

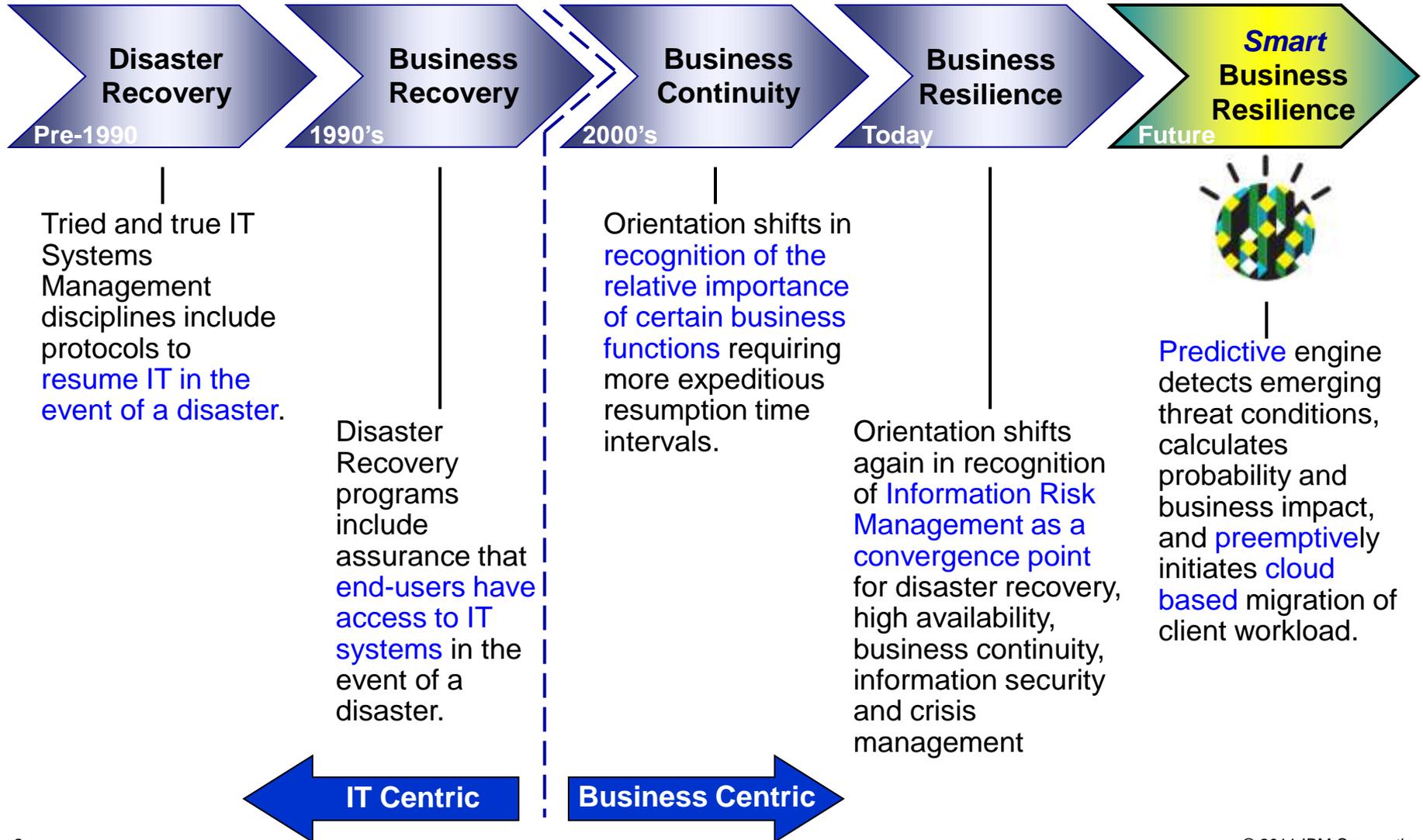


Lessons Learned From Regional Disasters





Evolution of the “resilience” industry started with reactive IT-centric disaster recovery and has transitioned to proactive business-centric business resilience.





The continuous flow of information is inseparable from the operational performance of the firm.

