

NEC and Dialogic Join Hands to Ensure Fast CRBT Growth for Guangdong Mobile

Case Summary

Challenge

In 2003, China Mobile decided to offer commercial CRBT service free-of-charge on a trial basis in Shanghai, Beijing, Guangdong, and Zhejiang with a view to growing its market share. To ensure success, Guangdong Mobile decided to build a CRBT service platform with provincial coverage, outstanding performance, and easy scalability. The first phase of the project anticipated 4.5 million CRBT users.

Solutions

After detailed comparisons and repeated studies, NEC finally chose Dialogic® telecom components as the system hardware for the CRBT service planned by Guangdong Mobile. Even though there was little publicity, the response from customers far exceeded expectations. Although the number of users grew rapidly, the system worked smoothly, ensuring that every call request received a prompt response.

Challenge

Color Ring Back Tone (CRBT) has replaced the monotonous ring tones of the past with pleasing music, warm greetings, and interesting advertising. CRBT can not only reflect the unique personality of the caller but also provide a pleasurable experience for the person called, adding variety and enjoyment to a simple communications process.

CRBT has achieved remarkable success in Korea, Japan, Singapore, Hong Kong, Taiwan, and other Asia-Pacific countries, increasing average revenue per user (ARPU) dramatically for carriers. As competition intensifies in mainland China, carriers are moving from traditional network services to new differentiating services. Thus, CRBT has become one of the key strategies by which carriers are attracting new customers.

In 2003, China Mobile decided to offer commercial CRBT service free-of-charge on a trial basis in Shanghai, Beijing, Guangdong, and Zhejiang with a view to growing its market share. Because Guangdong Mobile Communications Company Ltd. (Guangdong Mobile) is the largest provincial operator in China in terms of network scale and number of users, the success or failure of its projects is very significant. To ensure success in this case, Guangdong Mobile decided to build a CRBT service platform with provincial coverage, outstanding performance, and easy scalability. The first phase of the project anticipated 4.5 million CRBT users.

Solution

As a leading telecom solution provider, NEC has successfully deployed large-scale

CRBT system platforms for many carriers. Because of its rich hands-on experience in the field, Guangdong Mobile selected the branch of NEC based in China to undertake the entire system integration of its CRBT service.

After detailed comparisons and repeated studies, NEC finally selected Dialogic® telecom components as the system hardware for the CRBT service planned by Guangdong Mobile and worked with BEIJING SUUN-HUASUN, the general agent for Dialogic telecom products in China, to develop the solution that Guangdong Mobile chose.

NEC selected nine cities served by Guangdong Mobile, including Guangzhou, Shenzhen, Zhuhai, Shantou, and Dongguan, as main access points, and assigned each city one or more voice processing units (VPUs) to serve as the central switching platforms for the CRBT system. NEC also constructed an integrated backend platform to support applications and a database for billing, user information, short messages, and music.

The core of each central switching platform consists of two Dialogic® DMN160TEC network interface boards and four Dialogic® DM/V2400A combined media boards. The DMN160TEC boards manage all resources and are able to block, open, or cancel the CRBT service temporarily through management tools, with each board supporting 16 E1 lines (480 voice links). The DM/V2400A boards provide music play service for multiple voice ports, with each board supporting 240 voice channels.

When a call is placed, a DMN160TEC processes the calling and called numbers and sends the appropriate information about the required CRBT service to a Dialogic® SS7 signaling gateway, which confirms the information provided by the DMN160TEC and accesses the CRBT database for the appropriate ring tone. When the called party's phone rings, a DM/V2400 plays the caller's choice of ring tone. Once the called party answers, the tone stops, the switch makes the connection, and the call begins.

The central switching platforms are connected to Guangdong Mobile's mobile switching center (MSC) and controlled through 100/1000M Ethernet connections.

Technologies

Guangdong Mobile's CRBT service requires a high-density voice system, which needs considerable channel resources when in operation. The system puts a heavy load on its CTI hardware platform, especially the voice boards. The platform must meet high-capacity access requirements and must also be completely reliable while providing high density and

outstanding performance. Since Dialogic® boards had already met these requirements for carriers in Japan and Korea, NEC chose Dialogic components for Guangdong Mobile's CRBT system. The CRBT systems in Japan and Korea currently support nearly 10 million users, and have been running smoothly since their initial launches.

