



**Asia-Pacific
Economic Cooperation**

2014/TPTWG/WKSP/017

Supply Chain Crisis Management

Submitted by: Nissan Motor Co., Ltd



**Workshop on Improving Global Supply Chain
Resilience: Advancing the Seven APEC
Principles in Your Organization
Christchurch, New Zealand
26-28 March 2014**



Supply Chain Crisis Management



Mar 26th, 2014
Nissan Motor Co., Ltd

www.nissan-global.com

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<Agenda>

1. Company Profile
2. Lesson Learned from JPN EQ / THI Flood
3. Monozukuri Recovery guide
4. Countermeasure & Action



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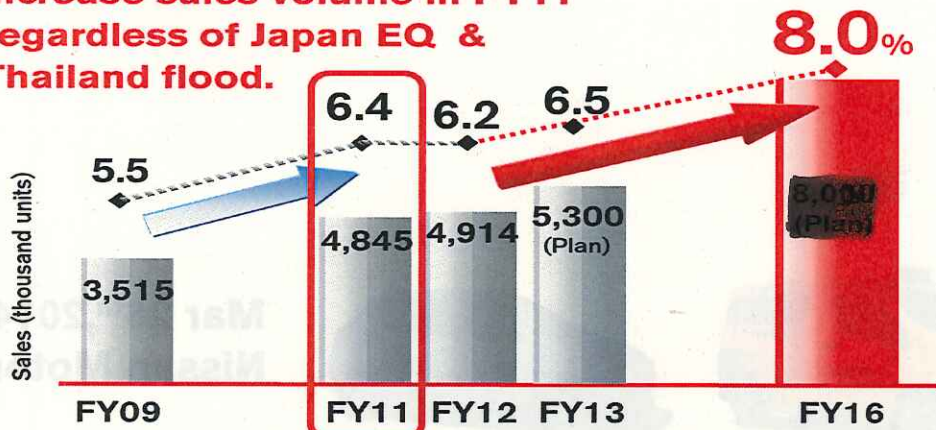
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1. Company Profile (Production site & sales in global basis)



> Increase sales volume in FY11 regardless of Japan EQ & Thailand flood.

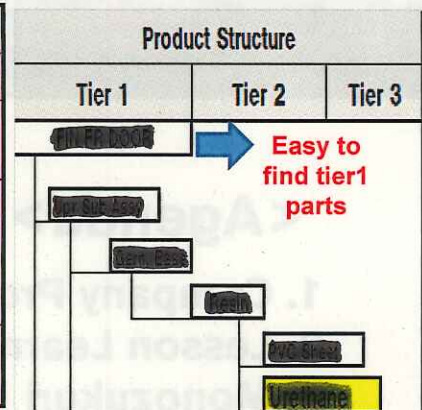


2. Lesson Learned from JPN EQ/THI Flood

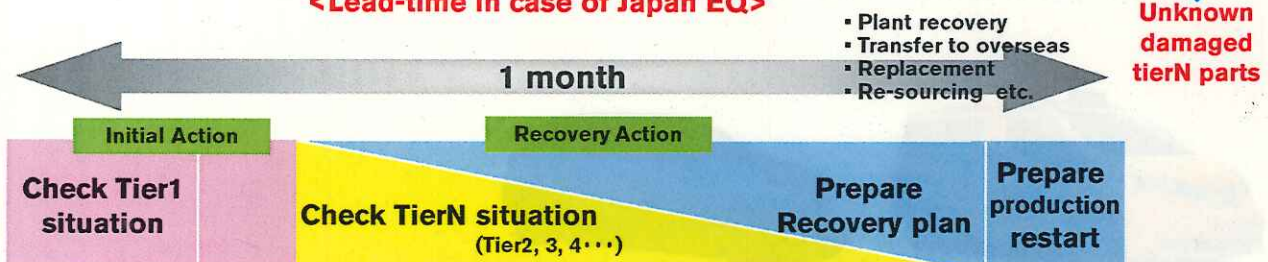
<Summary of activity review>

Key Points	Review	
	Good point 😊	To be improved 😞
Recovery Lead-time	-	<ul style="list-style-type: none"> • Delay found damaged TierN • No Recovery BCP w Supplier
Recovery Organization	<ul style="list-style-type: none"> • Minimized production loss by quick decision (simulation training just before one week) 	<ul style="list-style-type: none"> • Not organized supplier support team in advance
Back-up	<ul style="list-style-type: none"> • Parts Commonize with other regions 	<ul style="list-style-type: none"> • For only one technology/ single plant in tierN,