The Facts

- Information technology is *often* at the epicenter of how a firm interacts with its clients
- Information technology is *always* a lever to produce highly efficient supply chains, operations and workflows
- In combination, these two dynamics generate an explosive growth of managed data

The Implications

- Business resilience and information risk management are *commonly on the agenda of senior management*
- *Firms must assess: Are we in compliance? Are we reliable? Can we be trusted?*
- *Firms must decide how resilient they wish to be – in the context of the availability, security and recoverability of their business operations*
- *Firms must evaluate the extent to which competitive advantage or disadvantage is influenced by their chosen resilience standing*

The Opportunity

- Information Risk Management is often an element of a firm's corporate risk management profile and presents IBM with a bridge from the IT leaders to the business leaders
- IBM's talent, tools, techniques, methods and infrastructure are engineered to help clients accelerate their time to value - - leveraging IBM's decades of experience in this specific discipline



As budgets shrink and service level requirements increase, our business becomes even more vulnerable to data loss.

The impact of lost data or unplanned downtime can be catastrophic, leading to lost revenue, reputation and competitive position.

Finances

- Lost deals
- Disruption of cash flow
- Lost discounts
- Missed payments
- Drop in stock price

Loss of reputation

- Company reputation
- Damaged relationships with:
 - Customers
 - Suppliers
 - Partners
 - Lenders
 - Investors

Revenue

- Direct revenue losses
- Loss of future revenues
- Losses due to invoices that cannot be completed
- Losses due to investments not made

Miscellaneous costs

- Temporary staff needed
- Travel expenses incurred
- Equipment rental costs

Productivity

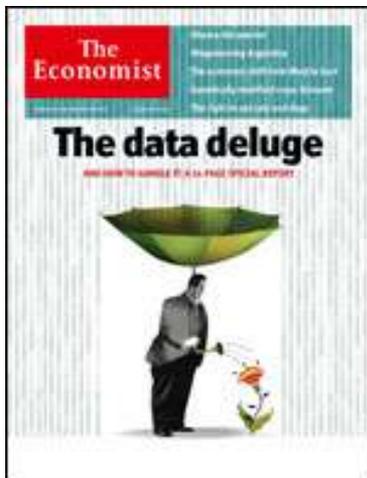
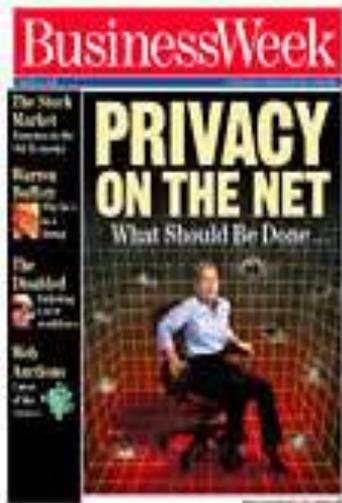
- Employees who cannot perform their jobs
- Missed deadlines

