

DEVELOPMENT OF BANKING IT INFRASTRUCTURE

Natural Disasters Being Successfully Handled and Assignments to Guarantee Important State Projects Fulfilled Satisfactorily

In 2008, under the correct leadership of the PBCHO'S Party Committee, the PBC's Science and Technology Departments at all levels united as an impregnable stronghold to deal effectively with the snow and ice disaster in south China and the severe earthquake in Wenchuan, Sichuan Province and, through arduous efforts, to satisfactorily fulfill the assignments of ensuring information security during the 2008 Beijing Olympic Games and Paralympic Games and the two national meetings. The secure and smooth operation of information Systems and network infrastructure provided a strong guarantee for the PBC to successfully carry out a variety of financial businesses. Facing natural disasters, the science and technology departments at both the headquarters and branch/sub-branch levels strengthened information exchange, improved the duty system and strove to ensure communication networks and equipments. Chengdu branch, Xi'an branch and Lanzhou central sub-branch, which are located in the quake-hit areas, despite of the arduous and complicated environment, resumed as quickly as possible the operation of business systems through business agents, office transfer and starting up the emergency back-up facilities, etc. and the shocks of major natural disasters on the PBC's information system were successfully resisted.

In order to fulfill the tasks to ensure information safety during the 2008 Beijing Olympic Games, the PBC organized and convened a total of 21 special conferences (including 3 conferences of commercial bank presidents) to discuss and map out the assignments to guarantee banking information security during the 2008 Beijing Olympic Games. On March 18, 2008, the first presidents conference was convened to mobilize

the banking sector and to make an overall arrangement for the mission of guaranteeing banking information security during the 2008 Beijing Olympic Games, and the Work Plan for Guaranteeing Important Banking Information During Beijing 2008 Olympic Games was formulated and issued. Under the PBC guidance, the banking sector acted on its own to complete the classified information security protection evaluation and carried out twice risk evaluation and the contingency test. Inter-department contingency plan was formulated, and contingency coordination was maneuvered by simulating a case in which a major intrusion to BOC' e-banking and a severe interrupt of Huaxia bank's trunk lines of communication simultaneously occurred. The inspection program and lists were drawn up, inspection training was carried out, on site inspections on five commercial bank headquarters and 80 banking units in 7 Olympics-related cities were conducted. A total of 410 problems were found, 307 of which were rectified and changed ahead of the Olympic Opening Ceremony, with an improvement rate of 72.5 percent. 11 banks with nation-wide presence were instructed to carry out a 3-rd party network attack testing. 57 safety problems classified as 41 categories were detected, 47 of which were rectified and modified ahead of the Games, with an improvement rate of 82.4 percent. 10 detected problems were of high risk flaws, 9 of which were rectified before the Games, with an improvement rate of 90 percent. The PBC's contingency liaison handbook was compiled. 10 banks were organized to conduct a special test of fighting against a service-refused attack. Regular weekly meeting mechanism on bank safety protection was set up and being followed during the Olympic period. Bulletins were regularly complied. A safety flaw in the ICBC's network and an attack on the China UnionPay's network were successfully handled.

Construction of Two-tiered Data Center and IT Infrastructure Being Steadily Advanced

According to the PBC's strategic thought to construct a two-tiered data center, the construction of data center at the PBCHO progressed successfully. The location for the data center was decided, and the transformation of computer room at the PBCHO premise and that of disaster back-up centers of CCPCs was completed. The architectural adjustment of both LAN and Internet at the PBCHO premise was also completed and the hidden single point peril was removed. The first phase project of CCPC disaster back-up centers had realized the non-local data back-up of RMB settlement account management system. The construction strategy and the overall plan of the PBC Shanghai Disaster Back-up Center were formulated so that necessary preparations were made for guiding the construction of the PBC Non-local "Three Centers at Two Locations" Disaster Back-up System. A breakthrough was made in the construction of the PBC LANs at the provincial level. In March, The construction of the LANs at the provincial level was completely finished. The construction of intra-city communication relay centers was vigorously pushed on, and, by the year end, all but a few of the provincial branches or sub-branches had fulfilled the construction of the relay centers.

Installation of computer and storage cluster at the PBCHO's computer center was carried forward steadily. Strategic planning was formulated for the basic operating environment of computer and storage both after the data center migration and in the coming 3-5 years; for the fundamental application environment and for the PBC application deployment. The goal was to set up for the construction of a storage system in the coming 3-5 years. The unified back-up platform was established to make intra-city back-up of all systems realistic. Back-up costs are therefore greatly reduced and the operational maintenance management significantly simplified.

