

Internet Topics: The IJ Backbone Network

In April 2013, IJ collaborated with IJ Europe Limited (former company name: IJ Exlayer Europe Limited) to establish a data center in London, extend the IJ backbone, and connect to LINX (London Internet Exchange), as a part of efforts to improve IJ backbone connectivity with European countries and enhance our international operations (Figure 1).

Since its establishment IJ has had POP servers set up in the United States, which was the center of Internet activity. It has also provided reachability between Japanese customers and other countries by connecting to many ISPs, with the core goal of improving connectivity between Japan and foreign countries. IJ America also provides access services for U.S. customers, and with the establishment of a London data center, IJ will be able to offer Internet access services to customers in European countries as well.

In addition to enabling us to provide access services in foreign countries, this backbone extension will also have a positive impact on the access services we offer in Japan. The LINX Internet exchange in London that we connected to is one of the busiest in the world in terms of traffic volume. This means as IJ connects to ISPs in European countries, the exchange of traffic we had mainly carried out in heart of the Internet, the United States, can be handled in London as well. On the Internet, incoming and outgoing packets are routed through different ISPs depending on the controls put in place by the ISPs they go through. This is the norm on the Internet, so any reachability or latency issues are resolved through coordination with the ISPs involved. When handling the exchange of traffic solely in the United States as we did in the past, delivery to networks outside the United States falls under the control of the ISPs relaying the data. The expansion of IJ's area of influence will allow us to exert more control. Additionally, the direct international line between Japan and London we used results in less latency than delivering packets across the Pacific from Japan to the United States, and then on to Europe after crossing the Atlantic. This will bring improved throughput for more areas.

In Japan, many international submarine cables, such as those between the U.S. and Japan and those to other Asian countries, currently have their landing points on the Pacific coast between Ibaraki and Chiba or the Tokai region. When an international submarine cable is damaged it can often take several months to repair, so IJ uses multiple cables for redundancy. We have also taken route redundancy into consideration when designing routes between the landing stations and domestic POP servers and data centers. IJ cannot implement these initiatives on our own, but we design both domestic routes and international lines through close consultation with line providers on a routine basis. When we consider the risks associated with submarine cables, the landing point for the direct transcontinental cable between Japan and London used in this initiative being on the Japan Sea coast could help reduce such risks.

A great many expectations are placed on the Internet, which is a critical infrastructure for contemporary society. Meeting these expectations is one of IJ's principal missions, and we intend to expand our robust network both in Japan and internationally, with London as a starting point.

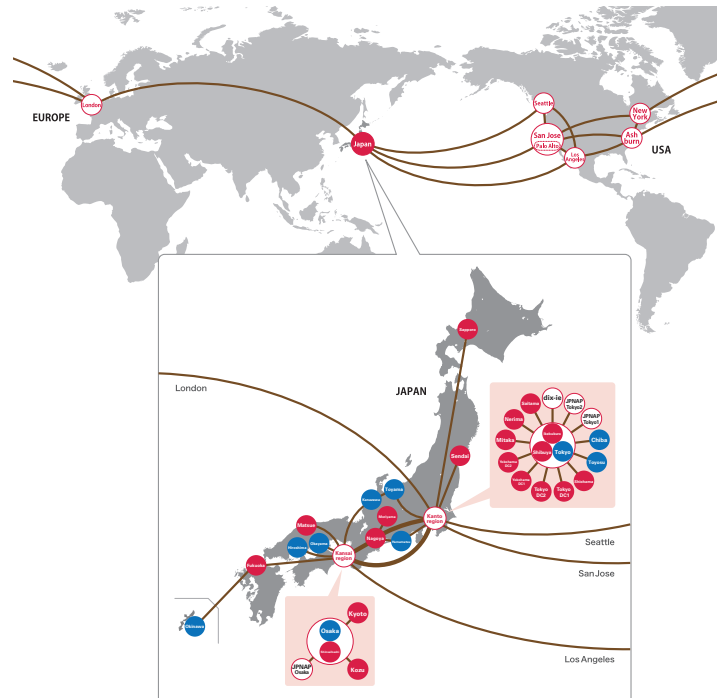


Figure 1: IJ Backbone as of April 2013

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He is engaged in the design, construction, and operation of the backbone facilities that IJ's services are based on.

He spends his days battling to optimize the network.