

Public Disclosure Authorized

Public Disclosure Authorized

Public Disclosure Authorized

Public Disclosure Authorized

# KNOWLEDGE NOTE 2-4

CLUSTER 2: Nonstructural Measures

## Business Continuity Plans





# KNOWLEDGE NOTE 2-4

## CLUSTER 2: Nonstructural Measures

# Business Continuity Plans

**A business continuity plan (BCP) identifies the potential effects of disruptions to an organization's critical operations if a disaster were to occur, and specifies effective response actions and quick recovery measures. In the Great East Japan Earthquake (GEJE), BCPs served their purpose to some extent, but certain weaknesses were identified. While BCPs helped to keep critical operational functions going, and then to rehabilitate general operations, most small- and medium-sized enterprises had, unfortunately, not even prepared BCPs. Since the private sector plays a major role in creating jobs and supporting local economies, it should be required to prepare BCPs, but with support from the government.**

## INTRODUCTION

### WHY IS PRIVATE SECTOR PREPAREDNESS IMPORTANT?

Because social functions and stakeholders in modern developed societies are highly interconnected and interdependent, any disruptive incident can affect an entire region. A single incident can have an extensive impact both domestically and internationally, by undermining supply chains and value chains (KN 6-3).

Examples of direct and indirect negative effects include:

- Loss of human life and injury.
- Damage to physical assets, the environment, and natural resources.
- Disruption of public utilities, such as electricity, water, transport, and telecommunications.
- Disruption of citizens' daily livelihoods.

- Disruption of local government administrative functions.
- Reduced supplies of daily goods and services.
- Bankruptcy of private companies, lost economic opportunities, and income loss.
- Unemployment and economic downturns.

The private sector plays a major role in creating employment and supporting the local economy, thereby ensuring regional sustainability (KN 4-5). In the event of a disaster, the role of the private sector becomes even more important in this respect. In each phase of disaster risk management, it:

- Provides evacuation shelters and relief goods.
- Ensures employment so that victims can regain their livelihoods quickly.
- Provides labor, services, and products essential to the speedy recovery of social functions, roads, transportation, supermarkets, schools, hospitals, and other functions.

Effective cooperation among disaster-resilient private sector players helps ensure a resilient and sustainable civil society. One lesson learned from past catastrophic events such as the Great Hanshin-Awaji (Kobe) Earthquake, Hurricane Katrina, the GEJE, and the Thailand flood is that the private sector plays an important role in reducing national and regional economic damage when it is well prepared.

## **WHAT IS A BUSINESS CONTINUITY PLAN?**

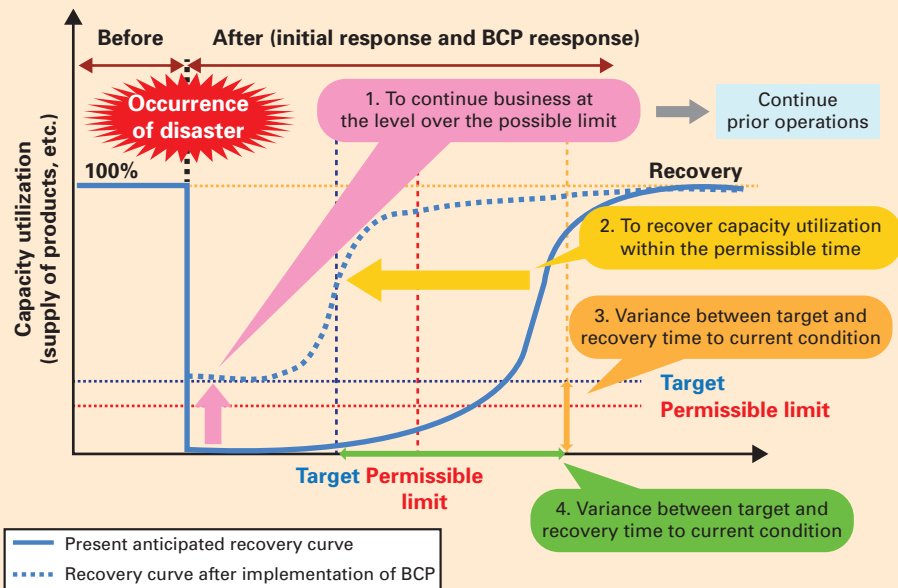
A BCP identifies the critical operational functions of an organization and the potential impacts of a threat prior to its occurrence. It specifies effective ways of responding and quick recovery measures so that a business can continue to operate at acceptable levels and avoid disruptions for a specified period of time (box 1). The process of developing and deploying a BCP strategically within the organization is referred to as business continuity management (BCM).

