Executive Summary

Looking back on 2011, there was a tidal wave of popular uprising that has engulfed Middle Eastern nations, as seen in events such as the Jasmine Revolution in Tunisia, the collapse of the Mubarak regime in Egypt, and the downfall of Colonel Qaddafi in Libya. Also, the riots in London and demonstrations against the gap between rich and poor that spread from Wall Street to around the world, both breaking out in the face of a protracted downturn in the global economy, still continue with no end in sight. Amidst this turmoil people turned to the Internet to share information and determine their best course of action.

In Japan the Great East Japan Earthquake that struck on March 11, 2011 and the nuclear accident that followed have highlighted the importance of citizens acting on their own initiative based on first-hand information from the Internet rather than simply relying on information from major organizations.

Meanwhile, with a seemingly endless stream of various Internet-based attacks and information leaks taking advantage of these events, it is crucial for individuals to raise their awareness of Internet safety.

This report discusses the results of the various ongoing surveys and analysis activities that IIJ 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 chronologically sorted month-by-month outline of major incidents observed during the three months from October 1 to December 31, 2011, 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 incidents and problems regarding the issuing of public key certificates, as well as targeted attacks and their handling.

In the "Messaging Technology" section, we present long-term trends in spam over the past 65 weeks, and examine spam ratio trends and trends in distribution of the main regional sources of spam for the 13 weeks between October and December, 2011. We also report on the penetration rate of sender authentication technology.

In the "Network Technology" section, we examine IPv4 address sharing methods proposed for the period of transition to IPv6 after IPv4 address exhaustion. Categorizing these into stateful and stateless methods, we review and compare the characteristics of each. We also explain the specific behavior of stateless methods based on 4rd, which we are implementing on SEIL routers on an experimental basis.

Under "Internet Topics," we report on proof-of-concept tests planned for implementation in the first half of FY 2012 at the Matsue Data Center Park that IIJ opened in April of last year with the concept of integrating facilities and IT. These tests aim to achieve further energy savings for data centers.

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 solutions that our customers can take full advantage of as infrastructure for their corporate activities.

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