

## Polish Telco Operator Quadruples Bandwidth of Existing Core

Netia chooses Cisco® CRS-1 Carrier Routing Systems for IPoDWDM (40G), resiliency, and optimized total cost of ownership.

EXECUTIVE SUMMARY
<p><b>NETIA S.A.</b></p> <ul style="list-style-type: none"> <li>• Industry: Telecommunications</li> <li>• Location: Warszawa, Poland</li> <li>• Number of Employees: 1,500</li> </ul>
<p><b>CHALLENGE</b></p> <ul style="list-style-type: none"> <li>• Protect investment in the core fiber infrastructure while increasing capacity for broadband traffic and new services</li> <li>• Build a scalable core with smooth growth, leading to higher capital longevity</li> <li>• Lower operating costs to enable competitive pricing of services</li> <li>• Ensure exceptional quality of service to uphold the company's reputation and position in the market</li> </ul>
<p><b>SOLUTION</b></p> <ul style="list-style-type: none"> <li>• Introduce four Cisco CRS-1 Carrier Routing Systems to the core network</li> <li>• Deploy IPoDWDM on the CRS-1 platforms, to increase core capacity from 10 to 40 Gbps</li> </ul>
<p><b>RESULTS</b></p> <ul style="list-style-type: none"> <li>• Increased capacity for IP VPNs and Ethernet leased lines, enabling growth of the business customer base</li> <li>• Enabled aggressive merchandising of the new performance ("4x Internet access performance for the same price")</li> <li>• Increased capacity for residential customers, and ability to handle bandwidth-intensive services such as IPTV</li> <li>• Achieved unsurpassed scalability, high availability, and security</li> </ul>

### Challenge

Netia is the largest alternative telecommunications operator in Poland, providing a breadth of services throughout the country. The company's mission is to provide fully integrated fixed-line telecom services over state-of-the-art networks, and to reach the position of the preferred service provider both for business and individual customers. Netia aims to achieve this goal through the quality of its networks and services, customer satisfaction, and competitive tariffs.

The operator's track record is impressive, including growing its base of broadband subscribers to more than 400,000 over the last couple years. Netia continues to introduce new services and has also expanded its original focus from the business market to a mix of both business and residential customers, which was fueled by deregulation of the local loops throughout Poland. To grow its new residential business, the company plans to introduce new IPTV offerings this year and is forecasting a significant increase in broadband traffic from this and other bandwidth-intensive services.

The popularity of visual networking, with heavy use of video and Web 2.0 social networking and collaboration applications, is affecting IP traffic growth worldwide. The Cisco Visual Networking Index (VNI) Forecast for 2007–2012 indicates that IP traffic will increase at a combined annual growth rate (CAGR) of 46 percent from 2007 to 2012, nearly doubling every two years. This growth rate will result in an annual bandwidth demand on the world's IP networks of approximately 522 exabytes, or more than half a zettabyte.

"Even with the current state of the global economy, we are seeing an increase in broadband traffic," says Krzysztof Baran, chief technology officer (CTO) at Netia. "In our core network, we have to double capacity every two to three years. At the same time, we want to protect our investments in our existing equipment and introduce solutions that can meet our needs over several years. To hold our position as the leading non-incumbent provider, we must price our services aggressively and that challenges us to push performance up while driving down operating costs."

## Solution

This year, Netia decided to initiate a tendering process to evaluate the commercial core offerings and find the optimal upgrade path for meeting the forecasted capacity requirements. A three-phase process focused on the leading vendors and started with a review of the published specifications and capabilities for each. In the second phase, field trials were carried out to exercise the solutions within Netia's network. The final phase encompassed negotiations for the cost of the equipment and deployment, and included a detailed analysis of total cost of ownership.

The selection came down to a combination of factors. "Relationship with the vendor is very important to us, but first and foremost, the equipment in the core network has to be very reliable, almost perfect," says Baran. "In this situation, we were looking at capacity and total cost of ownership. In particular, we compared both capital expenses and operating expenses, and we were looking for a way to preserve our existing investments in our optical infrastructure."

Cisco was found to be the best choice, and Netia and Cisco partnered with NCR Poland to deploy four Cisco CRS-1 Carrier Routing Systems for the core upgrade. Because the companies have an established working relationship, the network teams at Netia were able to quickly come up to speed on the new platform.

### High Capacity with Interoperability

The Cisco CRS-1 solution gives Netia the ability to effectively quadruple core capacity using IP over dense wavelength-division multiplexing (IPoDWDM). This new network architecture builds on DWDM technology by eliminating the need for intermediate aggregation. As a result, Netia can avoid the use of transponders that are typically employed for interconnecting the routers to the optical transport network. Costs are lowered, and the IP and fiber layers of the network become much more scalable. Netia's field tests proved that IPoDWDM channels can operate at the highest available line rates, which means rates of up to 40 Gbps. The 40G IPoDWDM solution was proven to interoperate on their existing third-party 10G optical transport platform. Thus Netia achieved quadruple capacity without upgrading the optical transmission network. With multichassis scalability and Secure Domain Routing (SDR) virtualization on the same platform, the CRS-1 massively enhances the future expandability of the Netia core network for many years to come.

"With this core upgrade, we can boost the capacity of our existing optical infrastructure to 40 Gbps using IPoDWDM," says Mr. Baran. "Because the Cisco CRS-1 is very interoperable with equipment from many vendors, we can take advantage of Cisco's 40-Gbps leadership and also lower the total cost of ownership over the life of the solution. This was very important because we have an open, nonproprietary environment and ease of integration is critical."