Regulatory

- Inability to meet compliance requirements

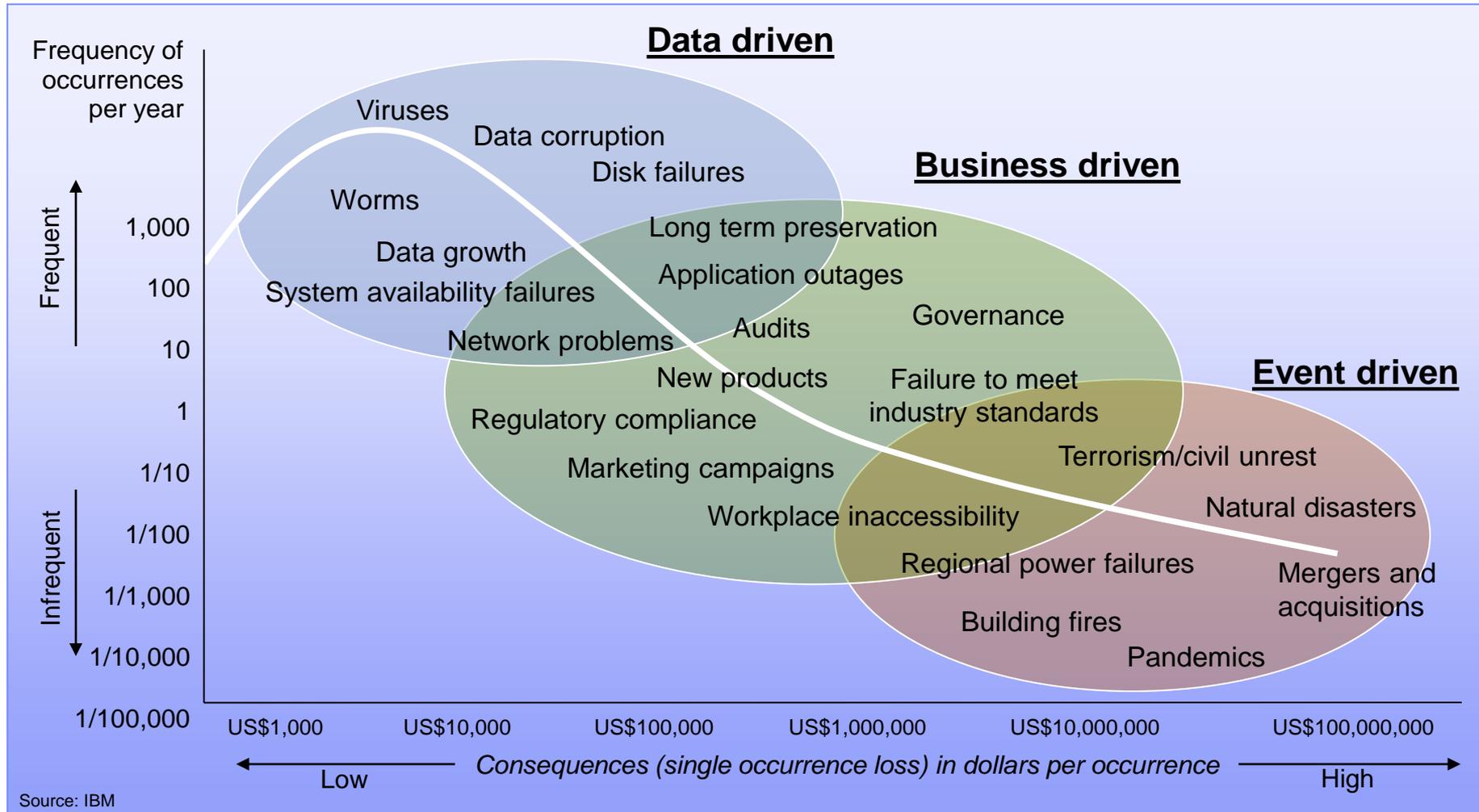


Headline events often mobilize our clients to pause and reflect on their current IT resilience standing. . .





We see both risks and opportunities affecting clients' business resilience needs





But there are many other events that have caused business disruptions/outages that don't make headlines, but can be just as costly.

- | | | | |
|---------------------------|------------------------|------------------------------|------------------------------|
| A/C Failure | Evacuation | Microwave Fade | Snow Storm |
| Acid Leak | Explosion | Network Failure | Sprinkler Discharge |
| Asbestos | Fire | Pandemic | Static Electricity |
| Bomb Threat | Flood | PCB Contamination | Strike Action |
| Bomb Blast | Fraud | Plane Crash | Swimming Pool Leak |
| Brown Out | Frozen Pipes | Power Grid Outage | S/W Error |
| Burst Pipe | Hacker | Power Outage | S/W Ransom |
| Cable Cut | Hail Storm | Power Spike | Terrorism |
| Chemical Spill | Halon Discharge | Power Surge | Theft |
| CO Fire | Human Error | Programmer Error | Toilet Overflow |
| Coffee Machine | Humidity | Raw Sewage | Tornado |
| Condensation | Hurricane | Relocation Delay | Train Derailment |
| Construction | HVAC Failure | Rodents | Transformer Fire |
| Coolant Leak | H/W Error | Roof Cave In | UPS Failure |
| Cooling Tower Leak | Ice Storm | Sabotage | Vandalism |
| Corrupted Data | Insects | Shotgun Blast | Vehicle Crash |
| Diesel Generator | Lightning | Shredded Data | Virus |
| Earthquake | Logic Bomb | Sick building | Water (Various) |
| Electrical Short | Lost Data | Smoke Damage | Wind Storm |
| Epidemic | Low Voltage | Smoke from Restaurant | Volcano / Volcano Ash |

