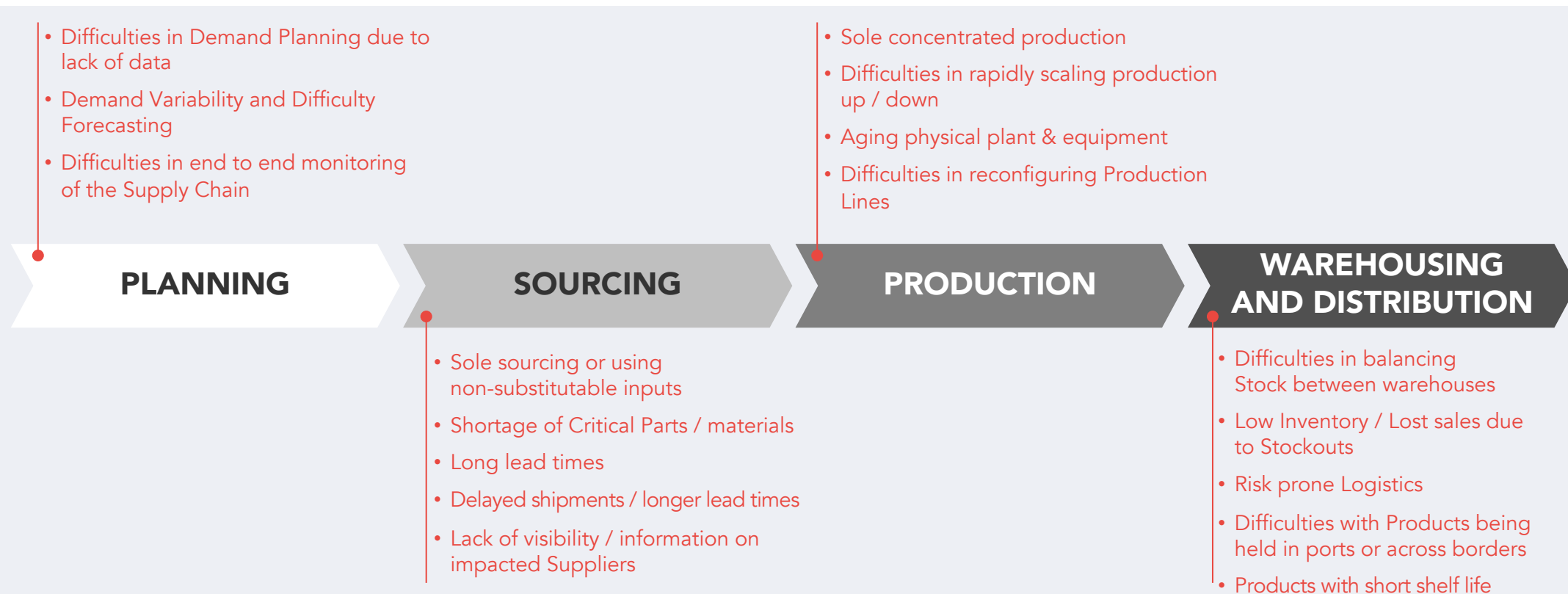
### Ambiguous

The environment is unfamiliar, outside of your expertise

- We are living an unprecedented **Surge in Demand**... amplified by Post Covid Consumption & Investment (the whiplash effect)
- We also live in an unprecedented **Shortage in Supply**... amplified by Disruption in Containerized Logistics, Semiconductor Shortage, Energy and Raw Materials Inflation, and others...
- The Risk of a Shift from a **High Demand-Low Supply** to a **Low Demand-Low Supply** Economy is on the Horizon (like the 1974 Arab-Israel War + Oil Crisis)
- All the VUCA Factors put a **High Pressure on Supply Chains** in all Sectors to **keep OTIF and Delivery Times** at acceptable levels
- The Capability of **Being Resilient: minimize Disruption and quickly recover** is therefore a major one in current Times