### High Availability and Resiliency

Netia attributes its success in large part to its emphasis on network resiliency and the overall quality of the services that it delivers to subscribers. High availability is a priority for the operator, and the CRS-1 offered a feature set and proactive protection capabilities using IPoDWDM that enable significantly better resiliency compared to traditional solutions. For example, the SONET/SDH mechanisms have been used for decades; the CRS-1 features make it three times as resilient.

## Results

The Cisco IPoDWDM solution offers compelling technical and business benefits. With the integrated optical transponder technology in the CRS-1, Netia can eliminate unnecessary optical-electrical-optical (OEO) conversions and reduce equipment in its network. This advantage improves capital and operating expenses due to reduced power consumption (and carbon emissions), a smaller footprint, lower management overhead, and increased reliability. IPoDWDM also lets the operator scale an MPLS network one wavelength at a time, using the existing fiber infrastructure. This scalability will be even more compelling in future years.

Over several years, Netia's IPoDWDM implementation can significantly enhance its operational efficiency and scalability. Netia will be able to better serve its customers with higher bandwidth and better quality at highly competitive prices. Additionally, Netia's core network built on the CRS-1 offers notably higher capital longevity with massive scalable growth on the same platform. The network can now support the introduction of bandwidth-heavy services like IPTV and voice over IP, and business customers will be able to take advantage of a better quality of service (QoS), increased availability and bandwidth, and high levels of security.

"The new routers will allow us to connect more business customers and meet the increasing demand for services such as IP VPNs based on MPLS," says Baran. "We also see Ethernet leased lines as a high-growth service, and the CRS-1 will help us with these services. Overall, upgrading our network with such high capacity will strengthen our competitive position. We are also forecasting a related increase in our revenue from the sale of wholesale transmission services to other operators."

For all of Netia's customers, the upgraded core will mean higher bandwidth, lower prices, and better quality for Internet access and broadband services. To get the word out, Netia recently started a new ad campaign: "4x high Internet access with the same price." The message of this ad is directly related to the deployment of four CRS-1 routers, and achieving 4x10 Gbps in the core with IPoDWDM. By offering better service at a very competitive price, Netia is helping grow the market in Poland and enabling more people to be connected with better quality of experience for its users.

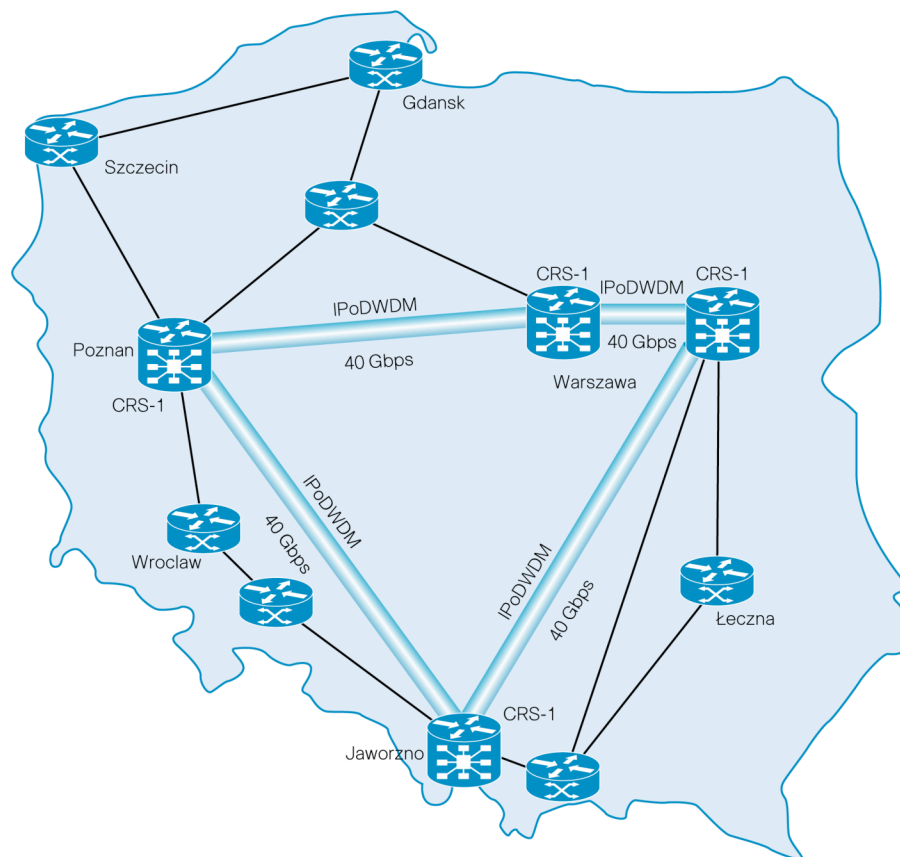
### PRODUCT LIST

- Cisco CRS-1 Carrier Routing Systems

## Technical Implementation

Figure 1 shows the logical diagram of the Netia network.

**Figure 1.** Netia Core Network



## For More Information

To find out more about the Cisco CRS-1, go to: <http://www.cisco.com/go/crs>.

To find out more about Cisco IPoDWDM solutions, go to: <http://www.cisco.com/go/IPoDWDM>.



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