

## Introduction of Countermeasures Taken by BIGLOBE, a Service Provider Promoting BC and DR to Address Disaster Environment Issues

In recent years, the Internet has taken root in our everyday lifestyles as an indispensable tool for collecting and dispatching information. BLOGGING, which is a means of online information exchange, is now widely accepted as a useful tool for the rapid dissemination of on-site opinion and information, especially for communicating details of emergency situations. Internet, which is used in various aspects of every day life, is now required to provide a continuous service, even in disaster situations. It was ten years in July 2006 since BIGLOBE, an Internet service provider, began to supply services. The activities of BIGLOBE in promoting BC (Business Continuity) and DR (Disaster Recovery) as a reliable service provision for users are introduced in this paper.

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### Challenges in BC and DR

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The subscription costs of Internet in Japan are one of the lowest in the world. Users can enjoy the benefits of a high speed Internet environment at low cost. Internet is now an essential social infrastructure just like water, gas or electricity. Under such circumstances it is a critical issue for Japanese providers to reduce the cost by providing low-price services to users, however, the cost is increasing in order to prepare for the replication of systems as disaster countermeasures. It is also an important task for BIGLOBE to continue to provide its services at a level that can maintain a satisfactory balance between costs and profits.

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### The First Step in Our Achievements

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BIGLOBE provides basic operations including service provision and processing of subscriptions and membership resignations, etc., functions that are all processed on IT systems. Therefore, the continuous operation of these IT systems is considered to be essential and as a result we have focused on reinforcing the following two functions.

- Data backup
- Systems redundancy

#### (1) Data Backup in a Remote Site

BIGLOBE employs the NEC data storage system called "iStorage." Effectual disaster recovery is achieved by depending on iStorage capabilities such as storage system mir-

roring and backup software. As shown in **Fig. 1**, data stored at the MV (Master Volume) in iStorage is full-time synchronized with and copied in the RV (Replication Volume) in another system. The data copied in the RV is also backed up in a secondary office every week via the relevant network. To do this, a large volume of data transfer is necessary. Therefore the process is carried out during the night so that it avoids adversely overloading the network at any one time.

#### (2) Redundancy

BIGLOBE systems are basically configured by being based on redundant systems. For example, as shown in **Fig. 2**, various network connections in Japan and overseas have redundancy with the MAN (Metropolitan Area Network) system located at its center in Tokyo. Moreover, in the case of a disaster occurring in Tokyo the network connections both for Japan and overseas are in fact also being operated from Osaka, which is however not a complete duplication in terms of the network capacity in Tokyo.

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### Conducting BIA

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The implementation of backup and redundant systems increases costs, which can be a problem for a service provider. Especially, it would cost a lot for us to construct a new network system in Osaka, which duplicates the Tokyo system. This is self evident, however, even this, reasonable investment is required while considering priority and importance in businesses. In such a situation, BIGLOBE conducted a BIA

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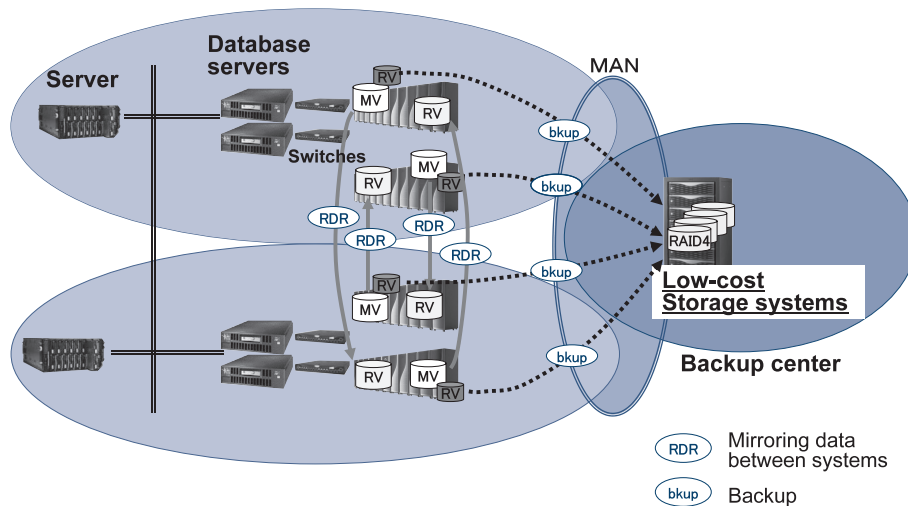


Fig. 1 Mirroring and backup of storage systems.

