



CRISIS MANAGEMENT IN THE TIMES OF GLOBAL MANUFACTURING SUPPLY CHAINS

This view point is motivated by the constant challenges that the global supply chains face due to natural disasters and other geopolitical issues. Over the past few years manufacturers have encountered various crisis situations which disrupted manufacturing operations and have caused heart burns to several major organizations.

This paper considers some of these scenarios, discusses briefly the ways that these situations could either be averted or better managed, and some of the lessons learnt from them. In addition, it discusses the global nature of today's supply chains and motivations behind the manufacturers' decision of outsourcing their operations.

This paper explores the various roles that Information Technology can play in facing sudden calamities.

Introduction

Crisis management has been the biggest bane for manufacturers in the recent past. Manufacturing industry suffered from one crisis after another in the last few years. Some of the examples are the earthquake in Japan, the floods in Thailand and the unrest in the Middle East resulting in fluctuations in the price of crude oil.

The crisis in Japan caused major supply constraints for the global automotive industry resulting in poor capacity utilization of plants, long waiting times, cancellation of orders etc. Similarly, during the crisis in Thailand, many manufacturers were forced to shut down production or cut back the output due to disruption in supply of critical parts. All this led to huge delays in order deliveries and substantial losses for manufacturers.

Earlier Scenario & the Rise of Global Supply Chains

In earlier times, major companies would employ hundreds of thousands of employees. All the manufacturing used to be at one place and this presented a single source of failure. This has changed over the years and today manufacturing supply chains are spread across the globe.

Gone are the days when all the production took place at one location. Today Gadgets, Automobiles etc. contain thousands of components procured from all over the world. Semiconductors may come from Korea, Metals from Asia/Africa, electronic components from China/Japan; the list is endless.

The reasons companies have an increasingly global supply chain are:

- **Supply chain efficiencies:** You can find every component required and the whole supply chain is available at the new hubs of manufacturing such as Asia, making it far more convenient and competitive.
- **Flexibility:** Changes in the product can be made swiftly; manufacturers can scale up and down quickly. This is a huge differentiator as time-to-market is a critical factor. Considering this, flexibility provides huge weight to the argument of outsourcing.
- **Scale of factories:** It is easier to set up huge factories in places like China due to congenial government policy environment. Huge investments in infrastructure have made these hubs more competitive.
- **Industrial skills:** There are far more skilled workers (engineers & technicians) trained for specific tasks. A huge & competent workforce makes it easier to lap up more work.
- **Workers are cheaper abroad:** Wages are far less in countries like China and workers are easily available.

At the same time global supply chains face a lot of issues especially in a crisis situation and all this can lead to long-term issues if timely action is not taken. The inherent nature of being interconnected has made these globally dispersed manufacturing operations susceptible to varied risks. This is why there is a need for better crisis management systems, as it is otherwise difficult:

- a) To gauge the impact of crisis
- b) To come up with appropriate strategy to counter the situation.

Crisis Scenarios

Following crisis scenarios can be faced by manufacturers:

- **Natural crisis:** These are acts of nature such as Japan earthquake, Thailand floods etc.
- **Manmade crisis:** These are caused by human operations, e.g. Oil spills, Bhopal gas tragedy, Chernobyl disaster etc.
- **Discord Crisis:** Strikes, boycotts e.g. Maruti recently faced production issues due to strikes at their plant. These can cause serious production issues and delays in order deliveries as shown by the Maruti case.

Let's have a quick look at some of the major crisis in the recent past; this will help us gather a perspective about what is to be expected in similar situations:

Japan Crisis: In 2011, Japan was hit by a massive earthquake leading to very large tsunami waves that caused large scale destruction and a meltdown in the Fukushima nuclear power plant. Manufacturing plants were forced to shut down due to the crisis affecting production of automotive giants and other industries as well, due to shortage of essential components. It was one of the costliest disasters in the world.

Thailand Floods: Thailand was hit by severe floods in the monsoon season of 2011. Production plants of manufacturers were hit. Tremors of this crisis were felt across the globe as it is one of the manufacturing hubs for automotive giants e.g. Honda lost a substantial chunk of its revenues due to production delays.

In a crisis situation, timely & focused information is invaluable for a manufacturer.

