

# BICS's use of Cisco Prime Network creates operational benefits for its IP service operations

*April 2013*

*By Justin van der Lande (Senior Analyst)*

## Executive summary

The launch of a new carrier Ethernet service built on Cisco network equipment was the catalyst for BICS to deploy Cisco Prime Network management software. Cisco Prime Network provides troubleshooting and inventory management automations in an integrated 'off-the-shelf' software package. BICS plans to consolidate all its IP-based services within Cisco Prime Network, once the initial carrier Ethernet service is complete.

BICS's first-line support staff provide customers with help on all service types. Before Cisco Prime Network, they were unable to support IP-related queries due to the in-depth technical knowledge needed to use the old command line-based IP management systems. All IP-related issues had to be escalated to second-line support staff for troubleshooting. The old systems provided poor search capabilities that were time consuming and costly to use, as multiple systems needed to be manually interrogated.

BICS estimates that, with its intuitive graphical interfaces, the Cisco Prime Network integrated system now enables its first-line support staff to resolve 70% of the more common issues and only pass complex IP issues to second-line support staff. The search capabilities of Cisco Prime Network have helped to reduce troubleshooting times by as much as 40 minutes per trouble ticket, enabling all support staff to quickly locate faulty network equipment and resolve customer issues faster.

## Business drivers for Cisco Prime Network implementation

BICS owns a 100Gbit/s ready, MPLS-enabled pan-European network which extends into 9 European countries, with direct connections to 160 countries and connections to 400 mobile operators. BICS provides wholesale voice, messaging and connectivity services in a highly competitive environment. Because its customers are operators, BICS's services must be both cost effective and highly reliable, backed up with strong service-level agreements (SLAs).

New services and the growing demand for data services have pushed up bandwidth requirements. To support these developments, BICS expanded its TDM network in 2009 with a next-generation network (NGN) spanning its entire network footprint installing over 300 Cisco devices. BICS used an extensive range of Cisco devices (76xx, 72xx, 28xx, ME34xx and ISRs) to build its NGN. This new hardware presented a challenge to BICS as, although its first-line support team was highly skilled in transmission technology, its existing tools were unsuitable to support the new IP network and services.

With highly demanding operators' customers, SLAs based on 99.7% up-time, and an aggressive 8-hour time to repair the new network, had to be as reliable as the currently installed TDM-based solutions.

BICS has a small team of operational staff that manage its Network Operations Centre (NOC) as well as field engineers who manage the network devices. The NOC team is divided into:

- first-line support staff, who capture all customer calls and if possible resolve issues at the first point of contact, and
- second-line support staff with specific in-depth knowledge to resolve issues that first-line support staff are unable to resolve.

Prior to the NGN roll-out, the in-house, mainly open-source software management systems for the IP environment had been built up since the late 1990s and required second-line support staff, who had appropriate skills and training, to operate them. As a result, all actual and potential IP-based issues were passed straight to second-line support staff.

This resulted in operational inefficiency, as not all of the issues that were escalated were actually IP-related, and so trouble tickets were passed back to first-line support staff, and second-line support staff were taking longer to resolve issues due to increased numbers of trouble tickets.

The significant increase in IP-based equipment within the BICS network as a result of the NGN roll-out meant that a different approach was needed to allow first-line support staff to:

- resolve the most common IP issues quickly
- provide better diagnostics to identify which issues were IP-based, rather than underlying transmission or other related problems.

## Criteria for selecting Cisco Prime Network

BICS realised that its existing in-house systems needed a fundamental change to allow first-line support staff to use them. In particular, the use of CLI (Command Line Interface) commands directly on network equipment for locating and troubleshooting network issues was not suitable for first-line support staff, who were familiar with working on transmission technologies such as DWDM or SDH.

Even though the initial service type supported on the NGN was for carrier Ethernet, the new system also needed to support Cisco equipment for IP transit, GRX (GPRS roaming), SMS/MMS and VoIP services, and to provide the following functions:

- a clear and easy-to-use graphical user interface suitable for use by first-line support staff
- fault and service monitoring and troubleshooting functions
- hardware inventory management
- integration with current systems (such as IBM Tivoli Netcool)
- an automated provisioning and work order process.