# Increase Supply Chain Resiliency

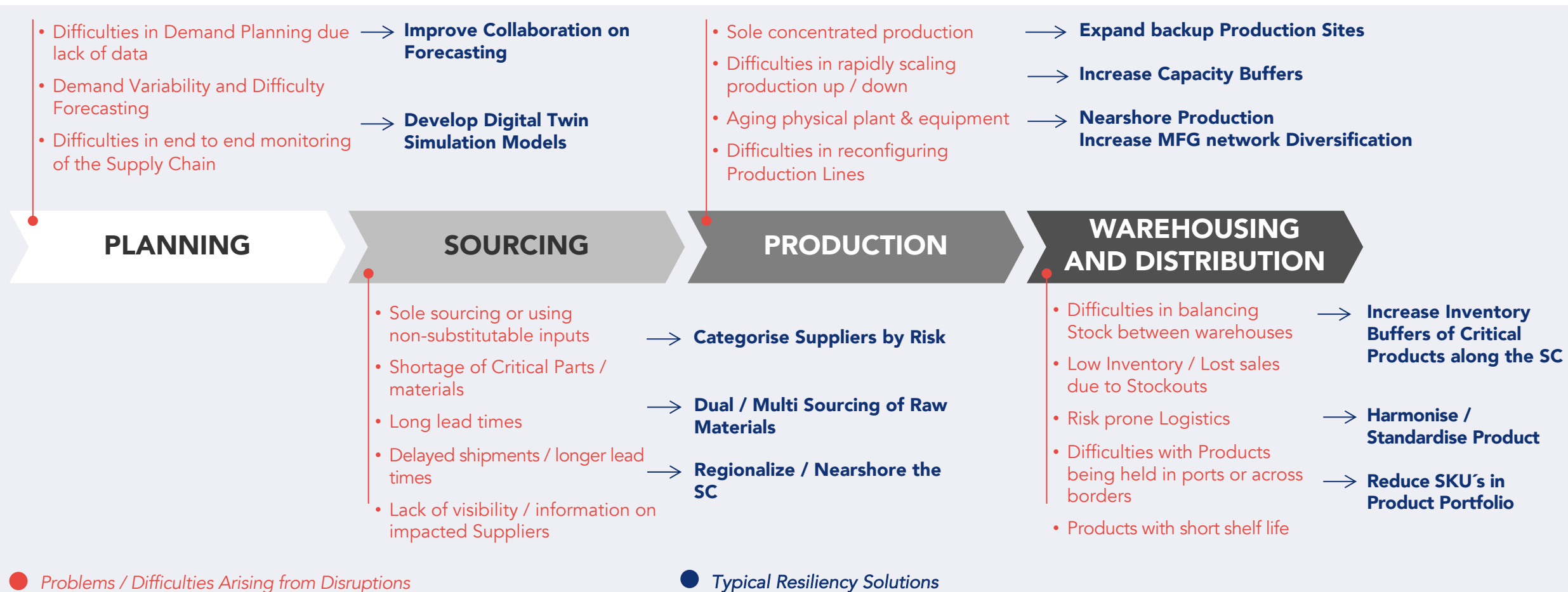
As a Consequence Companies are facing Significant Challenges across Supply Chains in the wake of the Crisis



● Problems / Difficulties Arising from Disruptions

# Increase Supply Chain Resiliency

And they are Exploring several Countermeasures to Reduce Risks and Improve Performance



# Increase Supply Chain Resiliency

To Increase **Resiliency** in Traditional Push Supply Chains **has a High Cost !!!**

Increasing **Resiliency in a E2E DD Agile Supply Chain is Much Less Costly and Highly Effective**