BCM is a risk management strategy that focuses on maintaining the continuity of critical operations to ensure the supply of goods and services, and thereby the organization's survival. Figure 1 shows the concept of business continuity and the recovery curve of an organization's level of service before, during, and after a disaster. Developing a BCP helps an organization identify what preparations must be made before a disaster strikes to secure its employees, assets, information technology (IT) systems, and information, as well as its reputation.

### BOX 1: Accident at a microchip plant

In 2000, lightning struck a Philips microchip plant in New Mexico, causing a fire that contaminated millions of mobile phone chips. Nokia and Ericsson, Philips's biggest customers, reacted differently to their supplier's plight. Nokia's supply-chain management strategy allowed it to switch suppliers quickly; it even reengineered some of its phones to accept other types of chips. Ericsson took no action and waited for Philips to resume production. That decision cost Ericsson more than \$400 million in annual earnings and, perhaps more significantly, some of its market share. By contrast, Nokia's profits rose by 42 percent that year.

FIGURE 1: The business continuity plan concept



Source: Cabinet Office.

## **BCPS IN THE ASIA-PACIFIC REGION**

The Asia-Pacific Economic Cooperation (APEC) region accounts for approximately 40 percent of the world's land area, more than 40 percent of the world's population, and around half of global gross domestic product (GDP). And yet, regrettably, it sustains almost 70 percent of the world's natural disasters. As the APEC region's supply chains are closely intertwined, and a single disaster can affect the economic activities of the entire region, it is essential and urgent that efforts be made to strengthen the private sector's capacity for disaster preparedness and recovery by promoting BCP development among APEC member economies. A survey was conducted in 2011 to better understand the current level of BCP awareness and adoption in the private sector.

Substantial differences were found in the level of BCP development between small and medium enterprises (SMEs) and large companies, listed and unlisted companies, and between companies that have actually experienced disaster-related disruptions and those that have not. The level of BCP development varies greatly by firm size: only 15.9 percent of SME respondents have a written BCP, while 52 percent of large company respondents have one. Also, there are considerable differences among APEC economies.

## **FINDINGS**

### **BCPS IN JAPAN**

The Central Disaster Management Council chaired by the prime minister has carried out damage estimates for the Tokyo metropolitan area in the event of a strong inland earthquake. A magnitude 7.3 earthquake with an epicenter in the northern part of Tokyo Bay has been forecasted and one scenario assumes extensive damage, including a death toll of approximately 11,000 people, the total collapse of 850,000 buildings, and a maximum economic loss of ¥112 trillion. After the GEJE, governments are currently revising this damage estimate to verify if even worse figures are possible or probable.

In 2005 the council established the Policy Framework for Tokyo Inland Earthquakes to ensure the continuity of functions in the capital, and to establish countermeasures for reducing the death toll by 50 percent and economic losses by 40 percent. It also set strategic goals that included increasing the earthquake-proof rating of houses and buildings to 90 percent, increasing the fixed furniture rate to 60 percent, and increasing the BCP adoption rate to 100 percent for large companies and 50 percent for medium-sized companies within a 10-year period. In addition, it published business continuity guidelines to help companies develop their BCPs. Forty-six percent of large companies and 21 percent of medium-sized enterprises have developed BCPs in 2011.

### **DAMAGE AND RECOVERY AFTER THE GEJE**

The GEJE caused 656 private companies, which employed 10,757 workers, to go bankrupt within one year. But only 79 companies of them, 12 percent, were located in the Tohoku

region while the others were located all over Japan. The reason for bankruptcies among the latter group was indirect loss or damage caused by disruptions in their supply chains.

The BCPs functioned to some extent, but with some problems. The ratio of companies without a BCP was still high at the time of the GEJE, and differed according to company size. Among large companies, 40 percent had prepared BCPs before March 11, while only 12 percent of medium-sized enterprises had done so. Approximately 80 to 90 percent of the medium-sized and large companies indicated that their BCPs were effective in the response-and-recovery phase after the March 11 disaster. All SMEs indicated that their BCPs were effective to some degree, while the ratio of SMEs that produced BCPs was low. Workers' capacities had been developed by formulating BCPs, so they were able to respond to even unexpected events. SMEs were able to start alternative production by collaborating with companies in other prefectures and were willing and able to collaborate in BCPs, because they do not compete with one another on a national scale.

The main reasons that BCPs did not function are as follows:

- The damage was much greater than predicted, because the companies followed government scenarios that underestimated reality.
- Not enough training was conducted. Workers who had not seen the BCP documents could not take the necessary actions.