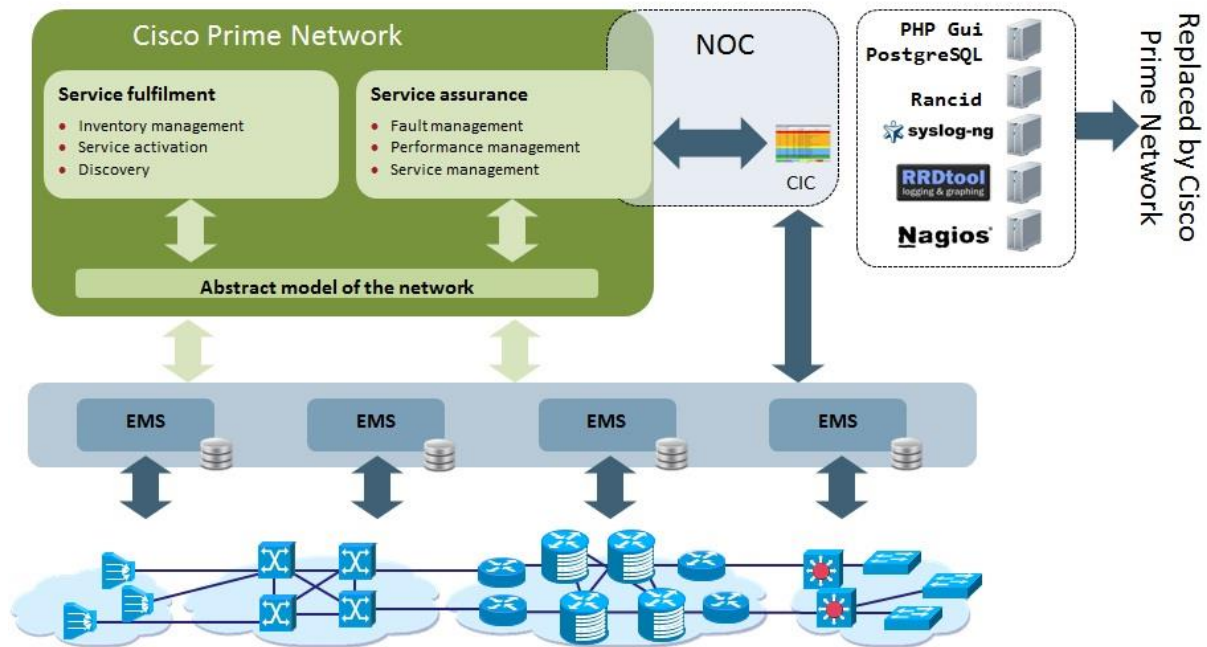
Cisco Prime Network provided a close functional fit to BICS's requirements. The decision to use Cisco Prime Network was taken in conjunction with the selection of equipment for the NGN. By using the same vendor for both, the aim was to ensure that any issues between the hardware and management solutions could easily be resolved.

## Project summary

The implementation of Cisco Prime Network provided new functionality for BICS staff and enabled a number of in-house systems to be retired. This provided savings on ongoing maintenance charges, but more significantly meant that the functionality was now presented in a single graphical interface that could be used by first-line support staff. First-line support staff can now resolve many common IP-based issues and only escalate qualified IP issues to second-line support staff.

Figure 1 shows the extent of the Cisco Prime Network installation with its key functions providing service assurance for NOC-based staff.

**Figure 1:** Scope of the Cisco Prime Network project [Source Analysys Mason, Cisco, 2013]



### Cisco Prime Network's troubleshooting capability

Cisco Prime Network provides support for carrier Ethernet services with its “path tracer” functionality that provides instant access to the carrier Ethernet service properties. BICS claims that troubleshooting has been greatly enhanced and resolution times reduced with this ability, as staff no longer need to search individual routers via command-line interfaces to determine the same information. The use of a fully graphical interface allows first-line support staff to search for equipment using a number of criteria, and ensures that information is more readily available for troubleshooting and fault finding. BICS makes use of the business tags feature within Cisco Prime Network to add information such as location and line reference numbers that enables staff to search for the exact interfaces associated with equipment, customers and services. To determine the same information from the original in-house systems required the cross-referencing of information from three separate systems, and could take second-line support staff more than 20 minutes.

With the original in-house systems, IP-related customer calls often required second-line support staff to call customers back. Now, by using Cisco Prime Network, first-line support staff can isolate the exact interface and launch a reporting tool to check any associated SLAs to confirm what response level is required with the customer still on the phone.