| SC Area                    | Type of Resiliency Solution            | Traditional Push Resiliency   | E2E Pull Agile Resiliency   |
|----------------------------|--|---|---|
| PLANNING                   | Improve Collaboration on Forecasting   | Efforts in <b>better Forecasting</b><br>No big change in Planning Processes / Algorithms  | S&OE is based on <b>Real Demand</b> and<br>S&OP is Focused on making available the <b>needed Capacity</b>                           |
|                            | Develop Digital Twin Simulation Models | <b>Theoretical E2E Simulation Models</b> are built to test Scenarios<br><b>Huge Buffers</b> are Created both in <b>Capacity &amp; Inventory</b> | Simulation Models based on <b>Gemba Maps and Pull Principles</b><br><b>Size of Needed Buffers is Minimised</b>                      |
| SOURCING                   | Categorise Suppliers by Risk           | <b>Cooperation with Suppliers is Limited</b> therefore Visibility is Limited<br>Also <b>high levels of Dysfunctional Stocks</b> hinder Agility  | <b>Suppliers Engaged in a Lean Development Program</b><br><b>Joint participation in Value Chain Mapping &amp; Analysis</b>          |
|                            | Regionalize / Nearshore the SC         | <b>Limited Exploration of Nearshoring</b><br>Suppliers are <b>not Challenged to implement Pull</b>  | <b>Nearshoring explored to Max</b> with clear Cost Trade-offs<br>Suppliers are <b>Challenged to Implement Pull Systems</b>          |
|                            | Dual / Multi Sourcing of Raw Materials | <b>Dual Sourcing</b> is the Preferred Solution  | <b>Triple Sourcing (60/20/20)</b> is the Preferred Solution   |
| PRODUCTION                 | Expand backup Production Sites         | <b>High Investment in New Sites or New Lines</b>  | <b>Invest Only after exploring Resource Efficiency (ex: OEE)</b>  |
|                            | Increase Capacity Buffers              | <b>High Levels of Resource Waste (Muda)</b>   | <b>Plan Capacity Buffers with a Levelling Algorithm</b> (Rhythm Wheel or Small Batch Sequencers)                                    |
|                            | Nearshore Production                   | <b>Limited Nearshoring</b> of Production  | <b>Expanded Nearshoring and Increased Verticalization</b>   |
| WAREHOUSING & DISTRIBUTION | Increase Inventory Buffers             | <b>Exponential Increase of Buffers</b><br><b>Size of Needed Buffers is Unrealistic</b> and are never implemented                                | <b>Buffers are Increased in some % for Critical Parts</b><br><b>Amount is manageable</b> under Existing (or slightly more) Capacity |
|                            | Harmonise / Standardise Product        | <b>Severe Reduction on Product Offer</b>  | <b>Limited Reduction in Product Offer</b> due to Small Amount of Buffers  |
|                            | Reduce SKU's in Product Portfolio      | <b>Severe Reduction on Product Offer</b>  | <b>Partial Reduction</b> following a VRP Variety Reduction Program  |

# Increase Supply Chain Resiliency

## A Benchmark Case - How Toyota Motor Corporation Performs during Crisis

### 1974 Global Oil Crisis



### 2011 Earthquake & Tsunami Disaster



#### PROBLEM

- Arab-Israeli War = High Inflation + Materials Shortage
- High Prices & Difficulties in Obtaining Materials & Components
- Car Demand started to Fall
- Efforts to Cut Costs not Enough to Maintain Profitability

- Tohoku Earthquake + Tsunami = 450K homeless + 15,5K Deaths
- Fukushima Nuclear Disaster
- Toyota Production fell 78% prompting Inventories Adjustment
- Major Review of Supply Network was performed to embed Resiliency

