

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

<i>In the Matter of</i>)	
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Fostering Innovation and Investment in the Wireless Communications Market)	GN Docket No. 09-157
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A National Broadband Plan For Our Future)	GN Docket No. 09-51
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Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers)	WT Docket No. 05-265
)	

**Comments of Japan Communications Inc. and
Communications Security & Compliance Technologies, Inc.**

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INTRODUCTION AND SUMMARY

Japan Communications Inc. (“JCI”) and Communications Security & Compliance Technologies, Inc. (“CSCT”) support the Commission’s inquiry into wireless innovation¹ and appreciate the opportunity to comment. JCI has been a pioneer in bringing wireless communications solutions to consumers and businesses in Japan for more than a decade. As the Commission seeks examples of business models that most effectively leverage new technologies and applications, JCI’s experience in Japan highlights what innovations are possible given policies that encourage competition from data Mobile Virtual Network Operators (“MVNOs”). In Japan, MVNOs like JCI do much more than simply repackage incumbent services. They provide innovative services and products that incumbents cannot or will not offer, such as consumer data services that use multiple networks seamlessly, devices that are sold pre-loaded with minutes of wireless data usage, and end-to-end fully integrated corporate networks. These types of applications have been made possible by Japan’s recognition that broad-based wireless innovation requires significant participation by MVNOs, and its adoption of policies that encourage MVNOs to flourish.

At the same time, the experience of JCI’s subsidiary CSCT in the United States shows some of the barriers to innovation that exist in this country. As the Commission undertakes its examination of wireless innovation, it should study carefully the Japanese model. While adopting the broader reforms Japan has enacted may not be essential or even desirable at this time, the Commission can take several limited steps to improve immediately the prospect for innovation. Specifically, the Commission should require incumbent carriers to offer data

¹ *In re Fostering Innovation and Investment in the Wireless Communications Market*, GN Docket No. 09-157, Notice of Inquiry, FCC 09-66 (rel. Aug. 27, 2009).

roaming at reasonable rates, it should prohibit “no parking” provisions – which allow incumbents to cease providing service to devices found permanently or often roaming on their networks – in roaming agreements, and it should prohibit onerous device certification policies.

BACKGROUND

JCI has been an MVNO in Japan since 1996. Initially, JCI operated largely as a reseller of voice services, as many MVNOs in the United States currently operate. Although JCI’s business grew rapidly, JCI recognized that reselling voice services has a limited horizon both for increased innovation and profitability. Thus, in 2001, JCI partnered with Japan’s largest Personal Handy-Phone System (PHS) service provider, a company now known as WILLCOM Inc., and launched the world’s first data communications MVNO. JCI’s data MVNO model differed from the standard voice MVNO model in that JCI did not (and does not) function simply as a reseller of another carrier’s services. Instead, JCI offered unique and independent services. For example, JCI offered data communications cards with imbedded wireless Internet use packaged for broad retail sale, and a similar imbedded service through PC wholesalers.

JCI was able to provide these differentiated services in part because its billing arrangement with WILLCOM was based on total bandwidth, rather than volume. This approach gave JCI flexibility in pricing services for its own customers and simultaneously encouraged JCI to maximize the efficiency of its network use.

Since 2001, JCI has built on this model and greatly expanded its services. JCI currently partners with the two largest wireless incumbents in Japan, NTT DoCoMo and KDDI, to provide JCI customers with unparalleled access to 3G data services. Today, all of JCI’s customers have access to multiple network types – 3G and PHS networks, as well as Japan’s most

comprehensive network of public wireless LAN spots – providing the widest mobile coverage in Japan.

For individual customers in Japan, JCI offers a simplified and convenient approach to the provision of mobile data services called b-mobile3G. Customers purchase a card that they insert into their laptop computers. The card provides a varying number of hours of high speed wireless 3G data connectivity anywhere in Japan. There are no contracts or monthly billing. When customers' time expires, they are allowed to recharge as needed.

For business customers in Japan, JCI offers a custom-designed service called InfinityCare, which addresses all of a corporation's mobile voice and data services through a single end-to-end framework that combines JCI's expertise in wireless handhelds, wireless mobile network connectivity, device and user authentication, network security, and customer service. JCI services roam and switch seamlessly between a variety of different networks, giving customers uninterrupted coverage with no need to change configurations. Moreover, JCI ensures complete integration of mobile solutions with a company's intranet.

JCI also provides machine-to-machine (M2M) applications. JCI was the first company to offer a dual network solution to ATM (automated teller machine) operators, combining its PHS service with 3G service in a custom router to ensure very high availability. As a part of that same offering, JCI includes its PWLL (Private Wireless Leased Line) service, which is an end-to-end *private* network solution that ensures financial data cannot be stolen or compromised while in transit. This service can reduce ATM operators' average cost for connectivity from over \$800 per month to around \$30 per month, while maintaining security standards for financial transactions. In multiple cases, the carriers from whom JCI buys its bandwidth have requested

that JCI wholesale its products and services to those carriers because the carriers cannot or will not develop services of the same quality themselves.

In addition, JCI has become Japan's preeminent mobile virtual network enabler, or MVNE. As an MVNE, JCI enables its MVNO partners to define their own wireless data pricing and integrate mobile wireless features into their own unique offerings. JCI provides back-office, development, and support services specific to those offerings, so other companies can enjoy the benefits of Japan's MVNO structure.

