

## Executive Summary

According to materials published by the Ministry of Internal Affairs and Communications on March 14, 2014, the total download traffic of broadband service subscribers in Japan was estimated to be approximately 2.5 Tbps in November 2013, which is 33.2% higher than the same month the previous year. As noted in the last volume of this report, we are seeing a trend in which traffic is gradually shifting to HTTP/Web applications. In Gartner's "Hype Cycle for Emerging Technologies, 2013" published in August 2013, the key theme is the evolving relationship between humans and machines. The Hype Cycle highlights technologies that support the following six areas: "Augmenting Humans with Technology," "Machines Replacing Humans," "Humans and Machines Working Alongside Each Other," "Machines Better Understanding Humans and the Environment," "Humans Better Understanding Machines," and "Machines and Humans Becoming Smarter." The report states that big data, which is a key technology for achieving these goals, is just reaching the peak of its hype cycle.

Ensuring the security of data related to the privacy of individuals is essential for the safe and secure use of the Internet. However, at the same time, proactively utilizing the data exchanged and accumulated on the Internet and cloud solutions is also considered necessary for furthering the trend of advancing human capabilities and society by increasing the utilization of computers.

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

In the "Infrastructure Security" section, we give a month-by-month chronological summary of major incidents observed during the three months from January 1 to March 31, 2014, and report on the results of our statistics gathering and analyses for the entire period. We also present our focused research for this period, including discussion of the results of an investigation that involved analyzing PlugX specimen groups to identify the kinds of targeted attack groups that were behind them. Additionally, we examine the attack technique known as DrDoS that has been on the rise since late last year and the countermeasures against it, and provide an explanation of the Workshop on the Appropriate Way to Handle Cyber Attacks in the Telecommunications Business.

In the "Messaging Technology" section, we report on our analysis of trends in spam for the 52 weeks from April 1, 2013 to March 30, 2014, with a focus on the 13 weeks between December 30, 2013 and March 30, 2014. In our discussion of email technology, we discuss the implementation status of sender authentication technology, and look at efforts to revise the SPF specification standardized as an experimental RFC in 2006.

In the "Technology Trends" section, we examine the current state of big data analysis, and also look at technological trends related to analysis platforms that demand a shift to real-time solutions, and the diversification of big data analysis techniques for which knowledge can be obtained from time-series data. Additionally, we examine the results of trend analysis using Wikipedia PVC as an example of analysis focused on the timeline of big data.

Through activities such as these, IJ 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 solutions that our customers can take full advantage of as infrastructure for their corporate activities.

Author:



**Toshiya Asaba**

President and CEO, IJ Innovation Institute Inc. President and CEO, Stratosphere Inc. Mr. Asaba joined IJ in its inaugural year of 1992, becoming involved in backbone construction, route control, and interconnectivity with domestic and foreign ISPs. He was named IJ director in 1999, and executive vice president in charge of technical development in 2004. When the IJ Innovation Institute Inc. was founded in June 2008, Mr. Asaba became its president and CEO. When Stratosphere Inc. was founded in April 2012, he also became president and CEO of that organization.