Source: Contingency Planning Research, Inc. and IBM



Agenda

- Industry View on Different Risks
- Recent Disaster Events
 - Australia
 - Japan
- Lessons Learned From Regional Events
- How IBM Can Help

2011 Brisbane Floods





What was the impact

- Brisbane is Australia's third largest city of over 2 million people
- The Customer Business District is built inside a bend in the Brisbane river
- Brisbane previously flooded in 1974 and the Wivenhoe dam was then built to avoid future flooding. The Dam construction was designed to eliminate future flooding.
- Massive rain falls filled Wivenhoe to 190% of capacity and authorities had no choice but to fully open the dam. Combined with run off from rains, flooding was unavoidable.
- Flooded area in Queensland is greater than France & Germany combined
- Over \$7B in damages



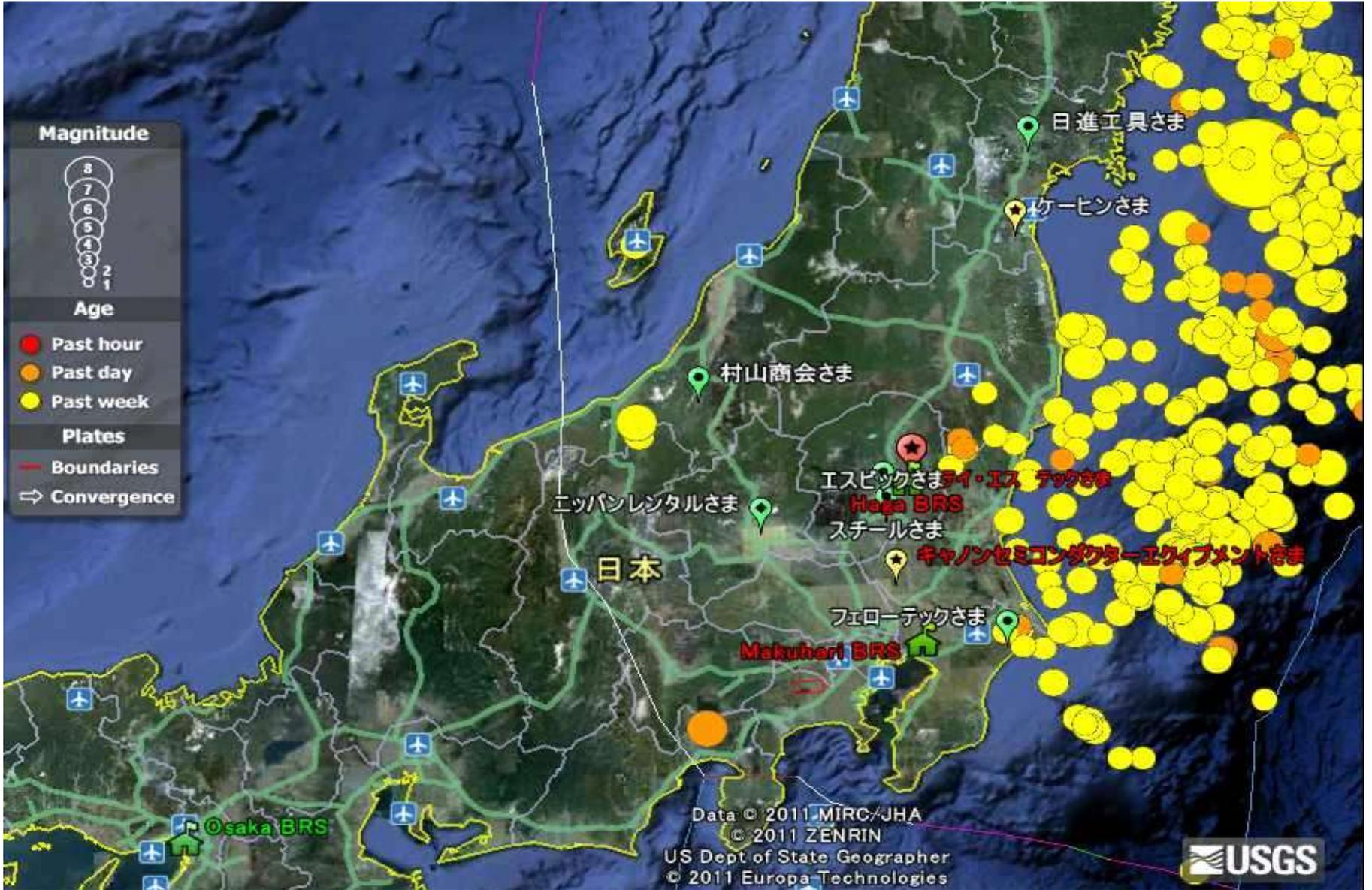


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March 11, 2011 – Japan Earthquake and Tsunami