Crisis Management

Crisis management definition: It is the process by which an entity manages a crisis situation, which can severely harm all the stakeholders involved. Crisis management aims to bring this damage to a minimum.

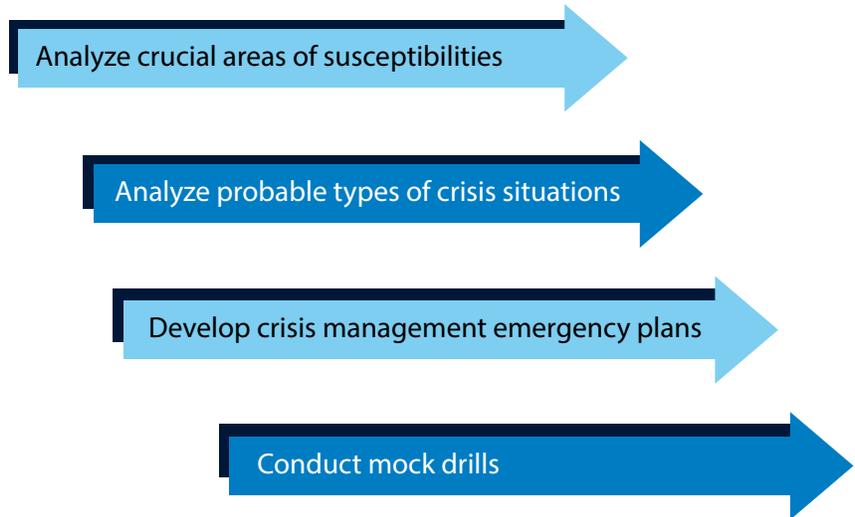


Three stages of a Crisis situation are

A. Before Crisis

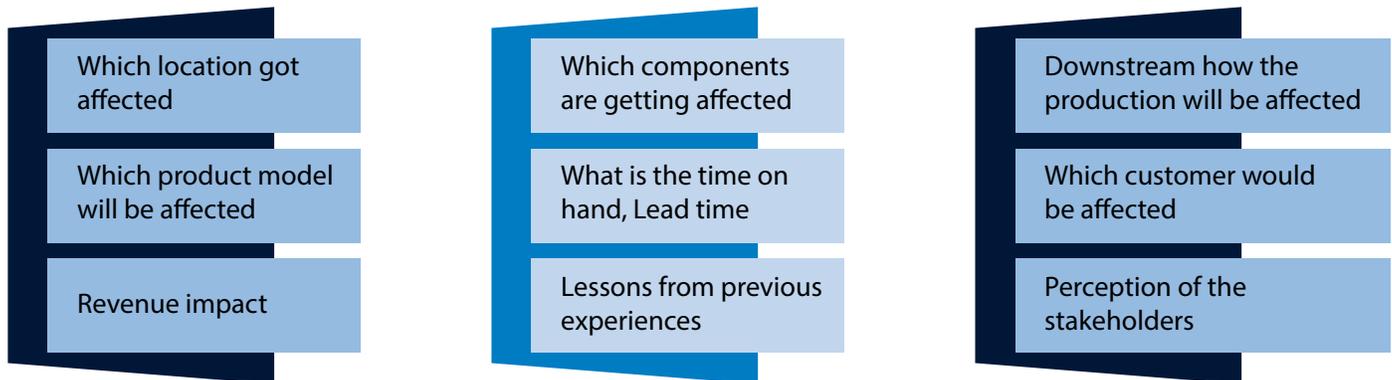
Preemptive strategies for Crisis management:

- Analyze crucial areas of susceptibilities: Look for all the vulnerable areas across the locations.
- Analyze probable types of crisis situations: Study all possible crisis situations.
- Develop crisis management emergency plans: Detailed and easily comprehensible contingency plans have to be in place.
- Conduct mock drills: Condition employees for crisis response with the help of such exercises.



