



Success Story

Korea Telecom Freetel

deploys optically-enabled,
future-proof storage network solution
from **Nortel Networks** and **EMC**

To cost-effectively protect its data goldmine and enhance competitive advantage through the continuing delivery of reliable and stable subscriber services, Korea Telecom Freetel (KTF) – a leading mobile communications and wireless Internet provider – has become the first wireless operator in Korea to build a disaster recovery centre leveraging the power of Nortel Networks dense wavelength division multiplexing (DWDM) optical technology.

In 2001, KTF acquired KTM.com, a wireless Internet service provider, and quickly needed to consolidate the IT infrastructures of both companies. At the top of the list was customer care and billing, the financial lifeline of any telecommunications company, as well as meeting these challenges:

- Consolidating backup and restore requirements, and implementing a proven disaster recovery strategy to minimize risks to the revenue stream.
- Designing a reliable storage area network (SAN) configuration.
- Enhancing performance.
- Consolidating storage.
- Delivering uninterrupted service.

KTF deployed a joint solution from Nortel Networks and alliance partner

EMC, successfully and seamlessly implementing a SAN and disaster recovery centre at its computing facility in the city in Ilsan – based on EMC's Symmetrix Remote Data Facility (SRDF) business continuity solution and Nortel Networks DWDM-based OPTera Metro 5200 Multiservice Platform. In addition, KTF successfully transferred all mission-critical from its existing back up centre in Seoul's Mokdong area across 61 kilometres to Ilsan – via Nortel Networks DWDM, without interrupting subscriber services.

As a result, KTF is reducing time-to-revenue by facilitating rapid growth potential and speeding up its billing cycle by 290 percent – underpinned by the knowledge that its mission-critical data goldmine is secure and readily accessible at any time.

NORTEL
NETWORKS™

A one-of-a-kind wireless operator

KTF is a trendsetter. It also occupies a unique position in the history of telecommunications. No other wireless operator in the world has earned a spot in the Guinness Book of Records by signing up so many subscribers in so short a time!

KTF launched its nationwide personal communication service (PCS) in Korea in October 1997 and went on to enroll one million subscribers in six months, more than three million after 18 months, and four million within two years – a record unmatched by any other operator. Today, subscriber numbers exceed five million.

In future-oriented technologies, KTF is also a market leader. In September 1999, it became the first cellular operator to introduce IS-95B wireless Internet services in Korea. And in time for the May/June 2002 FIFA World Cup in Seoul, KTF launched CDMA 1xEV-DO (1X evolution-data optimized) services, the next-generation third generation (3G) wireless packet data system supporting data rates up to 2.4 megabits per second.

KTF's aim is to deliver a "service that thinks and acts from the customer's perspective," says KTF CEO Yong-Kyung Lee in his Web site greeting. "Our goal," he states directly, "is to go beyond customer satisfaction and touch the customer's heart."

And Koreans are responding. They demonstrate a love affair with the mobile phone that's unparalleled anywhere in the world – except, perhaps, in Japan. A new study¹ forecasts Korea's mobile subscriber penetration rate will reach 80 percent by 2006, up from 62 percent in 2001. And by March last year, some 15 percent of Koreans were already connected to the wireless Internet².



The accelerating growth of information

In making the move to a centralised disaster recovery centre, KTF is following a worldwide trend to not only protect but also leverage the power of its subscriber data – a goldmine that can be turned into vital commercial intelligence and information.

Three major factors are driving how progressive organisations like KTF are now starting to treat this information:

- The data revolution is silent, massive and relentless – but data can be very cost-effectively stored, recalled and processed in vast quantities.
- "Wise information" is the key to future success, with usable information becoming increasingly acknowledged as the greatest potential source of profitable growth and competitive advantage the business world has ever known.

- Readily available data storage means operators like KTF are able to record and recall valuable and insightful information about their subscribers for leveraging in future business transactions, marketing campaigns or services development.

As storage area networks based on the fibre channel (FC) protocol become more prevalent within enterprise and service provider data centres and disaster recovery centres, storage distribution is being enabled by improvements in storage software for data replication and input/output multi-path protection. The availability of fibre and optical technologies such as DWDM also continue to drive down transport costs.