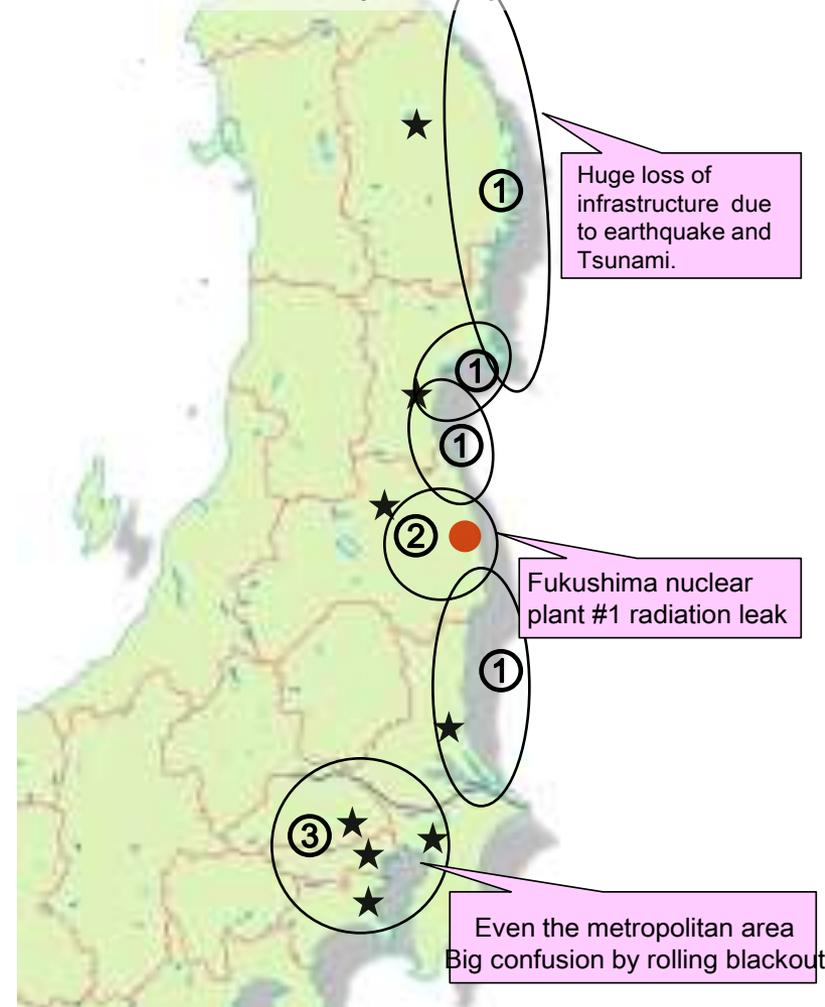




Outline of East Japan huge earthquake

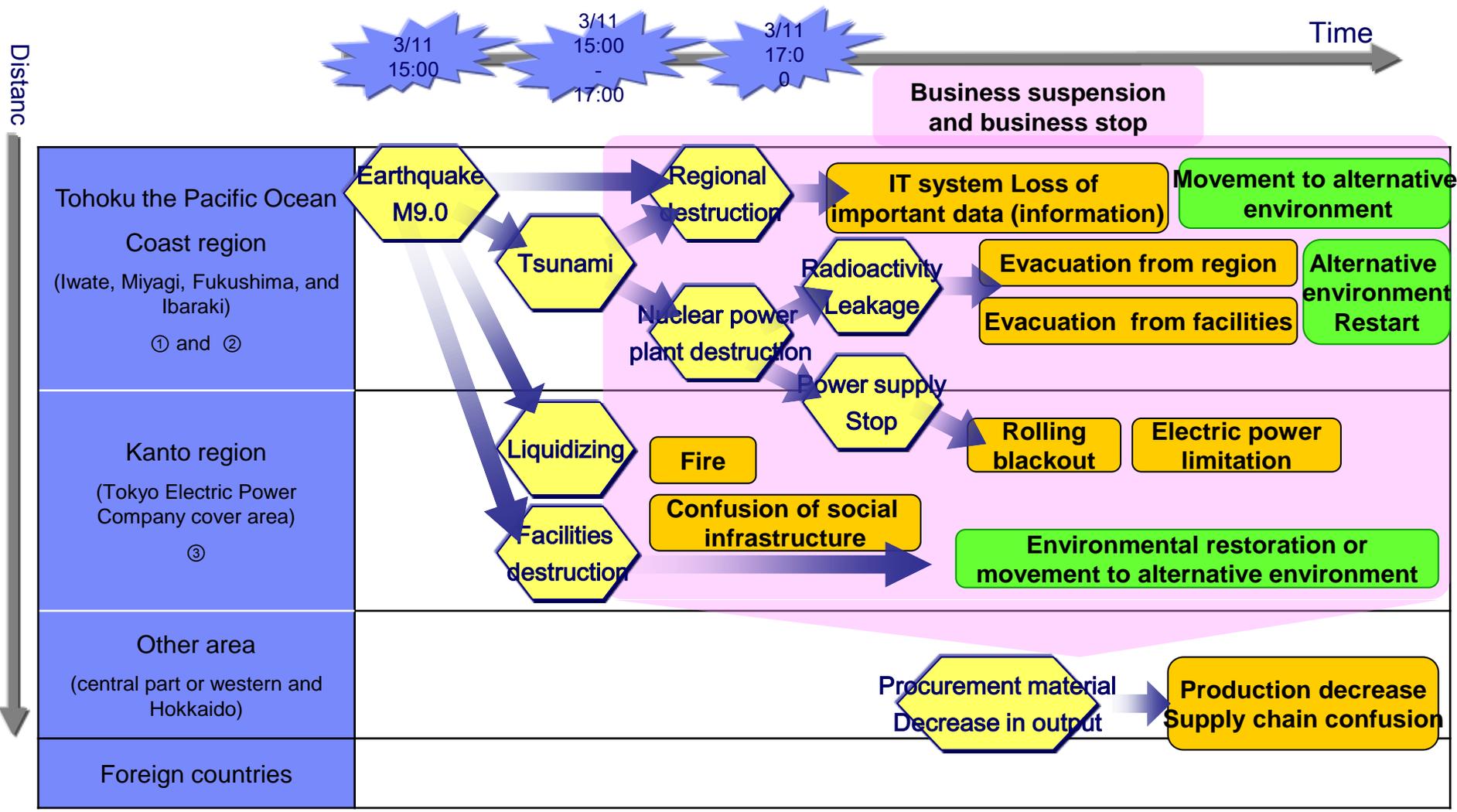
- 3/11 14:46 The earthquake of magnitude 9.0 occurs at 24km in Miyagi Prefecture offing 130km depth.
- Tsunami exceeded 10m as a result of the earthquake had a big influence on Iwate Prefecture, Miyagi Prefecture, Fukushima Prefecture, and Ibaraki Prefecture. 13,392 dead, 15,133 missing, and 150,000 or more victim as of April 14.
- The Fukushima nuclear plant lost cooling function due to Tsunami, then generated core meltdown, and the government declares INES level 7.
- A wide-ranging power failure occurs and it influences the society's infrastructure and the information technology operation greatly.
- Since 3/11, 400 times or more aftershock with magnitude 5.0 or more occurred.
- Damage is assumed to become 100 trillion yen scale according to the report of CNN.

- ①:Affected area by earthquake and Tsunami
- ②:Affected area by nuclear plant accident
- ③:Affected area by earthquake





Chain of risks, large disaster area, and long term influence influences caused by the biggest earthquake.





