## Executive Summary

I recently attended Telecom World 2015, which was held in Budapest, Hungary. While there, I walked the picturesque townscape that stretches out along both banks of the Danube River, and experienced the rich history and culture of the region. Most exhibitors at this event held by ITU are vendors and telecommunications carriers. This time Chinese companies provided backing, and there was a significant presence from Africa and Central Asia, while I noticed fewer exhibits from Western and Asian countries. Telecom events were once places where telecommunications carriers introduced their services and conducted business talks, but it hit me that this seems to have been supplanted by the Internet, revolving around Internet technology-based systems and the matching of Internet-savvy startup companies. I am gaining a new understanding of the fact that the Internet is no longer treated as special, and has become a form of communications infrastructure readily available for anyone to use. I returned home convinced that more than ever there is a need for constant vigilance when it comes to maintaining the security of this infrastructure.

This report discusses the results of the various ongoing surveys and analysis activities that IIJ, as a service provider, carries out to support the Internet and cloud infrastructure, and enable our customers to continue to use them safely and securely. We also regularly present summaries of technological development as well as important technical information.

In Chapter 1, we focus on the incidents that occurred day-to-day. Recently, the severity of DDoS attacks seems to be escalating, including cases that stem from criminal intent or political messages. In light of this, we look at route hijacking in our focused research. I believe this will give some insight into the roles of those who work behind the scenes to manage IP addresses and ensure Internet reachability.

In Chapter 2, we put a spotlight on technology for content delivery. Relay broadcasts of sports and music events are often seen on TV, but we carry out content delivery using high-capacity backbone lines. In addition to discussing the 4K/8K transmission tests we are carrying out in anticipation of the Tokyo 2020 Olympic and Paralympic Games, we also consider future trends.

In the Internet Topics section, we covered the topic of modular data centers. This idea is similar to electronic blocks that combine functional blocks as a new method for creating infrastructure. We have begun working on new concepts for data centers that proactively use outside-air cooling, and have also received orders from overseas for configurations that are now running stably in a range of environments. Here we examine the events leading up to this and the accumulated knowledge involved.

Through activities such as these, IIJ continues to strive towards improving and developing our services on a daily basis, while maintaining the stability of the Internet. We will keep providing a variety of services and solutions that our customers can take full advantage of as infrastructure for their corporate activities.

**Yoshikazu Yamai**

Mr. Yamai is an Executive Managing Officer of IIJ and Director of the Service Operation Division. Upon joining IIJ in June 1999, he was temporarily transferred to Crosswave Communications, Inc., where he was engaged in WDM and SONET network construction, wide-area LAN service planning, and data center construction, before returning to his post in June 2004. Since then he has managed IIJ's Service Operation Division as Director. He also heads IIJ's data center operations, and he played a key role in the establishment of the modular "Matsue Data Center Park," which was the first in Japan to use outside-air cooling.