Nortel Networks and EMC, optical networking and information storage industry leaders respectively, are combining their technologies to deliver innovative optically-enabled storage solutions that provide data replication and host channel extensions – separating servers and storage – up to 200 kilometres natively.

According to IDC, the value of extending the reach of storage networks comes from three reasons:

- Storage equipment housed in a central location is often more cost effective because it allows disparate locations to share storage resources.
- Placing a storage facility outside a densely populated urban area like Seoul translates into cost savings on rental space.
- Separating storage facilities across larger geographic distances is a better way to protect mission-critical data in the event of a disaster.

Nortel Networks and EMC, optical networking and information storage industry leaders respectively, are combining their technologies to deliver innovative optically-enabled storage solutions.



where information lives

The Nortel Networks/EMC alliance

Nortel Networks and EMC have joined forces to combine their best-in-class technologies to deliver solutions that support high data transfer rates, are very scalable, can be configured in multiple topologies, enable storage consolidation and host channel extensions, and can provide real-time data replication.

EMC's SRDF protects information and provides comprehensive business continuity in the face of both planned and unplanned outages. This online, host-independent, mirrored data solution duplicates production side data on one or more physically separate target Symmetrix systems – across the room, across the globe, or anywhere in between.

The industry's leading metropolitan area network (MAN) DWDM product, the OPTera Metro 5200 platform has been the vehicle for Nortel Networks to secure some 90 percent of Korea's metropolitan DWDM market, with carriers like Korea Telecom, Dacom, Thrunet and Hanaro Telecom joining KTF in deploying systems.

OPTera Metro 5200 delivers carrier-grade availability and scalability through 32 protected (64 unprotected) wavelengths and optional protection switching per wavelength. A photonic DWDM technology, it also enables bit-rate and protocol independent networking. This flexibility facilitates rapid, easy service provisioning by supporting SONET/SDH interfaces as well as Gigabit Ethernet, ESCON, FICON, Fibre Channel, Sync Fibre Optics Systems (FOTS/PDH) and others on the same card.

With the OPTera Metro 5200, service providers like KTF can enable standard 50-millisecond protection switching on a per-wavelength basis to provide optical layer survivability by routing signals around fibre failures.

Extending reach

The ability of the combined Nortel Networks/EMC solution to extend the reach of FC storage network up to 200 kilometers provides significant technical and business benefits. Reducing costs via storage consolidation and efficient data transport while enabling greater scalability, reliability and flexibility helps address important challenges that businesses are facing today.

What's more, this 200-kilometre distance is neither the limit of FC nor of the OPTera Metro 5200, it is simply the distance that has been presently qualified by EMC and Nortel Networks. Working together, both companies are strongly committed to enhancing existing storage and disaster recovery solutions, and to developing new ones that keep pace with the expanding world of information.

Nortel Networks: Global DWDM Leader

Nortel Networks led the global DWDM market in 2001 with nearly a 37 percent share, according to the Dell'Oro Group. In 2001, Nortel Networks also led the long haul DWDM market in Asia with a 29.7 percent market share, according to RHK. Nortel Networks metro optical services are deployed in more than 1,000 customer networks in 45 countries, and can be found in 18 of the top 20 metropolitan areas around the world.

¹Pyramid Research, April 2002

²Best Site, March 2001

**Sydney**

495 Victoria Avenue
Chatswood NSW 2067
Tel: (61) 2 8870 5200
Fax: (61) 2 8870 5222

Singapore

151 Lorong Chuan #02-01
New Tech Park
Singapore 556741
Tel: (65) 6287 2877
Fax: (65) 6380 8888

Hong Kong

6/F City Plaza 4
12 Taikoo Wan Road
Hong Kong
Tel: (852) 2100 2888
Fax: (852) 2827 7719

Beijing

Nortel Networks Tower
Sun Dong An Plaza
138 Wang Fu Jing Street
Beijing 100006
Tel: (86) 10 6528 8877
Fax: (86) 10 6528 0701

www.nortelnetworks.com

Nortel Networks and the Nortel Networks Globemark are trademarks of Nortel Networks. All other brands and product names are trademarks or registered trademarks of their respective holders. Information in this publication is subject to change without notice. Nortel Networks assumes no responsibility for errors in this document. Copyright © 2002 Nortel Networks. All rights reserved.