

Cisco Pilot Proves the Value of CDN Federations

Service Provider FastFacts

[View Cisco IBSG Service Provider FastFacts Website](#)

As more and more video traffic streams across service provider (SP) networks, many SPs are deploying content delivery networks (CDNs). In addition to supporting their own operations, these CDNs provide a viable commercial alternative – or complement – to pure-play CDNs (such as Level 3 and Limelight), and enable SPs to earn extra income from the content flowing over their network.

The Cisco® Internet Business Solutions Group (IBSG) believes that [CDN federations](#) will provide an even farther-reaching solution. Cisco began to develop the concept of CDN federations in 2011, envisioning them as *multi-footprint, open CDN capabilities built and shared by autonomous members*. With CDN federations, SPs can interconnect – and leverage – one another's CDN resources, ultimately benefiting all players in the value chain. Consumers gain in quality of service, SPs benefit through increased revenue potential, and content providers benefit in the assurance that their product will be distributed with guaranteed service and to a wider, potentially global audience.

Testing the Concept in a Real-World Setting: CDN Federation Pilot

Cisco IBSG has embarked on a three-phase exploration into the feasibility of CDN federations. Several innovative SPs are working with Cisco in a pilot program to validate key concepts required to make CDN federations a reality.

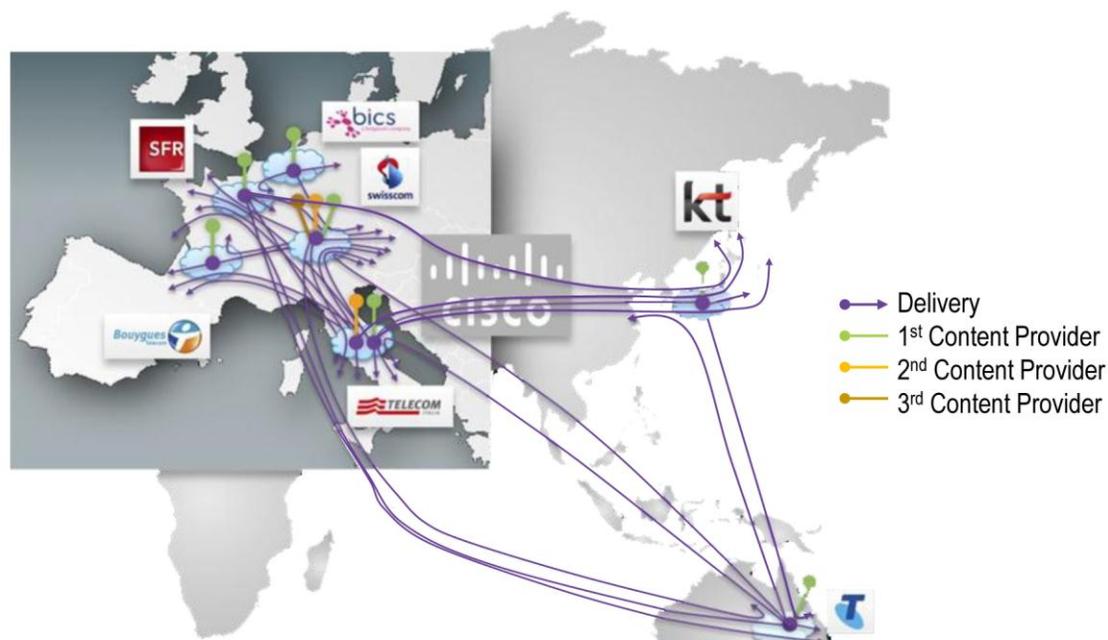
In the first phase of the Cisco CDN federation pilot (February to October, 2011), participants carefully developed the concept and formulated a plan to spur sharing of ideas, technology, and standards. To ensure the success of CDN federations and accelerate this sharing, Cisco and the pilot members are employing an open-standards-based approach and contributing findings to industry standards bodies, including the IETF and its Content Delivery Networks Interconnection (CDNI) Working Group, co-chaired by Comcast and Cisco.



Cisco Internet Business Solutions Group (IBSG)

In Phase Two (December 2011 to June 2012), the concepts identified in Phase One were validated in a test-pilot setting. For this phase, Cisco IBSG worked with European service providers Telecom Italia, BICS, SFR, Bouygues Telecom, and Swisscom, as well as Korea Telecom in Asia and Telstra in Australia (see Figure 1). Phase Two proved that participating SPs can offer a robust alternative to pure-play CDNs, while creating new revenues and network cost savings.

Figure 1. Setup of CDN Federation Pilot Phase Two: Labs Interconnection Meshing.



Source: Cisco, 2012

Phase Two tested multiple CDN federation use cases. The pilot explored how mobile operators can monetize the explosion in online data, and confirmed that improved content delivery via a CDN federation can drive new revenues through new business models such as premium CDNs with guaranteed SLAs. The pilot also assessed the roles a CDN exchange can play to support CDN federations through logging reconciliation, billing, content rerouting, and other functions. Additionally, the pilot examined operational implications of a federation and the required roles of various CDN participants.

The technical track included in-depth tests of interconnections among different CDNs, and compatibilities of various on-demand and live-streaming protocols. The team validated a wide range of technical requirements, including the need for transparency to content providers, and the need to support hierarchical dynamic acquisition of content across CDNs. Phase Two proved that CDN federations can enhance functionality for video on demand, live video, and web delivery.

Key Findings from Cisco's CDN Federation Pilot

CDN federations are gaining momentum as a way for SPs to generate revenues, reduce costs, and thus rebuild the content-delivery value chain. The work in Phase One and Two confirmed that SPs have an opportunity to deliver rich content services to media and broadcasters with improved SLA and guaranteed delivery. An essential ingredient to CDN

federation success will be open, standardized solutions. The results of the CDN federation pilot are being leveraged to accelerate standardization of CDN interconnection and to create an industry roadmap.

Phase Three of the Cisco IBSG CDN federation pilot is scheduled to run from January 2013 to May 2013. It will focus on more advanced functions, such as flexible CDN selection based on business rules, in-depth monitoring and analysis, and scaling. In Phase Three, the team will seek to involve a broader set of ecosystem players, including pure-play CDNs and content providers.

For now, the CDN federation – with its open standards, potential for new revenues, and global reach – is a proven concept and an essential solution for all players: service providers, content providers, pure-play CDNs, and consumers.

For a more detailed look at the CDN federation pilot, please see the complete report: [“The CDN Federation: Solutions for SPs and Content Providers To Scale a Great Customer Experience.”](#)

More Information

Cisco IBSG (Internet Business Solutions Group) drives market value creation for our customers by delivering industry-shaping thought leadership, CXO-level consulting services, and innovative solution design and incubation. By connecting strategy, process, and technology, Cisco IBSG acts as a trusted adviser to help customers make transformative decisions that turn great ideas into value realized.

For further information about IBSG, visit <http://www.cisco.com/ibsg>



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)