#### RESULT

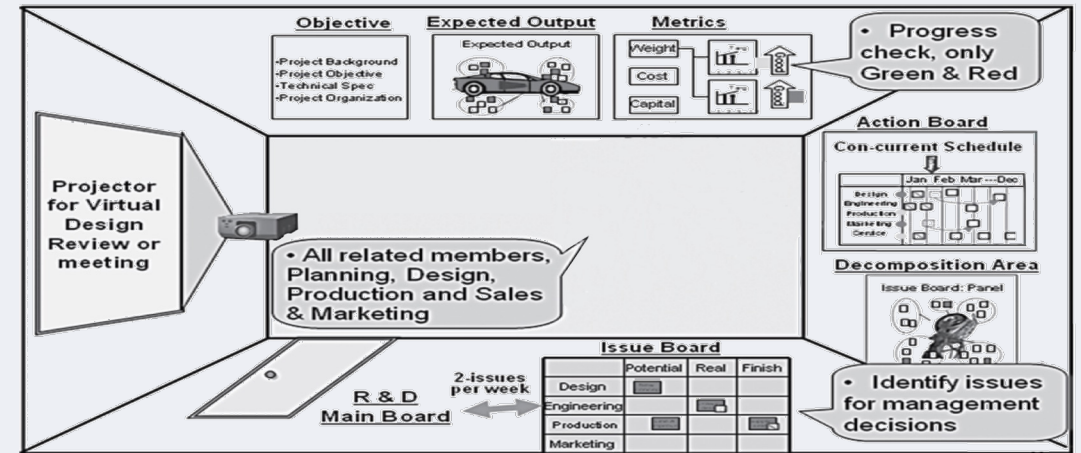
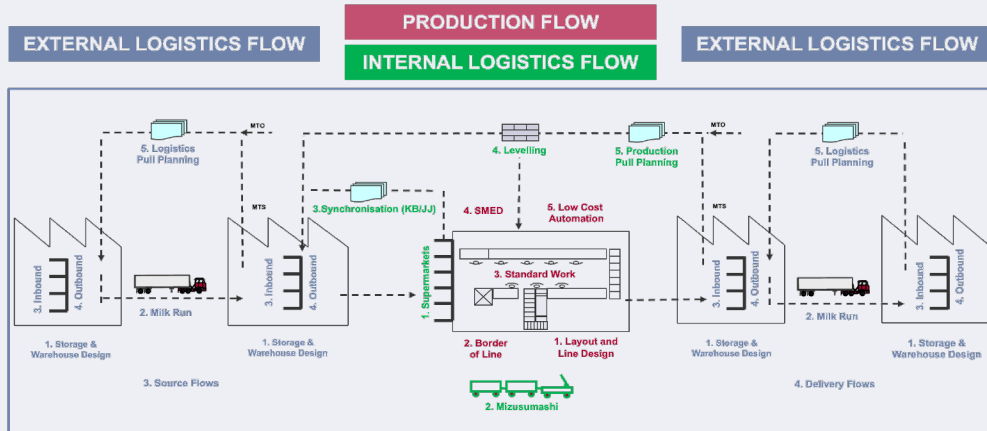
- Toyota was the 1<sup>st</sup> to React to Falling Demand
- Production Adapted to Demand and All Inventories Quickly Adjusted
- Toyota was the 1<sup>st</sup> to Restart Production when Demand Recovered
- The World saw the Superior Toyota Operations System – **Lean, Fast & Resilient**

- A Business Continuity Plan was Created
- It Included Triple Sourcing (60/20/20) and Safety Stocks for Critical Parts
- Once Again the Speed of Recovery was Outstanding due to the Help Provided to Suppliers and the Agility of the Production System
- In the next Crisis (2021 Semiconductor) Toyota had no major Issues



# Increase Supply Chain Resiliency

Also we need to Develop a Supply Chain **Digital Twin Model** to Gain more Visibility  
 And Use an **obeya Room** for Visual Risk / Crisis Management

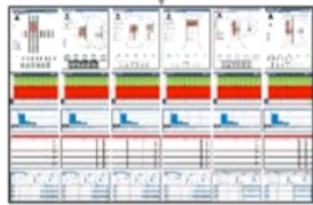
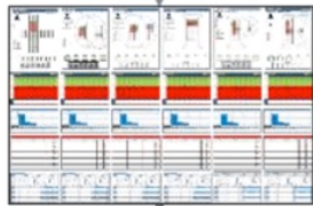
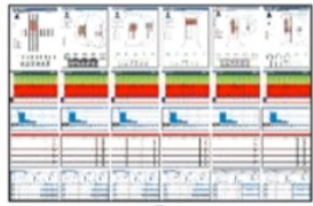


- Start with a Strategic E2E Mapping of the Supply Chain
- Explore Pull System Solutions like Leveling of Capacity, Compressing Leadtime's, Nearshoring, Triple Suppliers, SKU Variety Reduction, etc...
- Identify critical Components, Equipment, Facilities & Transportation Routes
- Setup Inventory & Capacity Buffers
- Simulate Several Options to Reduce Inventory Cost & Capital Investment
- **Use the Digital Twin Model** to review Supply Chain Performance on a Monthly Basis under the S&OP Planning Process