First-line support staff can also use device-specific troubleshooting scripts by right-clicking on the device icons within Cisco Prime Network. These scripts provide automated functions and wizards for the most common troubleshooting processes, as well as status information on the device that can be used to populate a trouble ticket for second-level support staff.

### *Cisco Prime Network's integration capability*

The Cisco Prime Network platform can be integrated with other key systems used by BICS, such as inventory systems and assurance systems that include:

- IBM Tivoli Netcool to provide root cause analysis, alarm correlation and alarm forwarding
- IBM Proviso, through an embedded application launcher function and configured through the Cisco Prime Network API.

These integrations come as 'out-of-the-box' functionality and ensure that data can be readily shared with other systems. As a result, staff save time through the availability of better and more reliable information, and there is a reduction in double-keying errors, which helps to ensure faster troubleshooting.

## Benefits of Cisco Prime Network for BICS

The core justification for selecting Cisco Prime Network was to provide service assurance for the roll-out of equipment on BICS's NGN and associated services based on carrier Ethernet. In addition to the core justification for Cisco Prime Network, BICS has benefited from a number of other operational efficiencies.

### *Retirement of old systems*

Licence costs for the previous systems used by BICS were minimal, as they used open-source software, but ongoing maintenance of the systems required one full-time skilled employee.

### *Operational efficiency for support staff*

Cisco Prime Network has reduced the time that support staff spend on troubleshooting in three significant ways, and has enabled new services to be launched without an increase in staff:

- Cisco Prime Network provides a tool that first-line support staff can use to **resolve 75% of all customer calls**. First-line support staff are able to determine whether the IP-related issue originates from the BICS core IP equipment or from other parts of the service (such as local access tails, which are the most common cause of problems). This minimises the need for trouble tickets being passed to second-line support staff and then back again later if they prove not to be IP-related.
- Cisco Prime Network provides first- and second-line support staff with instant search capability on customer services, **saving an average of 40 minutes per trouble ticket**. This not only saves time but ensures a better response to customers, helping to provide a better customer experience.
- Support from second-line staff is available 24 hours a day, but out-of-hours support costs are higher than their standard rates (120% at night, rising to 150% at weekends). Because BICS has customers worldwide, it regularly receives support calls 'out of hours' for its European staff located in Belgium. The fact that Cisco Prime Network allows first-line support staff to resolve IP issues or qualify them as non-urgent has **helped to cut down out-of-hours costs by more than 50%** as second-line support staff were less involved in out-of-hours cover.
- It used to take staff up to six months to reach maximum productivity with the old system as they needed to understand the command-line interface, and the various systems and their inter-relationships. With Cisco Prime Network's intuitive interface **staff become productive in a few weeks**. With more complex services

and an increasing number of functions that can now be performed by first-line support staff, the advantages of using Cisco Prime Network will increase over comparable times needed on the previous systems.

Although the introduction of Cisco Prime Network has increased operational efficiency, this has not resulted in a reduction in overall staffing levels, as BICS had to launch a new carrier Ethernet service, support new hardware and take on responsibility for managing all other IP-based services.

Operational savings are anticipated by BICS to grow as additional IP services are added to the new IP infrastructure, in addition to the carrier Ethernet services that are already being managed by Cisco Prime Network.

## Summary of savings and payback for Cisco Prime Network

The real payback from the Cisco Prime Network system is the ability for BICS to provide a new set of services, starting with carrier Ethernet. These additional revenues will provide a quick payback and the margins from additional revenues will exceed the costs over a year through the generation of new wholesale sales.

Operational savings from the use of Cisco Prime Network will be more modest due to the relatively low volume of services that BICS provides. As with all business services, the number of staff involved, trouble tickets and services provisioned are lower than those for mass-market consumer services, making payback periods for automations relatively long in comparison. However, these factors are partly offset by the complexity of wholesale services, the higher value of each customer, the higher cost of remote support and the more stringent SLAs.

## Summary of operational savings

- First-line support staff now resolve 70% of service issues related to IP, and pass only 30% to second-line support staff (whereas, previously, IP-related queries were escalated to second-line support staff).
- 75% of all customer calls are now resolved by first-line support staff, as they have an end-to-end view of the services.
- The search capabilities in Cisco Prime Network, involving business tags and the graphical interface, have saved an average of 20 minutes for each search, allowing first-line support staff to link trouble tickets to interfaces while still speaking on the phone to a customer.
- Automations have helped to reduce troubleshooting times by an average of 40 minutes per trouble ticket.
- The ability of first-line support staff to resolve IP issues or qualify them as non-urgent has helped to cut down out-of-hours costs by over 50% as second-line support staff are now less involved in out-of-hours cover.
- It is estimated that, once fully deployed, Cisco Prime Network will save 40 minutes each time a provisioning change is requested.