B. During Crisis

Ingredients of an effective response IT System:



Following Information is required by a manufacturer in a crisis situation and should be provided by the IT system deployed:

- **Which location got affected:**
This is vital information for the top management to start assessing the situation. A list showing the plants affected by the crisis can help the management to concentrate their efforts towards these locations.
- **Which components are getting affected:**
This information gives an idea about the components which will be in shortage. Such a list will prompt the management to look at alternative locations for these components.
- **Downstream how the production will be affected:**
This will inform about the plants & facilities which will be affected due to shortage of components. If Plant A (hit by the crisis) supplies components to Plant B & C for their operations. We need to know & assess such dependencies as soon as possible.
- **Which product model will be affected:**
This information lets the manufacturer know about the product models and product lines that will be affected. What is the time on hand - Lead time: This information will let the manufacturer know about the expected delays in order deliveries. It is quite crucial, as the customers and partners have to be informed about the delays swiftly.
- **Which customer would be affected:**
This information is quite important as affected customers have to be identified & informed. Communication is quite crucial in a crisis situation. Manufacturers should communicate honestly and promptly with all the affected partners.
- **Revenue impact:**
Losses occur due to disruption in manufacturing and this impact has to be accounted. This information will help manufacturers to plan in a better way for damages caused by delays and disruptions.
- **Lessons from previous experiences:**
There has to be a repository containing information about actions taken during similar crisis and information about different contingency strategies. This will help managers to take quick and effective action. Crisis is an opportunity to learn and knowledge gathered from such experiences should be carefully preserved.
- **Perception of the stakeholders:**
Management has to gauge the perception of all the stakeholders. Perception management can make or break the brand image during a crisis. Customers, suppliers, employees, public, concerned authorities etc. all should be kept up-to-date about the latest happenings. Honest and prompt communication in crisis situations helps in projecting a sincere image. Priority should be on building trust.

Here the Information Technology (IT) comes into the picture. IT service providers can help manufacturers to come up with better systems and processes to gather all this information in a form that is easily comprehensible to the top management and aids them in making quick decisions about corrective actions needed. Every crisis has an element of surprise but having all this useful information in a readily comprehensible form will enable manufacturers to effectively counter such situations.

Effective response:

With this invaluable information, a manufacturer can:

- Be better prepared for crisis situations
- Assess the impact of the crisis effectively
- Adopt a strategy to mitigate the impact
- Arrange for the same components from a different location which is not affected by the crisis, thereby keeping the production smooth
- Inform all the stakeholders before-hand about the expected delays. Quick & timely Crisis communication is quite necessary for long-term partnerships

C. After Crisis

- **Analyze what went wrong:** Study the causes of the crisis and vulnerabilities that led to such a scenario.
- **Document the lessons learnt:** Document in detail the lessons learnt and improve upon the existing strategies.
- **Formulate strategies based upon the findings:** Create a readily accessible repository of strategies to be used in future crisis situations. This will help in quick decision-making in the future.



Conclusion

Response to a global supply chain crisis requires specific organizational tools and traditional methodologies prove ineffective in handling these peculiarities. If organizations embrace crisis situations as an opportunity to learn and apply new strategies with an open mind, they can emerge from such situations with a renewed & stronger brand image.

Lessons learnt from the recent natural calamities include the realization that it could take months to assess the full impact of a global manufacturing supply chain. If an ill-prepared manufacturer gauges the probable impact too late, it could result in the loss of critical time eventually resulting in significant revenue & reputation risks.

Crisis management systems are quite essential to cope with new challenges and progress in Information Technology has enabled manufacturers to effectively manage it. However, leveraging the positives of an effective crisis management solution is the prerogative of the manufacturers worldwide.



About the Authors



Payal Patel,

Senior Technology Architect, Infosys

Payal Patel is a Senior Technology Architect with Infosys. She has over nine years of experience in mobile-related technologies and her interests and expertise include Mobile Management technologies.



Jagdish Vasishtha (Jags)

AVP and Head – Enterprise Mobility Solutions, Infosys

Jagdish Vasishtha (Jags) is responsible for all intellectual assets business of the unit. Overall he has 20+ years of experience in IT and Telecommunications.

For more information, contact askus@infosys.com



© 2018 Infosys Limited, Bengaluru, India. All Rights Reserved. Infosys believes the information in this document is accurate as of its publication date; such information is subject to change without notice. Infosys acknowledges the proprietary rights of other companies to the trademarks, product names and such other intellectual property rights mentioned in this document. Except as expressly permitted, neither this documentation nor any part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, printing, photocopying, recording or otherwise, without the prior permission of Infosys Limited and/ or any named intellectual property rights holders under this document.