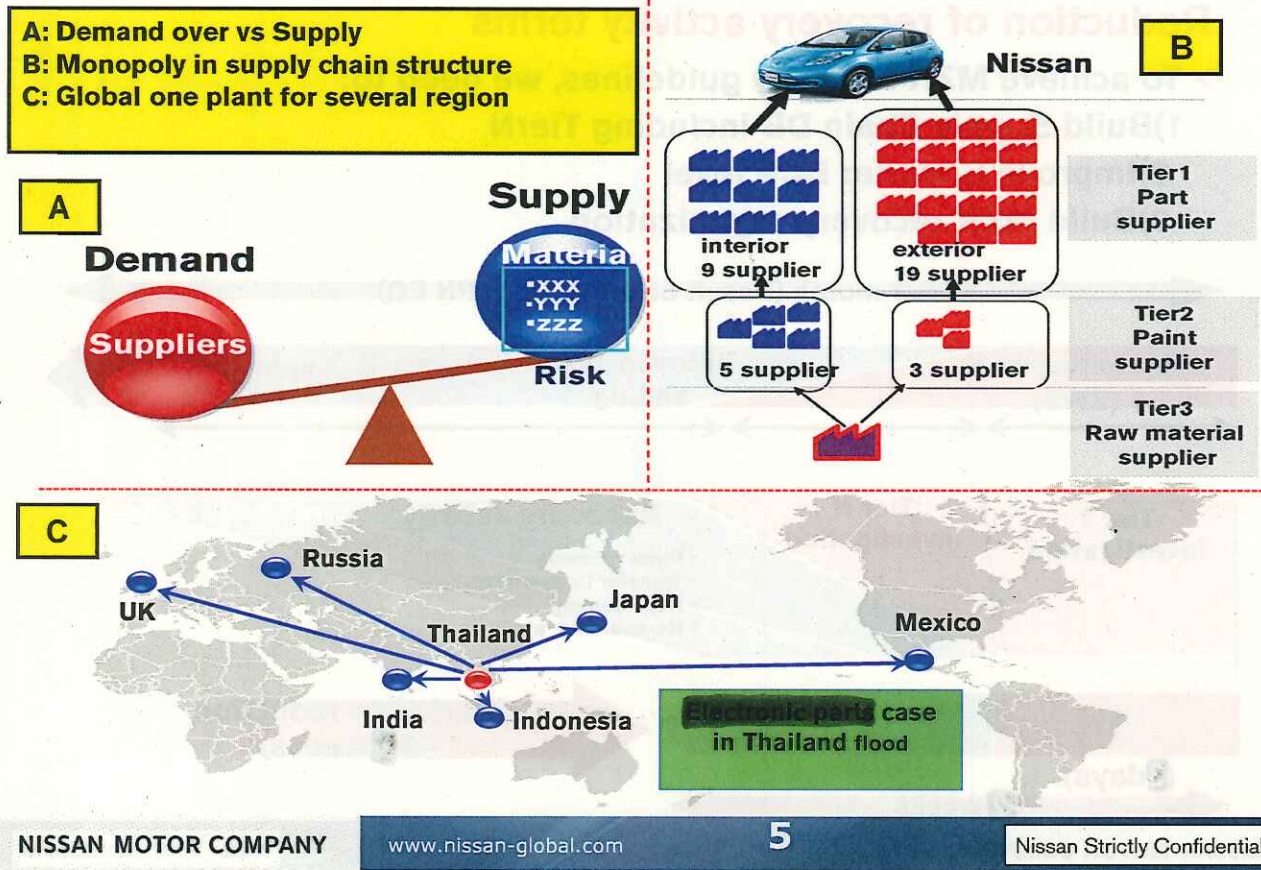
<Supply chain tree>



<Lead-time in case of Japan EQ>



2. Lesson Learned : Risk for Demand Over/Monopoly/Single



3. Nissan Monozukuri Recovery Guide

<Recovery Guide>

To restart production at in-house plant **within 2 weeks.**

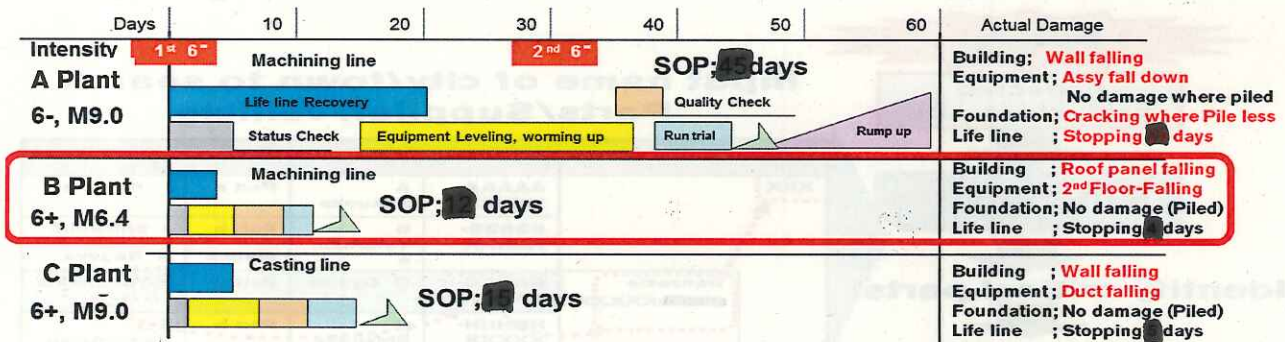
Considering stock between regions (JPN: 2 weeks, PCC: 2 weeks),
Supplier needs to restart delivery within 4 weeks from the disaster.

→ New vehicle/new parts : set condition for supplier selection

Current parts : check back-up plan ~~for Japan and Thailand~~

✓ To limit damage inside of the affected region.