- Post all Supply Chain Transformation Plans in a Visual Place (Physical or Virtual Room) – **obeya Room**
- Perform Risk Analysis based on Crisis Evolution Scenarios
- During Crisis Review Resilience Recovery Roadmap on a Monthly Base
- Quickly Simulate & Implement Countermeasures
- Review Roadmap Implementation Performance and Countermeasures for better Project Performance

# Increase Supply Chain Resiliency

## Setup an Help Chain Quick Reaction Process



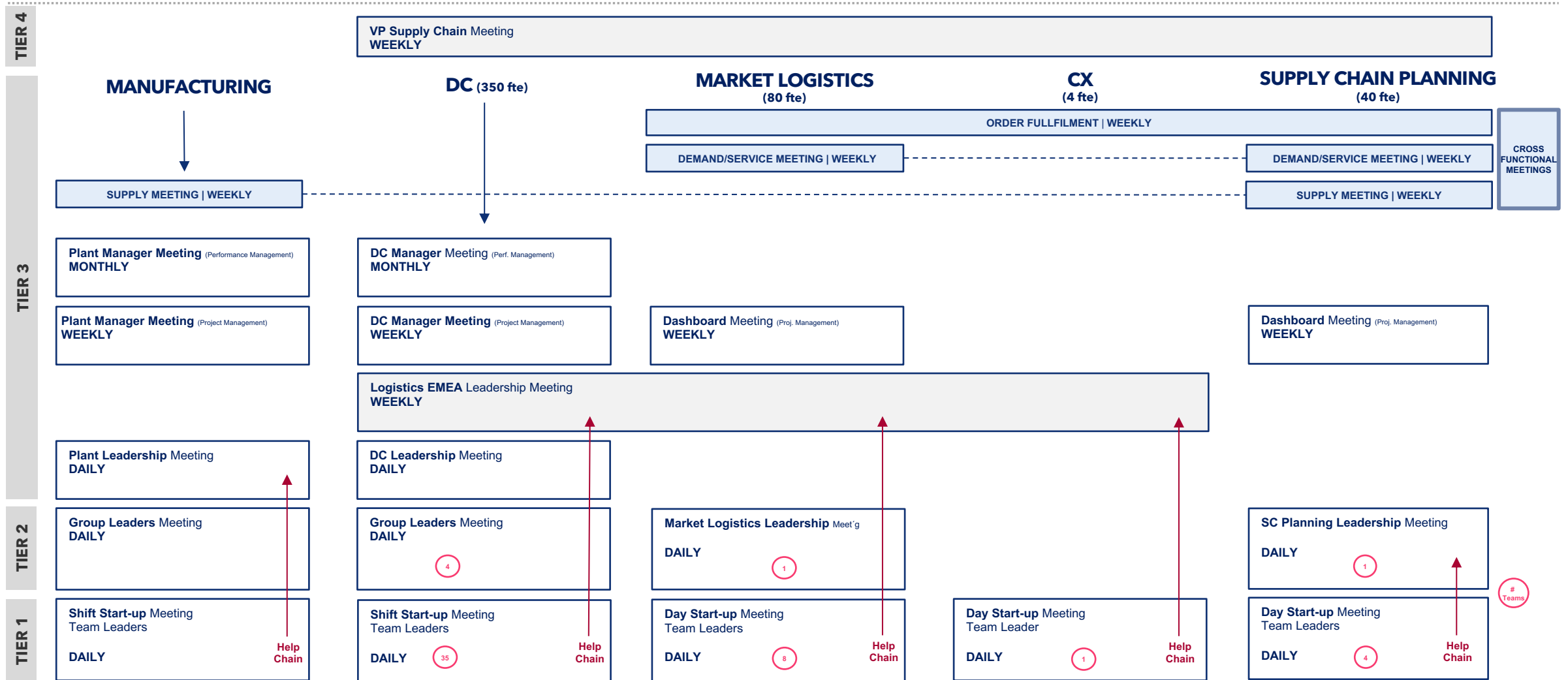
- Daily Management meetings are used to identify wins/losses & quickly move to actions
- Setup a TMS Help Chain: Identify critical attendees based on how the KPI information should cascade
  - Think of inputs & outputs & who is impacted
  - Identify key leadership to disseminate information from one department to another
  - Align KPI's across all Tier Levels
  - Separate but interconnect meetings
- Schedule a separate Problem – Solving Meeting with progress briefly noted at the Daily Management Meeting

**HOW TO ESCALATE & SOLVE DIFFICULT PROBLEMS**

# Increase Supply Chain Resiliency

## An Example of Tiered Help Chain Team Meeting

Additional Reading Material!