## PRACTICES AT THE GEJE

**The case of a large distribution company.** Seven & i Holdings Co., Ltd. operates convenience stores, general merchandise stores, department stores, and supermarkets. The company has revised its BCPs seven times since the Kobe earthquake in 1995. A supermarket in Ishinomaki City, one of the most devastated cities, started selling foods and other goods outside its own buildings starting at 6 p.m. on March 11. On the next day, all 10 supermarkets opened in the Tohoku Region. The decision to reopen in times of disaster was delegated to the individual shops, which could assess the situation quickly. Multiple logistics routes were secured and 400 workers were brought from other areas to support the stores in the devastated areas.

**The case of an SME.** The Suzuki Kogyo Co. is a waste management company with 67 employees in Sendai City, which suffered from the GEJE. The company equipped itself with satellite phones and standby generators, and conducted training and drills based on a BCP formulated in 2008. The emergency center was established at 3:30 p.m., 45 minutes following the earthquake on March 11. Two days later the company resumed the critical operation of treating medical waste from dialysis. Other companies took over the waste management operations.

## HOW PAYMENT AND SETTLEMENT SYSTEMS AND FINANCIAL INSTITUTIONS RESPONDED TO THE GEJE

Financial services are a basic lifeline in a society, supporting many kinds of economic activities. The failure of payment and settlement systems could prevent customers from making

## BOX 2: How the GEJE affected payment and settlement systems and financial institutions

The Bank of Japan (BOJ) responded to the disaster by:

- **Supplying a massive amount of cash to financial institutions.** The cash paid out by BOJ branches and local offices in the Tohoku region of northeastern Japan in the first week after the earthquake amounted to approximately ¥310 billion, about three times the amount paid out over the same period in the previous year.
- **Exchanging damaged banknotes and coins** for clean ones through the Bank's branches in the Tohoku region and the special window in Morioka City, which amounted to ¥2.42 billion starting after the earthquake up through June 21.
- **Ensuring the stable operation of the BOJ-NET**, which is used for funds transfer and services related to Japanese government bonds as well as the BOJ's market operations.
- The minister for financial services and the BOJ Governor jointly requested financial measures, such as allowing withdrawals of deposits upon the verification of the depositor's identity even in cases where deposit certificates or bank passbooks had been lost.
- **Arranging treasury funds services and government bond services** at its head office and branches, where treasury agents were unable to continue those services.
- **Gathering information**, in cooperation with the Financial Services Agency, on damage to and the actions taken by payment and settlement systems as well as the financial institutions, and providing accurate and timely information to domestic and overseas markets on the operational status of the Japanese financial infrastructure.

The private sector responded as follows:

- To meet the needs of depositors and borrowers, the financial institutions opened temporary offices, and opened windows on Saturday, March 12, and Sunday, March 13, 2011, the weekend immediately after the earthquake. Of the total of about 2,700 offices of the 72 financial institutions headquartered in 1 of the 6 prefectures in the Tohoku region or Ibaraki Prefecture in the Kanto region, some 310 offices (11 percent of the total) were closed as of March 16.
- The financial institutions worked in close coordination, such as by delivering cash to other institutions that needed additional cash.

deposits, cash withdrawals, and payments, thereby intensifying public anxiety in times of disaster. The financial sector was seriously affected by both the physical damages and the indirect effects of the disaster. Nevertheless, even in the aftermath of the earthquake, the nation's payment and settlement systems and financial institutions, including the Bank of Japan, continued to operate in a stable manner and, on the whole, managed to function normally (box 2).



## BOX 2, CONTINUED

- Major bill and check clearing houses expanded their areas of coverage, so that participating financial institutions could bring in bills and checks that normally would be processed by the clearing houses that were not operating.
- Payment and settlement systems as well as financial institutions across Japan generally continued to operate stably. There were also procedures and systems in place to address the temporary inability of affected financial institutions to participate in the payment and settlement systems.
- Marketwide business continuity arrangements developed in the money market, and the foreign exchange market and the securities market functioned smoothly.
- The stock market infrastructure was able to provide smooth and uninterrupted processing with a high level of operational capacity despite the surge in trading volume following the earthquake.

### Lessons

- Payment and settlement systems and financial institutions need to review the severity and scope of the scenarios used in designing their business continuity arrangements, to see whether they address potential stress events sufficiently in light of the recent disaster.
- It is crucial to enhance business continuity arrangements in line with the identified scenarios. This includes enhancing backup arrangements for computer systems and headquarters functions, increasing in-house power-generating capabilities against potential long-term constraints on the electricity supply, enhancing arrangements for securing necessary staff in the event of prolonged disruption of public transportation services, and securing system-processing capacity to withstand a surge in trading activity.
- Implementing and enhancing “streetwide exercises,” with participation of the overall financial industry, and eventually with the cooperation of nonfinancial firms such as the providers of social infrastructure, would be effective in ensuring consistency of arrangements across institutions.