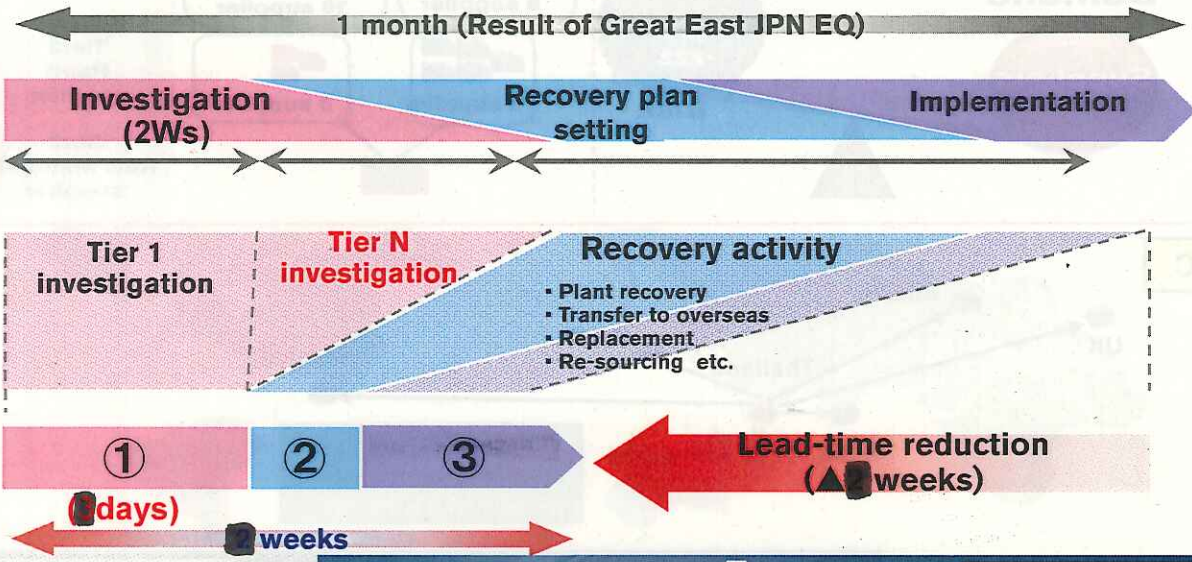
<Background for 2 Ws : BM---B Plant>



4.Countermeasure & Action

Reduction of recovery activity terms

- To achieve MZK recovery guidelines, we need to:
 - 1)Build Supply Chain DB including TierN
 - 2)Improve Supplier BCP level
 - 3)Build MZK recovery organization

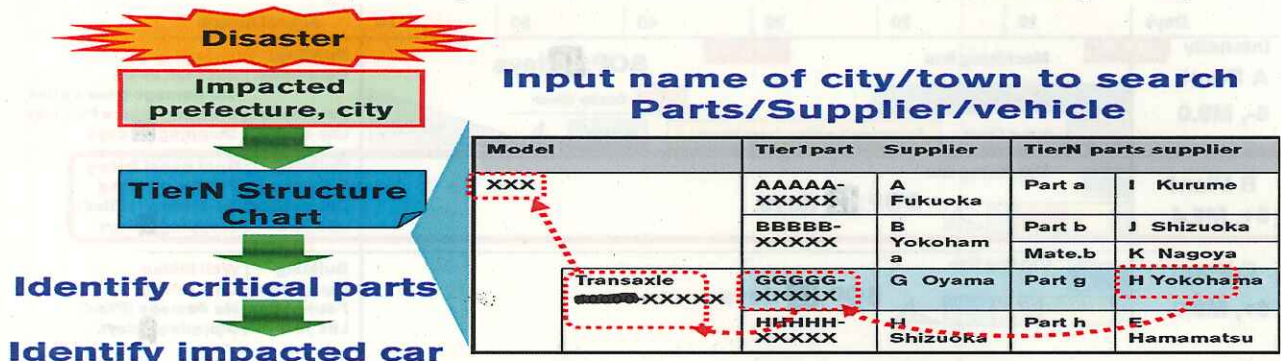


4-1):Supply-Chain DB

Specify risk supplier in global supplier's address list beforehand

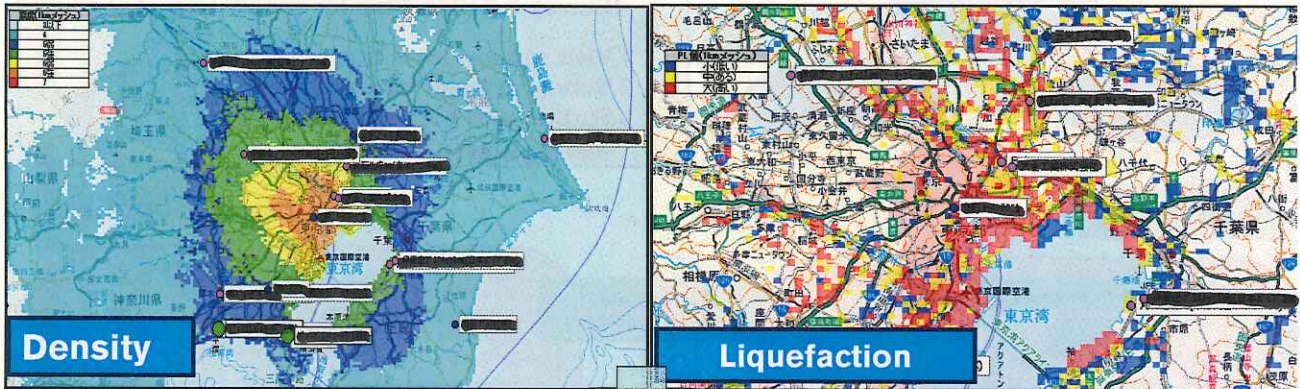
Supplier Name	Supplier address (HQ)				Natural Disaster Risk				
	Country	Prefecture /state /province	CITY	address1	Earthquake (VIII to X Modified Mercalli)	Wind 40m/s or greater	Flood Hit by disaster in the past	Tsunami Hit by disaster in the past	Distance from nuclear power plant Less than 30Km
A	TURKEY	IZMIR	IZMIR	100001 SIVAK	*				
B	TURKEY	BURSA	BURSA	BURSA		*			
C	FRANCE	FRANCE	FRANCE	FRANCE			*		
D	FRANCE	FRANCE	FRANCE	FRANCE				*	
E	GERMANY	GERMANY	GERMANY	GERMANY					*