## CONCLUSIONS & NEXT STEPS

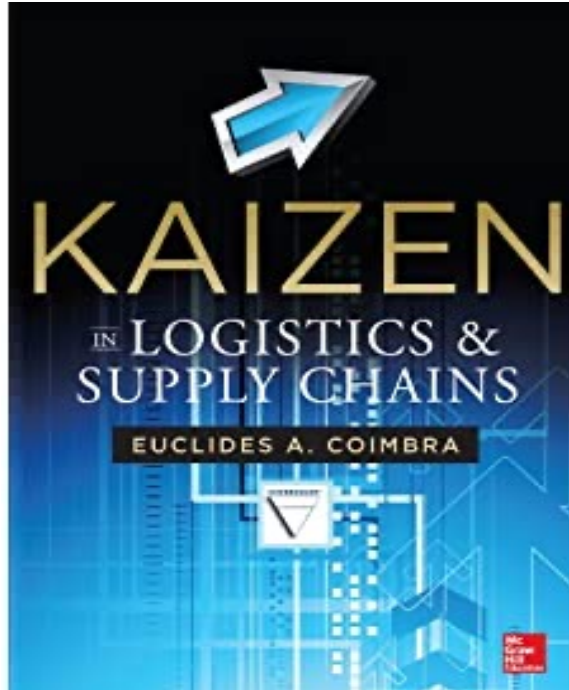
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# How can I Learn More

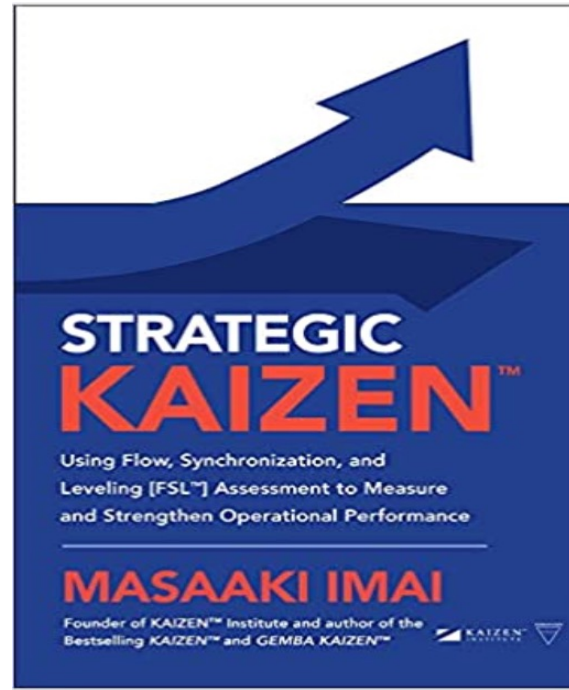
- Reading Materials
- Learning by Doing - Select & Start a **Pilot** Strategic E2E Value Stream Mapping
- Get Support from Kaizen Institute (or another Sensei)
- Make a Performance Based Partnership with the Sensei

