# KPN IMS calls on HP SANs
# to ensure business continuity services

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– Cyber Center Project Manager Pedro Durlinger, KPN Integrated & Managed Solutions

**Business need:**
KPN Integrated & Managed Solutions (KPN IMS), a provider of managed-hosting services based in The Netherlands, sought to develop new uses and markets for its fiber-optic network capacity. One of the key target markets was long-distance data replication and recovery services, already mandated for many industries and necessitated by the September 11, 2001 terrorist attacks in New York City. The network was in place, but KPN IMS needed an easy-to-manage storage infrastructure, flexible enough to adapt to unpredictable market growth.

**Solution overview:**
In early 2001, KPN IMS implemented its first HP StorageWorks solution, the HP StorageWorks Disk Array XP512, to provide local backups for its managed applications – as well as primary storage and data-replication services at its Heerlen Cyber Center. In early 2003, the business unit implemented a StorageWorks Disk Array XP1024 equipped with 20 TB of capacity at its Cyber Center in Amsterdam. The business unit worked with HP Services to configure both StorageWorks XP disk

arrays into storage area networks (SANs) and deploy HP OpenView Storage Data Protector software, along with additional HP storage software, to deliver long-distance synchronous data replication and business continuity services.

**HP SAN delivers ultra-reliable local backup and recovery**
Since its inception 10 years ago, KPN IMS has developed a thriving business implementing and hosting SAP ERP, Oracle, and other large-scale applications. KPN IMS' largest customers run their key applications on the hosting firm's HP infrastructure, consisting of HP servers running the HP-UX 11i operating system and HP ProLiant servers running Microsoft Windows 2000.

In early 2001, KPN IMS implemented its first SAN in its Heerlen Cyber Center to support hosted customers. The StorageWorks Disk Array XP512, in combination with a suite of StorageWorks and OpenView software solutions, provides customers with zero-downtime data backups and recovery services. The 20 TB Heerlen SAN primarily supports customer applications running on HP-UX servers. KPN IMS representatives have long participated in HP Customer Advisory Forums, providing critical information on the security requirements for shared SAN solutions. As a leading business service provider, KPN IMS was uniquely qualified to help HP refine its SAN solutions for this demanding market.

**Demand for long-distance SAN turns fiber into gold**
Also in 2001, a combination of events and trends led to a rapid growth in demand for long-distance business continuity services. Events such as the 9/11 terror attacks, high-profile power outages in Europe and the United

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States, and subsequent changes in the regulatory environment forced many companies to place prime importance on data protection and disaster-recovery planning, as well as information lifecycle management (ILM).

"The tragic events of 9/11 changed the market dramatically," notes Hans Aaldering, KPN IMS Cyber Center marketing manager. "Quite suddenly companies realized that a backup site located a few kilometers away was no longer adequate to ensure business continuity – particularly in the face of regional outages or disasters. Almost overnight, customers wanted backup and recovery services across distances of 100 kilometers or more. In some cases, as in the financial industry, this was mandated by law."

According to Aaldering, KPN IMS was uniquely positioned to offer a complete package of long-distance backup and disaster-recovery services to meet this new demand. However, the company needed an additional SAN to launch the new service.

"We looked at other vendors, but a second high-capacity, resilient HP StorageWorks XP disk array made the most sense for us at that moment," Aaldering emphasizes. "We have a long, successful history with HP. In addition, the HP StorageWorks Disk Array XP1024 offered all the features and functionality we needed: proven performance, rock-solid expansion capabilities, centralized functionality, and support for heterogeneous environments."

The Disk Array XP1024, which currently supports approximately 30 servers, resides in the firm's 10,000-sq.-meter Cyber Center in Amsterdam, about 200 kilometers (125 miles) north of the Heerlen Cyber Center. The new XP disk array has 20 TB of raw capacity with expansion capability up to 129 TB. The XP-based StorageWorks SANs support heterogeneous connectivity – including the HP-UX 11i, Microsoft Windows, Sun Solaris, IBM AIX, and Linux operating systems. The division also implemented a suite of HP StorageWorks and HP OpenView storage and data-management tools and appliances, including OpenView Storage Data Protector, StorageWorks Command View XP, and StorageWorks Continuous Access XP.