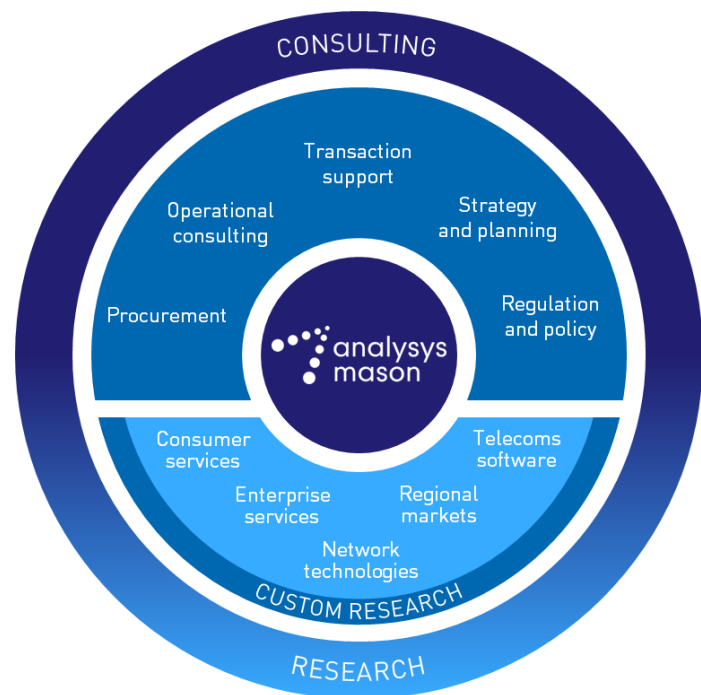
## About Analysys Mason

Knowing what's going on is one thing. Understanding how to take advantage of events is quite another. Our ability to understand the complex workings of telecoms, media and technology (TMT) industries and draw practical conclusions, based on the specialist knowledge of our people, is what sets Analysys Mason apart. We deliver our key services via two channels: consulting and research.

### Consulting

- Our focus is exclusively on TMT.
- We support multi-billion dollar investments, advise clients on regulatory matters, provide spectrum valuation and auction support, and advise on operational performance, business planning and strategy.
- We have developed rigorous methodologies that deliver tangible results for clients around the world.

For more information, please visit [www.analysismason.com/consulting](http://www.analysismason.com/consulting).



### Research

- We analyse, track and forecast the different services accessed by consumers and enterprises, as well as the software, infrastructure and technology delivering those services.
- Research clients benefit from regular and timely intelligence in addition to direct access to our team of expert analysts.
- Our dedicated Custom Research team undertakes specialised and bespoke projects for clients.

For more information, please visit [www.analysismason.com/research](http://www.analysismason.com/research).

Published by Analysys Mason Limited • Bush House • North West Wing • Aldwych • London • WC2B 4PJ • UK  
Tel: +44 (0)845 600 5244 • Fax: +44 (0)845 528 0760 • Email: [research@analysismason.com](mailto:research@analysismason.com) • [www.analysismason.com/research](http://www.analysismason.com/research)

Registered in England No. 5177472

© Analysys Mason Limited 2013

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, mechanical, photocopying, recording or otherwise – without the prior written permission of the publisher.

Figures and projections contained in this report are based on publicly available information only and are produced by the Research Division of Analysys Mason Limited independently of any client-specific work within Analysys Mason Limited. The opinions expressed are those of the stated authors only.

Analysys Mason Limited recognises that many terms appearing in this report are proprietary; all such trademarks are acknowledged and every effort has been made to indicate them by the normal UK publishing practice of capitalisation. However, the presence of a term, in whatever form, does not affect its legal status as a trademark.

Analysys Mason Limited maintains that all reasonable care and skill have been used in the compilation of this publication. However, Analysys Mason Limited shall not be under any liability for loss or damage (including consequential loss) whatsoever or howsoever arising as a result of the use of this publication by the customer, his servants, agents or any third party.