**Supply Chain Management (Resilient)**

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| **Resilient Supply Chain:** Manage risk. |
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| **Resilient Supply Chain** |
| A supply chain that mitigates risks through  preparing, responding, and recovering  from disruptive supply chain events or threats. |

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| *Supply Chain Industry:* | | | | | | |  |
|  |  | *Supply Chain Initiatives* | | | | |  |
|  |  | Lean  (Cost,Waste) | Green  (TBL,CSR) | Resilient  (Risk) | Responsive  (Agile) | Smart  (Technology) |  |
| *Key Supply Chains* | Commodity  Supply Chain |  |  |  |  |  |  |
| Global  Supply Chain |  |  |  |  |  |  |
| Service  Supply Chain |  |  |  |  |  |  |
| Reverse  Supply Chain |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | *Functions* | Inventory | Logistics | Relationships | Information | Strategy |  |
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***What is Resilience?***

(React, Respond, Recover, Return) from (Known-Known, Known-Unknown, Unknown-Unknown Risks)

***What is a Resilient Supply Chain?***

(Supply Chain Risk Events vs. Supply Chain Disruptions)

**Risk Management**

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| Known-Known Risks | Supply Chain Management |
| Known-Unknown Risks | Supply Chain Risk Management |
| Unknown-Unknown Risks | Supply Chain Resiliency Management |

**Supply Chain Management**

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| **Risks** | **Events** | **Consequences** | **Response** | **Resilience** |
| Known-Known | SRM  ERP  CRM | Quality  Continual  Improvement | SCOR Model | Low  Requirements |
| Known-Unknown | Market  Economy  Culture | Cost  Service Level | Risk Acceptance  Risk Transference  Risk Mitigation | Moderate  Requirements |
| Unknown-Unknown | Catastrophes  Uprisings  Subversion | Disruption  Devastation | Redundancy  Sensing & Responding  Adaptability | High  Requirements |

***How do you develop a Resilient Supply Chain?***

(Prepare, Respond, Improve)

**Resilient Supply Chain Development**

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| Prepare  (Before) | Respond  (During) | Improve  (After) |
| Prepare  (Characteristics of  Event Mgt &  Disruption Analysis) | Respond  (Characteristics of  Time: Quick Solutions  Functionality: Complete  Quality: Enhanced) | Improve  (Characteristics of  Internal Culture  &  External Competitiveness) |
| >Event Management: Risk Analysis  Known-Known Risks  Known-Unknown Risks  Unknown-Unknown Risks  >Disruption Analysis  -Supply Chain Structure  --Redundancy of Systems  --Flexibility of Policies/Processes  --Readiness of Human Resources  -Response Preparation  --Recognition of Events, Patterns, Trends  --Evaluation of Type, Level, Scope  --Mitigation of Probability, Consequences  --Development of Plan | -Communication & Information  -Critical Solution Points  -Identify Minimum Resources  -Delegate Authority to Champions  -Coordinate Solutions  -Transfer Solutions to Strategies |  |

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| Further Global Supply Chain Resilience Issues  -Security (IT, IP, People)  -Sustainability (Environmental & Sociopolitical)  -Political Coordination and Trust |

***References***

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| From SupplyChain 24/7.  Article based on authors from Michigan State University.  From SupplyChain24/7: <https://www.supplychain247.com/article/understanding_supply_chain_resilience> | |
| Time Series Display of Supply Chain Resilience Factors | Tree of Supply Chain Resilience |

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| From HBR: Harvard Business Review. By Paul Michelman  <https://hbr.org/2007/08/building-a-resilient-supply-ch> |
| Companies can develop resilience in three main ways: increasing **redundancy**, building **flexibility**, and changing the corporate **culture**. The first has limited utility; the others are essential. |

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| From pwc.  Link: <https://www.pwc.com/us/en/services/consulting/risk-regulatory/supply-chain-resilience.html>  A 2011 article presenting pwc approach to resiliency. | |
| Addressing risks:  1. Anticipate risks  2. Assess risks  3. Act against the risks  4. Designate a business continuity coordinator | Resilient environment:  -Make risk management ongoing  -Develop a partnership approach  -Understand the culture |

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| From Gartner. Link: <https://scholar.google.com/scholar?q=gartner%27s+article+on+resilient+supply+chains&hl=en&as_sdt=0&as_vis=1&oi=scholart>  Scholarly articles on Resilient Supply Chain Analysis. |

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| From SupplyChain24/7 all 24 papers on supply chain resilience:  <https://www.supplychain247.com/search/results/search&category=papers&keywords=Resilience/> |