**HP storage solutions go the distance**
"The combination of our 2.5 Gbit fiber network with HP StorageWorks, OpenView solutions, and HP Services gave us a unique and powerful new long-distance, data-replication and disaster-recovery service – which was immediately attractive to the market," explains Pedro Durlinger, KPN IMS Cyber Center project and process control manager in Heerlen. "We make it easy for banks, law firms, and others to meet their data protection and business continuity requirements painlessly – even over long distances."

Prior to this service, the practical limit for synchronous data replication was less than 10 kilometers. HP Services and HP storage specialists worked with KPN engineers to certify the backup and disaster recovery performance of the new environment. On-going HP Services support is vital in ensuring high availability and in meeting stringent service-level agreements (SLAs). Durlinger notes, "We can now offer synchronous data replication across 200 kilometers or more. With HP solutions, we also can get a customer up and running quickly with us so that they can protect their valuable data assets and sustain their business operations 24x7."

According to Durlinger, the new long-distance service brought in many new customers and expanded business with existing firms as well. "We already had secure, certified Cyber Centers," he states. "By adding the high-capacity fiber network and HP storage-management capabilities, we increased utilization in our Cyber Centers by 50 percent."

> "We chose HP StorageWorks XP disk arrays because they were the best fit for our existing infrastructure – and offered the robust performance we needed to meet demanding customer expectations."

Most of KPN IMS data replication and co-location customers are HP users themselves. "Most customers request HP storage and server infrastructures because they are reliable and work better together due to their end-to-end integration," Durlinger says. "Additionally, most of these customers use HP systems in their internal operations to limit management complexity and speed the time-to-production process."

### HP virtualization is the right call
The division is testing the HP OpenView Continuous Access Storage Appliance (CASA) with the goal of using it to extend its long-distance data-replication service to customers outside the realm of HP users. CASA enables key components of the HP Adaptive Enterprise vision by allowing enterprises to sustain new business models and capitalize on market conditions for a competitive advantage.

For example, CASA helps an enterprise achieve agility by better utilizing storage to support new business services, and pools disk storage across heterogeneous environments. KPN IMS could use the CASA solution as a "black box" at the customer site to enable heterogeneous data replication from non-HP systems to HP storage at its Cyber Centers.

Another offering under the HP Adaptive Enterprise vision, the HP StorageWorks Continuous Access XP provides host-independent, real-time data mirroring between XP disk arrays. Long-distance, synchronous data and application mirroring means customer applications continue running – as if nothing has happened – should a disaster occur near one of the backup sites. This data-replication continuity works across hundreds of kilometers, thanks to HP hardware and software and the high-capacity KPN fiber-optic network.

"In two-and-a-half years of use, our HP StorageWorks SANs have worked continuously," Durlinger says. "In the managed-hosting and telecommunications markets in particular, that level of reliability is crucial to our continued success. We achieved our goal of a single vendor environment that offers a single point of responsibility, plus the high availability and scalability we demand. HP storage virtualization lets us increase storage as demand dictates and manage it, without any significant additional staffing costs."