Possible to check supplier & parts/vehicles from information of damaged city



4-2) Supplier BCP-> Establish Risk simulation (Before&After disaster)

- Density/Liquefaction/Water&Elec recovery term->match with plant address
- Data provision to supplier->plant reinforcement, easy impact survey

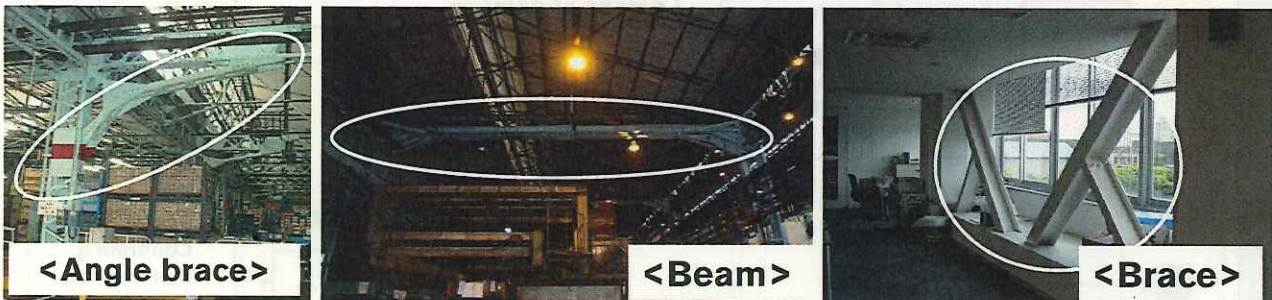


Supplier Name	Plant Information Address	Damage of building								
		Damage by earthquake vibration			Damage by liquefaction			Damage by tidal wave		
		Intensity	Ratio of collapse	Damage of building	Risk	Ratio of collapse	Damage of building	Hight of wave (m)	Ratio of collapse	Damage of building
A	[Redacted]	intensity 0	0.0%	1	No risk	0.00%	1	0	0.00%	1
B	[Redacted]	intensity 6 upper	42.7%	4	No risk	0.00%	1	0	0.00%	1
C	[Redacted]	intensity 5 lower	0.0%	1	No risk	0.00%	1	0	0.00%	1
D	[Redacted]	intensity 0	0.0%	1	No risk	0.00%	1	0	0.00%	1
E	[Redacted]	intensity 6 upper	57.3%	4	No risk	0.00%	1	0	0.00%	1
F	[Redacted]	intensity 4	0.0%	1	No risk	0.00%	1	0	0.00%	1
G	[Redacted]	intensity 4	0.0%	1	No risk	0.00%	1	0	0.00%	1
H	[Redacted]	intensity 4	0.0%	1	No risk	0.00%	1	0	0.00%	1
I	[Redacted]	intensity 6 upper	28.9%	3	No risk	0.00%	1	0	0.00%	1

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4-2)Supplier BCP ->Improve Supplier BCP level

- (1)Has issued Japan Auto Parts Industries Association made BCP Guideline to member's supplier and all Nissan's tier1 supplier.
- (2)Visualization for best practice for plant reinforcement