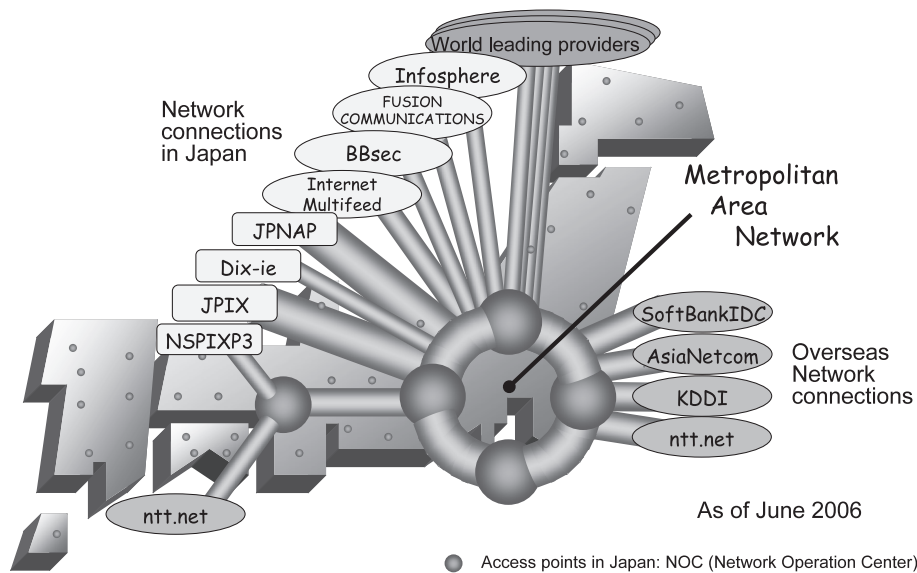


Fig. 2 BIGLOBE's backbone network configuration.

(Business Impact Analysis) in July 2005 in consultation with NEC's Consulting Division.

A case in which a large-scale earthquake occurred in Tokyo and the BIGLOBE services were disrupted for one to fourteen days was assumed. First, the services of BIGLOBE were classified into nine categories and the half-year sales after such a disaster were calculated. This calculation included various

sales reduction causes, such as BIGLOBE provider service membership cancellations, BIGLOBE portal advertisement income reductions and penalty costs due to service failures. The recovery time objective (RTO) was determined according to the calculated total sales by summing up all such conditions. Moreover, by considering the system dependency of each service in order to find out which system had the most

critical impact, the priority of the recovery processes was determined. In the present situation, some systems cannot achieve the RTO (Recovery Time Objective), however, conducting BIA (Business Impact Analysis) gave us clear priority in the system recovery process so that the whole recovery procedure was processed more smoothly.

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### Concerning Organizational Recovery Procedures

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Even if the system recovery priority is determined satisfactorily, there are still various unexpected events and disruptions that could be expected when the recovery process is actually carried out after a disaster. To prevent panic when a disaster occurs, predetermination of the recovery execution process is recommended. Based on this view, the establishment of a BCP (Business Continuity Plan) to be referred to when a disaster occurs is currently in hand.

The first step is to allocate an incident management team that should be set up by considering various contingencies such as the disaster size, the timing when a disaster occurs, the most preferable set-up location, etc. At the same time, responsible staff must be appointed to make decisions, communicate with users, undertake inspections and research into damage conditions, etc. Operational procedures defined for each system will be employed as a part of the business continuity plan in order to establish an IT recovery plan to be applied to support the entire organization. The reinforcement of organizational recovery procedures is considered to be an equally important task to system recovery procedures in enabling a quick and efficient recovery from a disaster event. While updating the organizational recovery procedures as well as the system recovery procedures, a continuous improvement to the BCP will be implemented.

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### Conclusion

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Internet services are expected to function as a core service of the Ubiquitous society. BIGLOBE will energetically promote our BC and DR activities to provide our services as effective countermeasures against the occurrence of unexpected disaster events.

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