### HP Services – trusted partner
According to Aaldering, HP Services plays a critical role in enabling the business service provider to deliver the perfect service that customers expect and in helping to maximize the firm's return on its IT investments. As a strategic partner with KPN IMS, HP Services delivers an integrated service management program, which ensures continuous uptime and the flexibility to meet rapidly changing customer and market demands.
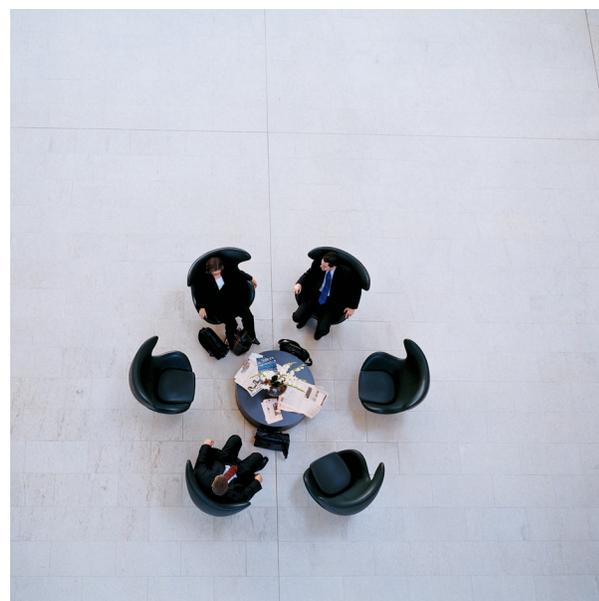


### About KPN Integrated & Managed Solutions
KPN Integrated & Managed Solutions (KPN IMS) is a vital unit of the Business Solutions Division of Royal KPN N.V. (www.kpn.com), the largest telecommunications provider in The Netherlands. KPN IMS provides managed-hosting services through four highly secure Cyber Centers located across The Netherlands. KPN IMS specializes in business-critical application hosting, including Oracle financials and enterprise resource planning, primarily for KPN Telecom customers.

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## Challenge

- Meet new and growing demand for reliable, long-distance backup and recovery data services
- Leverage underutilized 2.5 Gbit fiber backbone infrastructure to provide unique service offering
- Extend standardized single-vendor environment to include scalable, flexible SAN for highly available backup and recovery services
- Accommodate customers with multivendor systems
- Implement virtualization storage technology to enable easier management of large storage pools without increasing staff

## Solution

### Hardware

- HP StorageWorks Disk Array - models XP1024 and XP512 - configured as SANs and each equipped with 20 TB of raw storage capacity
- HP OpenView Continuous Access Storage Appliance (CASA)
- HP servers rp8400, rp7400, rp5400, and rp2400 running the HP-UX 11i operating system
- HP ProLiant servers ML580, DL380, and DL360 running the Microsoft Windows 2000 operating system
- HP StorageWorks 2-Gbit Fibre Channel switches (Core Switch 2/64, Edge Switch 2/16)

### Software

- HP OpenView Storage Data Protector and OpenView Storage Area Manager
- HP OpenView Continuous Access Storage Appliance (CASA) software
- HP StorageWorks Command View XP, LUN Configuration Manager XP, Continuous Access XP, Secure Manager XP
- HP ProLiant Essentials Rapid Deployment Pack
- HP Insight Manager 7
- HP-UX 11i, HP OpenVMS, and Microsoft Windows 2000 operating system
- SAP hosted applications, ranging from 4.0.B to 4.7, plus BW/APO/CRM

### HP Services

- SAN storage implementation, certification, and support
- Ongoing support and technical advice
- Regular software, firmware, and documentation updates
- SAN availability assessments and proactive maintenance
- Enhanced parts inventory management
- Customer support team and support plan

## Results

- Continuous uptime of HP StorageWorks SANs enables KPN IMS to meet strict service-level agreements (SLAs) for backup and disaster-recovery services in a managed-hosting environment.
- HP solutions allow rapid time-to-market for customer data replication, disaster recovery, and managed applications.
- A 20-fold increase in data-replication distances provides unique service offering that is proving irresistible to customers required or compelled to meet long-distance backup and recovery requirements.
- HP storage and management solutions support new long-distance data-replication capabilities, including a 50 percent increase in Cyber Center utilization.
- HP StorageWorks and OpenView solutions accommodate multivendor platforms and simplify storage management without additional staff.

For more information on how working with HP can benefit you, contact your local HP representative, or visit us at www.hp.com.