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Hindsight is 20/20—where traditional IT disaster plans often fall short

Most disaster plans fail to account for:

- Disasters create other disasters ... domino effect
 - Japan: earthquake => tsunami => nuclear plant damage => power problems => supply chain problems
- Human issues
 - Will people be available? How about their families? Financial assistance?
- Communications issues
 - Communicating with, supporting and mobilizing employees, customers and suppliers, the press and the public at large
- Community issues
 - Fulfilling responsibilities to host communities
- Infrastructure issues
 - Anticipating how roads, travel and power supplies might be affected
 - Vulnerability of sites
- Business issues
 - Keeping business processes running
 - Managing insurance claims
- Disaster plan currency
 - Keeping plans up to date and well tested
 - Availability of data and hardware

To learn more about lessons learned from regional disasters, listen to the following webinar:
http://www-935.ibm.com/services/us/bcrs/html/web-seminar_hurricane-lessons-learned.html?&me=W&re=webseminars



Key areas to consider when creating or updating your business continuity plans.

people

communications

travel / transportation

plan currency

insurance

infrastructure

power

hardware replacement

data availability



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Problems encountered...

- **Availability of employee**
- **Conflicts with families and spouse conflicts**
- **How people respond (i.e. emotionally) to different disaster scenarios**
- **Who and where are decision makers during disaster**
- **Employees safety**
- **Emergency loans / funds for employees**

Actions to Consider...

- **Consider employees prior, during and after event**
 - Roles during and after disaster, safety, trauma, transportation, housing and funding
 - Consider addressing employees' families in BCP
- **Include IT, lines of business, HR and auditors in BCP**
- **Consider having alternate teams available**



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Problems encountered...

- No centralized number for employees/customers/partners
- Cell phones didn't work
- No power for cordless phones
- Limited access to internet for email
- No or limited plans to address media
- No or limited communications with public sector agencies
- Inability to move telco lines quickly

Actions to consider...

- Create centralized number, email address and/or web site
- Consider alternate communication tools: satellite phones, cell phones outside of affected region, common email address, wireless cards for laptops, text messaging
- Create an external communications plan



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Problems encountered...

- People did not follow local agencies directions
- Limited or no availability of fuel
- Limited or no air transportation
- Limited or no availability of rental vehicles
- Heavy traffic, long delays
- Vehicles disabled due to severe weather / temperatures

Actions to Consider...

- Work with local government agencies
- Understand and follow evacuations guidelines
- Anticipate, move key employees (and families) and data out of the affected area
- Consider availability of hotel and car rental
- Have extra supplies for travel for multiple conditions (i.e. water, blankets, jackets, gloves, candles, mobile phone, etc.)



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Problems Encountered...

- **Outdated, not available or non-existent plan**
- **Plans did not address multiple disaster scenarios**
- **Plans did not address key supply chains**
- **Plans were not linked to change management**
- **No Crisis Management Team**

Actions to Consider...

- **Keep plan current**
- **Integrate plan with IT and business change management**
- **Keep DR vendor contract current**
- **Test plan annually or more often**
- **Create crisis team to manage crisis activities**
- **Identify key supply chains, validate that their BCP will support you if they have a disaster, ask to participate in their exercises, have them participate in your exercises, include them in your BCP.**



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Problems Encountered...

- **Unknown, poor and/or inadequate coverage**
- **Did not know what disaster scenarios were covered**
- **No inventory or documentation of activities for claims adjuster**

Actions to Consider...

- **Understand your risks and ensure adequate insurance coverage**
- **Understand and test different disaster scenarios**
- **Keep an inventory of all assets**
- **Document all activities throughout the disaster event**
- **Obtain independent review of insurance coverage**



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Problems Encountered...

- **Location in high risk areas**
- **Temperature, mold, contaminants, etc.**
- **Structural damage**
- **Storage / location of critical assets (i.e., Basement)**
- **Mobile solutions not allowed or could not make it to desired area**

Actions to Consider...

- **Understand risk and vulnerabilities of facility location(s)**
- **Consider security and accessibility of facility**
- **Conduct a vulnerability assessment of facility**
- **Have vendor contacts ahead of time to fix or clean facility if required**



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Problems Encountered...

