



# **Ovum** research

**Extracted from the report IPv6 Transition –  
What's the Rush?**

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## SUMMARY

### In a nutshell

The Internet and telecoms industries have been promoting the migration to IPv6 for the past few years. IPv6-compliant addresses have been available since 1999, but 2011 has witnessed a strong push for the transition to IPv6 from the legacy IPv4 addressing scheme. Many industry players (telcos, ISPs, IP backbone providers, Web 2.0 players) have been pressuring enterprises to prepare for the move; the recent World IPv6 Day (June 8, 2011) is one example, with suppliers positioning IPv6 as the "next-generation Internet." But a majority of enterprise customers seem to have little interest in making the transition. Why this contrast in attitudes? Will IPv6 be this decade's Y2K and turn out to be much ado about nothing?

### Ovum view

IPv6 as a standard has been around since 1999, and many hardware vendors have stated that it has been available in their equipment for at least five years. The US government is one of the few organizations that started its transition to IPv6 over five years ago. IPv6 support is a requirement that has been stipulated in government RFPs in the US, but in many cases providers simply stated that they were going to make the transition to IPv6 without having to provide any detail or timeframe.

Over the past few years, traditional service providers, the Internet Society (ISOC), ISPs, content providers, and broadband providers have started to promote its use and develop tactics to support IPv6 and the translation or tunneling of IPv4. ISPs, IP transit providers, and telcos have ramped up their efforts even further in the last year, with some concentrated efforts around the recent World IPv6 Day on June 8, 2011.

### Similarity with previous standardization efforts

In August 1990, the US government introduced a required procurement standard that specified interoperability requirements for computing equipment and software; this standard was known as the Government OSI Profile and was a subset of the OSI (Open Systems Interconnection) model. The GOSIP standard was meant to simplify purchasing and allow interoperability of WAN and LAN equipment for government agencies.

The NIST (National Institute of Standards and Technology) recommended a three-step approach to the implementation of GOSIP:

- Develop a clear and definitive policy regarding use of OSI within an agency.
- Develop an appropriate set of plans to implement the policy.
- Update and act on the plans as agency networks are acquired and upgraded.

IPv6 could prove to be eerily similar to GOSIP: with GOSIP, the standardization process took many years to develop, there was disagreement over when and where it applied, and there then followed many years of uneven implementation. As it turned out for GOSIP, it took over five years for the eventual move to continue implementation of TCP/IP as the standard and GOSIP was left as a technical guideline.

The transition to IPv6 is clearly different in many ways. There is industry agreement, the IPv6 imperative reaches far beyond just government agencies, and customers will have to move eventually since the world will simply begin to run out of IPv4 addresses. Yet, the implications of IPv6 are not fully understood or recognized by most enterprise customers.

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## IPv6 Transition – What's the Rush?

The transition to IPv6 is sometimes compared to the transition of phone-dialing requirements from 7 to 10 digits in the US. But a better analogy is the conversion to HDTV from standard definition TV. We knew that HDTV was coming for years and TV manufacturers were selling it long before HDTV content was being broadcast. And if the content wasn't filmed in HDTV, the video content and viewing experience weren't noticeably different. HDTV requires the equipment, service provider, content creator, and content provider to offer "HD" throughout the entire process to realize the full benefit and image of a true HD-quality video experience. In addition, there will be millions of devices (mostly consumer) that will not work on IPv6 – they will be analogous to older TVs. In the HDTV analogy, customers may believe that they have HDTV simply by buying an HDTV appliance. Once HDTV is fully implemented by the customer, equipment, service provider, and content provider, there are many features and an upgrade in video quality that can be leveraged. Similarly, enterprises may believe they are IPv6 compliant when in fact they simply own, run, and maintain IPv6-compliant hardware. And so again, service providers are caught in the middle between the customer and the device.

Ovum believes that service providers must educate customers, prepare for and facilitate the transition, and work with its infrastructure vendors in delivering the Internet experience required of its individual customers. But the customer must also take some responsibility in selecting the devices, applications, and IP infrastructure within its enterprise infrastructure to adjust to IPv6 with its service providers and end-user customers. Service providers can't force the transition on customers, and enterprise customers can't put their heads in the sand and simply believe that having sufficient IPv4 addresses constitutes an IPv6 strategy. The enterprise customer must have an IPv6 transition plan in place today, just as it should have a disaster recovery plan.

While enterprise customers must all have an IPv6 migration plan, Ovum thinks they will not get serious about formulating such a plan until they see a business impact or problem (for example, consumers or business partners who can't reach the enterprise website; e-commerce transactions that can't complete; employees who can't reach an ERP application; or gamers who can't reach gaming sites).

## Key messages

- Enterprise customers will continue to transition slowly to IPv6 and there won't be a "killer app" that will motivate customers en masse.
- The migration to IPv6 isn't just about running out of IPv4 addresses; it is more about its use to access customers, resources, devices, and content as IPv6 addresses become more prevalent.
- Enterprise customers who have business, resources, or suppliers in Asia-Pacific and enterprise customers who deal with mass-market consumers will be motivated to move early.
- Service providers, ISPs, and hosting companies must ensure that networks, websites, content, and applications are accessible using both IPv4 and IPv6.
- Industry players need to continue to support enterprise customers' transitions with professional services, from planning to implementation.
- There will not be a singular industry event or deadline for the transition, but a multitude of individual customer-specific requirements and regional IP address shortages, all sparked by the proliferation of customers, devices, and services.

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## IPv6 Transition – What's the Rush?

## THE INDUSTRY HAS BEEN PREPARING FOR THE MIGRATION

### Recommendations for enterprise customers

- The first course of action is to recognize that you will be moving to IPv6 even if you have IPv4 addresses available. Having many years of IPv4 addresses in inventory will not protect against having to move to IPv6 sooner than you think.
- Treat this as you would your disaster recovery plan; create an IPv6 transition plan as soon as possible. This is not just a non-critical, "make busy" project; it will become critical to your internal and external communication, especially if you hit a wall that either blocks your employees or your customers from doing business. The plan should have phases so that you can address the IPv6 transition requirement by business unit, services, or region.
- Develop a timeline now for IPv6 transition and share this internally to make sure that your ICT staff are aware of it and are ready for the activities required for the transition. This should include many of your strategic vendors and partners, who will need to know that you are making the migration as well.
- The plan should be developed with involvement from your key network, Internet, software, and web services providers; if they're not willing to participate, find others who are. Make sure to include many of the third parties or outsourced service vendors who need to communicate with and connect to your resources and internal networks.

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