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is one of the 20 largest banks in the world with over 1,700 locations in more than 67 countries across the globe. With over \$346 billion in assets, the Amsterdam-based institution is intent on strengthening its trading business which revolves around the European Central Bank in Frankfurt.

With this objective in mind, ABN Amro’s board of directors decided to move the main office in Germany from Cologne to Frankfurt, where the central bank is located. The schedule for the move was tight, and the technology goals were lofty. But after an exhaustive search for the ideal telecommunications system to support its expanded trading functions, ABN Amro chose Bosch/TTSI for a turnkey, ISDN-based, CTI solution.

Bosch/TTSI’s Integral 33x Telecommunications System was uniquely suited for the assignment. Consisting of integrated workstations, state-of-the-art PBX, proprietary hardware & software, and ISDN-based voice & data

networks, Integral 33x would provide vital information and data from all over the world, enabling ABN to evaluate trading risks and to make quality decisions with ample time.

*“This is a true, groundbreaking, productivity tool that accelerates the traders’ ability to gather, send and react to real-time data,”* explains TTSI President Reinaldo Pabon.

Bosch Telecom is the seventh largest telecommunications supplier in the world, with sales of over \$5 billion annually. It is a division of privately-owned R. Bosch, a Top 10 German company with annual sales in excess of \$20 billion. TTSI is a privately-held systems integrator of ISDN-based CTI solutions that is

based in Somerset, NJ. Created in 1980, the telecommunications firm’s \$18 million in annual sales rank it among the fastest-growing technology companies in the nation. Together in a strategic partnership, the alliance is dedicated to bringing sophisticated CTI solutions together with leading-edge technology and service capabilities.

With a high degree of technical complexity and a tight schedule, the project was launched in October 1994. Under the direction of Project Manager David Haynes, a task force was assembled to collect interest points from traders and to establish requirements. System flexibility was a key concern. Amro’s past experience with telecommunications systems led them to look for a system that could be customized, changed or moved without costly and timely hardware changes.

In the past, desktop-accessible, computer-supported Caller ID was not possible. Data information for decision making support had to be pulled manually, slowing the process considerably. Corporate-wide integration of multiple trading floor locations was a priority, as well. But the main requirement for the new system was the effective integration of voice and data.

*“The target was to provide an information and telecommunications infrastructure that would fulfill the traders’ requirements and allow them to carry out their business in an effective manner,”* Haynes explains. *“Ease of use, integration of trading turret and workstations, graphical user interface, and integration of application programs with*



## A Case Study

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telephone functions, were only some of the concerns.”

Haynes and his team were also concerned about investment protection and expandability. “We needed software-driven, Open systems that are able to communicate with each other and allow adjustment of features and services in a quick and flexible way,” he says. “The systems that we install today, must ensure that they are open for future applications.”

On December 4, 1994, contracts were awarded to Bosch Telecom for communications systems, low and high voltage cabling, and alarm/security systems. Reuters/Triarch was chosen as the market data platform, Compunet for the LAN, and Sun Microsystems for work-

stations. A project plan was developed with all vendors, and the new trading room system became operational within six months, as scheduled, on June 6, 1995.

Officially launched with great fanfare in September 1995, the newly-engineered ABN Amro communications system runs on a proprietary software platform called X Turret, developed by TTSI of Somerset, NJ. Specifically designed for financial applications, the X Turret system enables users to create a trading turret that is displayed in an Open Windows or Motif environment on UNIX desktop workstations. With X Turret, traders are networked on-line to integrate with client-server applications, relational and object oriented databases, and market data services. Voice recognition and video conferencing can also be incorporated.

Another highlight of the Integral 33x System is the

integrated keyboard, TANK, also developed by TTSI. TANK supports all telephone functions, drives operation of workstations and PCs, and the emulation of market data services like Reuters, DTB and others in a single keyboard.

Traders at ABN Amro view the multi-function keyboard as a major innovation. In the past, they had to work with several different keyboards for each application. But Harry Mueller, Project Manager for Bosch Telecom, is quick to point out that the traditional separation between voice and data service belongs in the past.

“With this new solution,” TTSI’s Pabon explains, “there are 53 trading stations with the capacity to run up to 500 separate lines into each position. The front end of each position can be redesigned as needed, and a free seating feature means that a trader can sit down at an integrated workstation anywhere, log on, and instantly access his own,

customized, front-end format.”

Looking ahead, ABN plans to network database records into multiple locations, leading to a fully integrated data and communications system, where all information — such as voice, market data and customer information — will come together at the desktop level. ABN Amro also has plans to establish a Virtual Private Network (VPN) which will combine two major benefits: significant improvement of global communications, and drastic reductions in the costs of lease lines.

Bosch Telecom / TTSI is headquartered in Somerset, NJ. For further information about the Integral 33x Telecommunications System or any other aspect of CTI, please call **800-899-7017**.

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