For details, see “Responses to the Great East Japan Earthquake by Payment and Settlement Systems and Financial Institutions in Japan.” Payment and Settlement Systems Department, Bank of Japan, BOJ Report and Research Papers (2011).

## LESSONS

The private sector in Japan has made substantial efforts to adopt BCPs, which proved to be useful when put into action following the GEJE. At the same time, however, some lessons were learned that could make corporate BCPs even stronger and more effective. Until recently there had been an attitude of tolerance toward business disruptions caused

by disasters of a certain scale, as they were considered to constitute force majeure. Public opinion has shifted since March 11. Now, even if the scale and intensity of a disaster exceeds assumptions and predictions, disruptions are deemed to constitute negligence, and top managers are expected to be able to take appropriate measures to ensure the continuity of critical operations. Companies should:

**Ensure BCP effectiveness through regular drills and continuous education.** These drills and training must target specific departments in the company and should address specific capacities and skills; generic training is of no use. The plan should list specific activities and give detailed directions to be followed in emergencies and to facilitate recovery. These should be explained in detail to those officials and employees who are expected to implement them. Drills and training should be regular and ongoing, and some coordination at the sectoral level is recommended.

**Radically shift from a “disaster-based” to a “consequence-based” perspective in strategy development.** Private companies should formulate their BCPs to reflect the results or outcomes they expect from implementation, rather than specific measures to counter specific disasters. They should identify key services, and examine how long the service will be disrupted and how they can shorten the disruption time.

**Focus more on supply chain disruption risk by knowing more about the situations of stakeholders.** In addition to the company’s own operations, BCPs should address supply chain issues that affect other companies and markets. To facilitate this, meetings should be held regularly with companies in the same sector and with supply chain companies, first to assess the potential risks and then to develop concerted measures to ensure business continuity throughout the supply chain.

## RECOMMENDATIONS FOR DEVELOPING COUNTRIES

If well prepared for disasters, the private sector can play an important role in reducing local and regional economic damage. BCPs are an effective tool for strengthening the private sector’s disaster resilience.

**Raise public awareness.** Private companies and organizations do not always recognize the importance and usefulness of BCPs. Efforts should be made to raise awareness about BCPs and develop effective BCPs to achieve greater regional resilience. Practices and lessons from disasters should be widely shared with private companies and organizations.

**Start from a small disaster.** Private companies could begin with a small hazard scenario as the first step in formulating BCPs, and then add greater or different kinds of hazards. For example, in Japan, since earthquakes are a very familiar hazard, most companies start by preparing BCPs for earthquakes which are considered easier to produce. They then proceed to develop BCPs for more complicated disasters, such as pandemics.

**Mobilize government support.** Governments may feel that providing support to BCPs for the private sector is not their role. But securing livelihoods and the local economy is certainly a relevant public sector concern. Governments should provide private companies with the necessary information such as risk assessments and guidelines for producing

BCPs. Also, governments should collaborate with chambers of commerce and other industrial associations that provide support to these companies.

## KEY REFERENCES

Asian Disaster Reduction Center. 2011. "BCP Status of the Private Sector in the APEC Region 2011." [http://publications.apec.org/publication-detail.php?pub\\_id=1234](http://publications.apec.org/publication-detail.php?pub_id=1234).

BoJ (Bank of Japan). "Responses to the Great East Japan Earthquake by Payment and Settlement Systems and Financial Institutions in Japan." BOJ Report and Research Papers, Payment and Settlement Systems Department, Bank of Japan, Tokyo.

Cabinet Office. 2009. "BCP Guidelines (in Japanese)." <http://www.bousai.go.jp/Minkan-ToShijyou/guideline02.pdf>

———. 2011. "Survey on BCPs (in Japanese)." [http://www.bousai.go.jp/kigyoubousai/jigyou/keizoku12/kentoukai12\\_05.pdf](http://www.bousai.go.jp/kigyoubousai/jigyou/keizoku12/kentoukai12_05.pdf).

*Financial Times*. 2008. *The Fire That Changed an Industry: A Case Study on Thriving in a Networked World*. October 1. <http://www.ftpress.com/articles/article.aspx?p=1244469>.

Teikoku Data Bank. 2012. *Survey of Bankruptcies Caused by GEJE (Higashinihon daishinsai kanren tosan no doukou chousa)* (in Japanese). <http://www.tdb.co.jp/report/watching/press/pdf/p120303.pdf>.

Tokyo Marine Nichido. 2011. *Survey on GEJE and BCP*.