Initial success was achieved in pilot implementation of data centers at the provincial levels. In 2008, Guangzhou branch selected typical application systems, such as the provincial centralized OA system and the unified portal system, to build a basic framework for provincial data center which integrates together application, security, operating maintenance and IT infrastructure, in such way as not only to reach the pre-set goal but also to provide other PBC branches or sub-branches with a work train of thoughts and implementation experiences.

Construction of Application Systems Being Steadily Pushed on, Remarkable Success in Data Centralization and Integration of Resources Being Achieved

On April 28, the Foreign Currency Clearing System was put into pilot operation to start the clearing service for the U.S. dollar, Euro, Japanese Yen and Hong Kong dollar, etc. On May 8, BEPS-based Cashier's Check Processing System went live. Relying on the BEPS, three provinces and one city in east China and Shanghai started to run bank draft business. Treasury Centralized Balancing System (TCBS) went live in Chongqing on July 1 and in Hainan in December. Treasury Information Processing System went through the upgrade of application software and was introduced in three phases and the number of covered provinces was increased from 18 to 23. The Financial Statistical and Monitoring Management Information System went live on Jan.1 and operated on a double track mechanism. The application of multiple systems add-on platform for integrated business was constantly enlarged. By the year end, the platform was shared among ten systems, both hardware and software resources were fully utilized. As a result, system costs were largely reduced. The going-live deployment of multiple models of Integrated Administration System was worked out and the system entered the pilot phase. The coordination was organized to make the Official Business Online System go live. In 2008, the project to upgrade the internet version was

organized and developed, and the deployment before going live was intensely worked on by related departments. The software upgrade of the integrated finance management systems was completed and the initial introduction was made in November. The enterprise finance report management system went live at the year end. The “Jin Hong” engineering (National Macro-Economy Management Information System) had gone through the procurement of both hardware and software, system development, integrated test, integration deployment as well as the initial acceptance test. The PBC went through the acceptance test much earlier than the other units who participated in the joint construction. In addition, the “Jin Jian” engineering (Financial Supervision Management Information System) was advanced steadily. The completion of the feasibility study report laid a firm foundation for further development.

In 2008, great progress was achieved in data centralization and integration of resources. After data centralization was realized, the PBC branches/sub-branches at all levels could provide better financial services based on local characteristics and carry on studies on application of multiple dimension data model and explore ways to serve the local needs by utilization of the data centralized in national systems. Starting from the analysis of data stored in the treasury information system, an operating prototype cube of the treasury information system was developed and it had gone through a pilot run at 17 branches and sub-branches.

Ability of Self-maintenance Obviously Increased

In 2008, the PBC science and technology departments at all levels made all efforts to actively perform operation maintenance and technical guarantee for various systems. The smooth operation of communication networks and major information systems was ensured, and the attacks of natural disasters on the PBC information systems were withstood. All these showed that the capability to carry out the

operation maintenance on one's own was raised to a new level. The deployment for automatic collection of scripts for supervision and logs software of Treasury Information Processing System were worked out, so that the way to perform supervision only through manually reading logs could possibly be changed. The monitor and control of network equipments installed in the PBCHO LAN was achieved. The initial deployment in the PBCHO Headquarters LAN Monitoring System was completed. In July, the network monitor in TCBS pilot branches was put into trial operation to gradually achieve the goal of a unified network maintenance monitor. The initial integration of network monitor management system with main computer monitor system was realized. In order to further standardize the operation maintenance in the PBC branches, *The PBC Guidelines on Branches/Sub-branches Operation Maintenance Construction (on a trial basis)* was issued, and the overall construction of branch/sub-branch operation maintenance system was started.

Continuously Guiding the Financial Information System Development

Firstly, it was imperative to actively carry out the PBC supervisory responsibility for financial information safety. To protect banking information safety, a contingency plan for inter-department coordination was formulated and contingency inter-department coordination exercises were performed. A regular meeting system, a bulletin system and other related systems were set up. Common and difficult problems in information safety protection were identified and solved in a timely manner. Secondly, it was imperative to conscientiously push on for financial industry standards. In 2008, comments on 17 standards were solicited, 17 standards were submitted for examination, and 24 standards were submitted for approval. In the meanwhile, the project proposal and confirmation of 21 industry standards was defined. Four

industry standards, including one national standards, namely *the Codes Representing Currencies and Funds* and *the Banking Information Disaster Recovery Management Standards*, were published and put into effect. Thirdly, it was imperative to actively promote the development of the bank card industry. The test of bank cards' interbank application was deepened, the network coverage of the interbank application was enlarged, and the quality of interbank application was enhanced. The

guarantee cards for military personnel were introduced, the practice of “relieving a garrison with no need to change card” was realized. The technical examination and verification of commercial banks and foreign banks that issue bank cards was carried on conscientiously to control the risks from the original sources and to earnestly implement the business and technical standards. The adoption of IC bank cards was actively and steadily pushed on.