- **No power, reduction or fluctuating time estimates for power restoration**
- **No/limited redundant power supplies (i.e diesel generators)**
- **Poor location of generators / UPS (basement, roof)**
- **No or inadequate supply of fuel**

Actions to Consider...

- **Ensure redundant power supplies are tested**
- **Consider location of redundant power supplies**
- **Have contacts for acquisition of generators**
- **Ensure adequate fuel supply**



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Problems Encountered...

- **Hardware was damaged**
- **No power for equipment to repair**
- **No plans to relocate equipment to alternate location**
- **No plans to dispose of damaged equipment**
- **Incomplete coverage on service contracts**

Actions to Consider...

- **Consider a contract for equipment acquisition**
- **Have vendor(s) lined up for equipment relocation**
- **Understand methods and procedures for removing and moving equipment**
- **Understand methods and procedures for disposing of damaged equipment.**



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Problems Encountered...

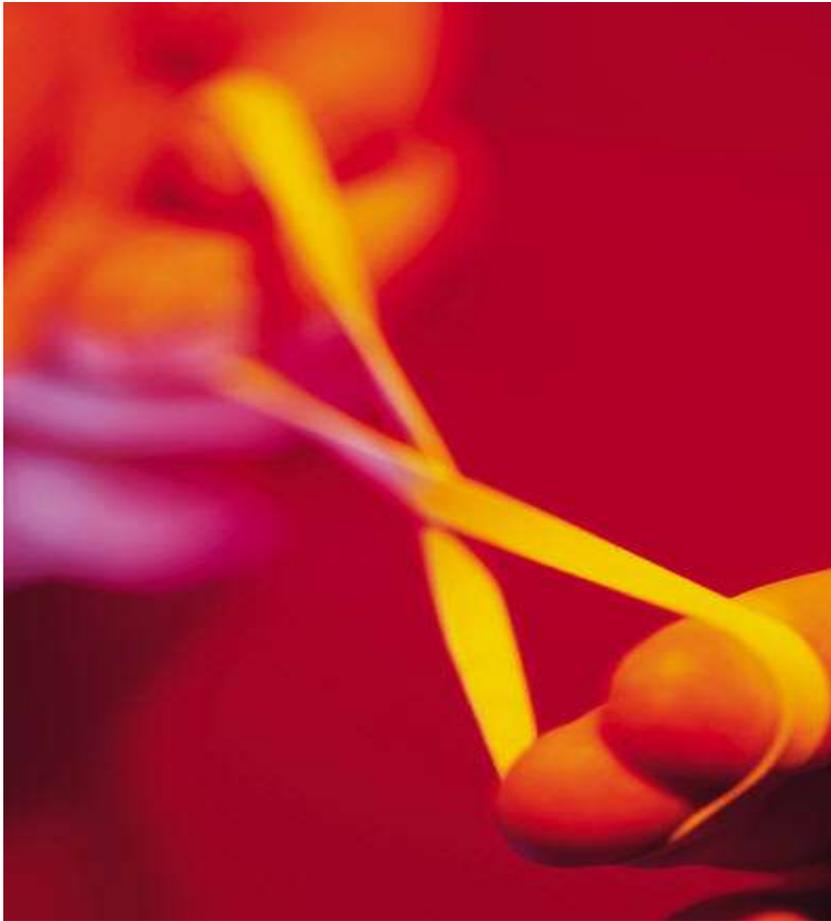
- Tapes were stored in affected areas or at office
- Tapes/DASD/documents were destroyed or damaged (i.e. Water)
- Tapes were lost in transport
- Tapes could not be shipped because of travel restrictions
- Restoration processes were unknown or untested

Actions to Consider...

- Utilize electronic media
- Set up multiple locations for backups, one set near your recovery location
- Store critical documents on electronic media in remote locations
- Ensure restoration procedures are part of your BCP and tested



Business continuity and resiliency is about...



- Protecting your enterprise
- Mitigating business and support issues
- Increasing your competitive advantage
- Protecting brand reputation
- Enabling seamless, continuous business transactions
- Exploiting market opportunities



Taking the next step in our business resilience evolution is easy.



- Visit our [Smarter Planet Security and Resilience page](#)
(risk study results available here)
- Take the [Risk Maturity Self-Assessment](#)
- Contact corcoran@us.ibm.com