Mr. Ling Jun, the manager of communication services at NEC in Guangdong, is in charge of Guangdong Mobile's CRBT project. "Customers such as Guangdong Mobile are always exacting," explained Mr. Ling, "and we must select the best products and provide the most reliable service for them. Dialogic products have demonstrated excellent performance, and they are our first choices."

Mr. Ling also discussed two other factors that are major considerations in product selection at NEC:

- **Sophisticated, mature technology** – Dialogic has one of the largest expenditures for voice board R&D in the industry. With technology proven effective over the last 20 years, its products have been continually upgraded and improved, and Dialogic telecom board products continue to maintain a leadership position in this market segment. "Dialogic has the most advanced control algorithm for voice links," said Mr. Ling, "and the company can provide the best echo elimination functionality and the shortest response time for high-density voice services in the industry. These types of functionality are of crucial importance for the smooth rollout of a CRBT service. For us, this kind of performance is the primary factor in our product selection process."
- **Solid reputation** – As a leading global developer of voice integration components for telecommunications and computers, Dialogic is able to supply new and high-quality products compliant with open international standards to meet the needs of original equipment manufacturers (OEMs), public network service providers, developers, system integrators, distributors, agents, and others. Currently, Dialogic has a large global market segment share and its products have been widely applied in the fields of voice, fax, data, voice recognition, speech synthesis, VoIP, call center management, and other advanced communication platforms.

As Mr. Ling pointed out, "Dialogic is a reliable global ally. Judging by our past successes with Dialogic products, we have every reason to believe that continued cooperation between Dialogic and NEC will make Guangdong Mobile's CRBT system a complete success for many years to come."

Results

On World Telecommunication Day (July 5, 2003), Guangdong Mobile introduced its free commercial CRBT service on a trial basis. Even though there was little publicity, the response from customers far exceeded expectations. Within a few months, the number of registered users increased from a few thousand to tens of thousands. Although the number of users grew rapidly, the system worked smoothly, ensuring that every call request received a prompt response. The initial project was a great success.

“Dialogic products are proven to work effectively in high-density CRBT service systems, which require considerable channel resources,” commented Mr. Ling. “Dialogic products not only allow us to create a completely stable system, but also offer flexibility and scalability. Judging from the response in the marketplace, scalability is no less important than stability.”

Because of the explosive growth in the number of CRBT system users at Guangdong Mobile, NEC is expanding the capacity of the system in Phase 2 of the CRBT project for Guangdong Mobile. NEC is adding more switching platforms and backbone access nodes. The expansion is expected to provide a smooth migration to a system platform that can support 100,000 new registrations per day and a total of 7.5 million registered CRBT users.

Because of declining ARPU, CRBT service offerings have become very important to mobile operators, and solution developers and equipment manufacturers are working hard to meet carrier demand. As a hardware equipment provider with proven technologies and services, Dialogic is delivering components that can allow carriers to explore the emerging CRBT market segment cost effectively

About Guangdong Mobile

Guangdong Mobile Communication Corporation Limited (Guangdong Mobile) was established in January 1998 and is now a wholly owned subsidiary of China Mobile HK Holdings. Guangdong Mobile is the largest mobile communications operator in Guangdong province with a network that serves the entire province. For more information on Guangdong Mobile, visit <http://www.gmcc.net>.

About NEC

NEC Corporation is one of the world's leading providers of Internet, broadband network, and enterprise business solutions dedicated to meeting the specialized needs of its diverse and global base of customers. Ranked as one of the world's top patent-producing companies, NEC delivers tailored solutions in the key fields of computer, networking, and electronic devices by integrating its technical strengths in IT and networks and by providing advanced semiconductor solutions through NEC Electronics Corporation. For more information on NEC, visit <http://www.nec.com>.

About Dialogic

Dialogic Corporation is a leading provider of open systems platforms to both the Enterprise and Service Provider markets. Dialogic's platforms enable converged communications, allowing service providers, developers, and system integrators to deliver services, content, and applications using multimedia processing and signaling technologies.

Dialogic was formed when Eicon Networks Corporation completed its acquisition of Intel Corporation's Media and Signaling business and simultaneously announced that Eicon's name would change to Dialogic Corporation.

Headquartered in Montreal, Canada, Dialogic and its subsidiaries have over twenty offices worldwide, providing local presence, knowledge, and support to serve its customers around the globe. Dialogic's research and development centers are located in Parsippany, New Jersey; Buffalo, New York; London, England; Dublin, Ireland; and Stuttgart, Germany as well as Montreal.

Information about Dialogic is available at www.dialogic.com.

For more details, go to www.dialogic.com

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