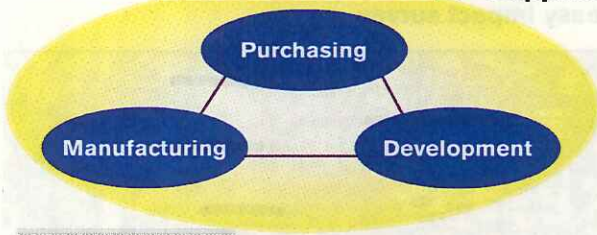
- (3)Build BCP evaluation sheet which can use both self-check & Nissan's audit

Classification	Diagnosis	Detail of action	Description	Result	Score
Resources (people)	Do you instruct employees to decide the way to confirm safety of his/her family in a time of disaster ?	A. Employee's family is also registered to the safety confirmation system B. Confirmed shelters C. No	■ Safety of family may be confirmed by : contact information of the shelter, 171 disaster message service, registration to safety confirmation system, LINE, twitter, Facebook, SNS (Social Networking Service)	A	3
Resources (goods)	Have you taken counter measures to prevent ceiling panel/window glass from falling ?	A. Have standard for ceiling, window and piping. Countermeasures are taken. B. Countermeasures are in progress. C. No.	■ Ceiling panel, piping and duct fell at the time of Shizuoka EQ. at the time of Great East Japan EQ, large size air-conditioning, duct, cable, wall fell and killed people.	C	0
Structure /Preparation for BCM	Have you considered backup of main equipment ?	A. Have clear backup plan by equipment: e.g. in-house or outsourcing to supplier, etc. B. Confirmed that back up is possible by in-C. No.	■ Ensure backup assuming that important equipment, facilities become unusable for prolonged period.	A	3

4-3) Build MZK Recovery organization

Monozukuri Function

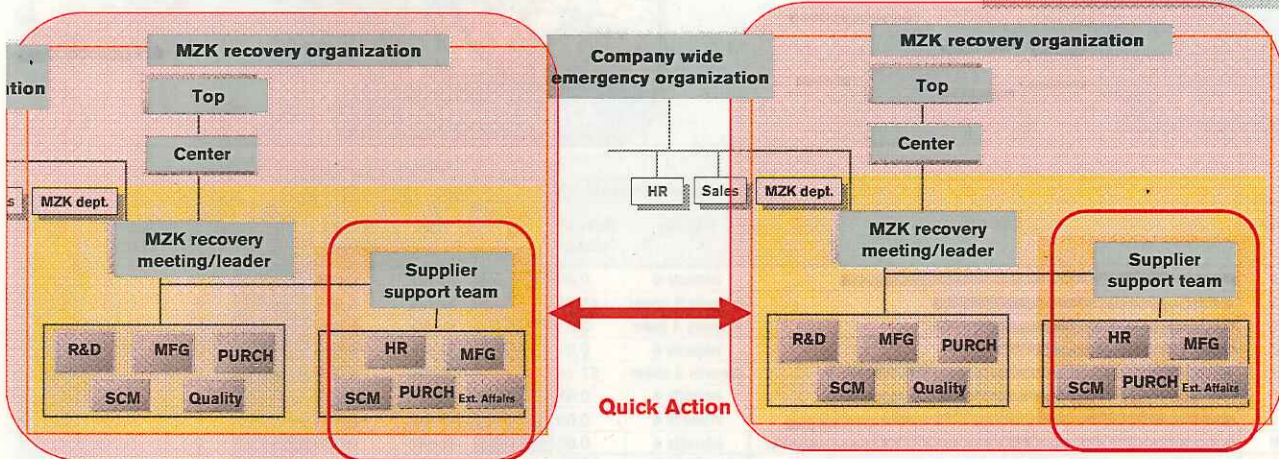
> Supplier Support team (mirror org w Supplier)



<Survey & Action Step for supplier damage>
 1. Visit support team to supplier
 2. Survey damage level & content
 3. Further visit each specialist who has registered beforehand

Nissan

Tier 1 Supplier



Initial Action Flow Nissan & Supplier BCP

(Case: Earthquake occurs in the morning)