# How can I Learn More

Learn all the Details with KAIZEN™ Books

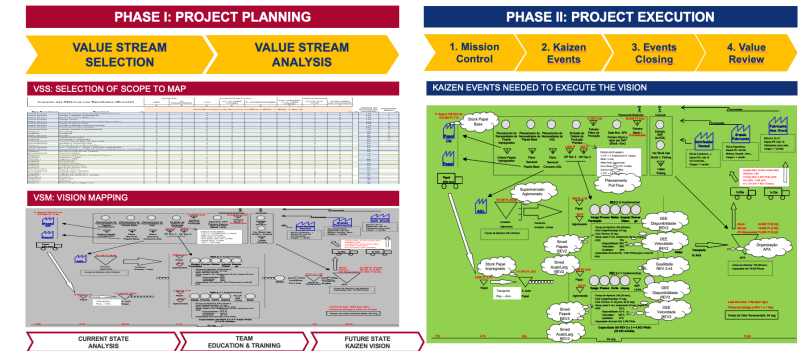


The Global Reference Book in Supply Chain Transformation



The Last Book about Strategic Assessment of Supply Chains

- Reading Materials
- Learning by Doing - Select & Start a Pilot Strategic E2E Value Stream Mapping
- For more information contact [ecoimbra@kaizen.com](mailto:ecoimbra@kaizen.com)



**WANT TO LEARN MORE: ORDER THIS BOOKS...**

# How can I Learn More

## Develop a Successful Pilot Project (to serve as a Beacon)

| CASE                      | COMPANY | PROBLEM  | SOLUTION  | RESULTS  |
|---------------------------|---------|--|---|--|
| Plant Design              |         | <ul style="list-style-type: none"> <li>Old line with a lot of material and operator movements</li> </ul>   | <ul style="list-style-type: none"> <li>New Layout and line design with 50% less space</li> <li>Mizusumashi Standard Work - 20% increase in Productivity</li> </ul>  | <ul style="list-style-type: none"> <li>Quantifiable benefits 3,300,000 Euros / year.</li> <li>Total investment: 1,125,000 Euros.</li> <li>R.O.I.: 4 months.</li> <li>State-of-the-art factory design</li> </ul>  |
| Flow Improvement          |         | <ul style="list-style-type: none"> <li>Line Design not Flexible &amp; Isolated Islands</li> <li>Low Frequency Logistics</li> <li>Central Push Planning System</li> </ul> | <ul style="list-style-type: none"> <li>One Piece Flow Shojinka Lines</li> <li>Creation of Flow in Internal Logistics</li> <li>Pull Planning System with Levelling</li> </ul>  | <ul style="list-style-type: none"> <li>-52% internal defects rate</li> <li>36% increase in Productivity</li> <li>-40% Total Inventory Coverage</li> </ul>  |
| Factory & Planning Design |         | <ul style="list-style-type: none"> <li>Functional Layout</li> <li>High lead-time</li> <li>Management difficulties</li> </ul>   | <ul style="list-style-type: none"> <li>Flow Layout</li> <li>Stock Reduction</li> <li>Standard Work</li> <li>SMED</li> </ul>   | <ul style="list-style-type: none"> <li>50% area reduction</li> <li>40% productivity increase</li> <li>89% lead-time reduction</li> <li>38% Setup Time Reduction</li> <li>8% Service-level improvement</li> </ul> |
| Factory & Planning Design |         | <ul style="list-style-type: none"> <li>Low Productivity</li> <li>Push Supply</li> <li>High model changeover time</li> </ul>  | <ul style="list-style-type: none"> <li>U shape line with frontal supply</li> <li>Pre-assemblies near point of use</li> <li>Pull Supply (With levelling box)</li> <li>Setup Time = 0</li> <li>Standard Work</li> </ul> | <ul style="list-style-type: none"> <li>26% productivity increase</li> <li>52% area reduction</li> <li>21% to 0% ergonomics' critical stations</li> </ul>   |

**OTHER REFERENCES**

- Get Support from Kaizen Institute (or another Sensei)
- Make a Performance Based Partnership with the Sensei
- For more information contact [ecoimbra@kaizen.com](mailto:ecoimbra@kaizen.com)

**Our Brand Promise**

**Authentic**

We introduced the KAIZEN™ methodology to the world in 1985

**Practical**

We make our customers experts in their Gemba

**Holistic**

Our methods touch everyone in the organisation working for the same goal and sharing the same KAIZEN™ Spirit

**Worldwide**

Our expertise, from helping the world's leading organisations, can be applied to any situation

**WE HELP LEADERS TO**

ACHIEVE **DREAMS OF PERFORMANCE IMPROVEMENT**

IMPLEMENT **CONTINUOUS IMPROVEMENT CULTURES**

**LEARNING BY DOING WITH A SUCCESSFUL PILOT PROJECT**

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