JCI entered the U.S. MVNO market in 2006, through its subsidiary CSCT. CSCT is a data MVNO that provides private and secure wireless networks. CSCT provides a range of solutions for M2M applications, such as ATMS, kiosks, and Supervisory Control And Data Acquisition (SCADA) systems. For example, CSCT offers a service similar to JCI's PWLL service, providing a PCI certified private network² – requiring no data encryption – for financial transactions. CSCT also provides private and secure wireless networks for enterprises, verifying users and securing data. CSCT provides all of these solutions using incumbent wireless networks, typically offering services and pricing models not found elsewhere in the marketplace.

I. Japan's MVNO Experience

The success of MVNOs in Japan has been due in large part to Japan's adoption of policies that encourage MVNOs to flourish. Japan's MVNO policy changes began with the recognition that the growth rate of its wireless industry had begun to slow in 1998, and that, by 2003, the industry had fully matured. Having determined that wireless innovation was a key element in their goal to reinvigorate their economy and of strategic in value to the country, Japanese regulators from the Ministry of Internal Affairs (MIA) studied, for several years,

² See <https://www.pcisecuritystandards.org/index.shtml>.

various options for encouraging that innovation. They looked to industry groups for guidance in their effort and commissioned a study by financial experts on the potential outcomes of recommendations made by those groups. *See* Attachment A (Nomura Research Institute Report). MIA concluded that opening the door to meaningful competition by smaller, niche-focused MVNO competitors was the best means of encouraging innovation and spurring growth in the wireless market.

As MIA recognized, MVNOs can play a critical role in both innovation and in maximizing efficient use of spectrum. The advent of 3G networks allows MVNOs to package and market a wide variety of data-based services – involving varied forms of mobile commerce, from banking to entertainment – that traditional carriers are simply not positioned to provide.

Accordingly, MIA issued MVNO Guidelines in 2007, which established rules under which wireless carriers would be required to interconnect their networks to MVNO networks. MIA's focus was on facilitating vertical and horizontal integration within MVNOs. To provide that facility, MIA determined that three elements were most important:

- (1) Interconnection at the Data Link level – so-called “Layer-2” connectivity – between facilities-based carriers and MVNOs is required. In other words, MVNOs must be provided a direct connection to facilities-based carriers' networks in order for MVNOs to deliver differentiated, innovative products and services.
- (2) Pricing of that Layer-2 connection should be bandwidth-based (i.e., \$ per Mbps), not volume-based (i.e., megabytes), and it should be regulated. This approach incentivizes the MVNO to use carriers' network resources most efficiently, and it allows the MVNO to create its own rate plans – plans that can be custom built for each customer or offered as a standard service.

(3) Device certification on individual carrier networks is an unnecessary impediment. Carriers should allow any PTCRB³ certified device to operate on their networks.⁴

In the brief time since adoption of these guidelines, Japan has seen some notable innovation and increases in subscriptions to products that incumbent carriers would not or could not have offered. For example, in March 2009, Dell announced that it will become an MVNO in Japan, offering customers Dell notebook computers that come preprogrammed for immediate wireless internet access using DoCoMo's 3G network with eMobile as its MVNE.

In August, Hewlett Packard announced that it would introduce laptops, netbooks, and touchscreen tablets in Japan that come with pre-paid Internet airtime built-in, and feature a one-click, pay-as-you-go system for wireless access, with software and network services developed and supported by JCI. Hewlett Packard customers will have no contracts and no fixed monthly fees.

At the same time, JCI's time-billed consumer service has dramatically increased sales since it has gained access to 3G networks. Particularly given how recently Japan adopted its MVNO guidelines, it is believed that these kinds of service offerings are just the tip of the iceberg.

³ PTCRB is a global organization created by Mobile Network Operators. See <http://www.ptcrb.com/>. CTIA-The Wireless Association is the administrator for the PTCRB certification process.

⁴ Japan is not alone in encouraging MVNO development. Regulators around the world have recognized the vital role that MVNOs play in innovation and in increasing efficient spectrum utilization. See, e.g., Telecom Regulator Authority of India, *Consultation Paper on Mobile Virtual Network Operator* at 2.2.12 (May 5, 2008) ("MVNOs increase capacity utilization of the MNO Radio Access Network (RAN) and can improve spectrum utilization in both 2G and 3G networks, especially important in our spectrum scarce country.") available at <http://www.trai.gov.in/WriteReadData/trai/upload/ConsultationPapers/142/cpaper5may08.pdf>.

II. Observations on the Market in the United States

In JCI and CSCT's experience, it is considerably more difficult to offer innovative data services in the United States. For example, CSCT has encountered some reluctance from national carriers to provide the Layer-2 connectivity necessary to offer innovative data services. Instead, these carriers make available only a one-size-fits-all package which essentially limits an MVNO to reselling the incumbents' services and on pricing plans that mimic the incumbents' pricing.

While CSCT has successfully negotiated appropriate interconnection agreements with some carriers, other aspects of the United States environment make it challenging to guarantee the national footprint or redundancy essential to some of the services CSCT provides. For example, there is presently no requirement that carriers even provide data roaming to other carriers. At least one national carrier insists on a "no-parking" provision in its roaming contracts, meaning a device found permanently or even often roaming on the home carrier's network can be kicked off the network. This makes it very difficult to offer certain applications – particularly M2M applications requiring reliability – that may need to utilize data roaming.

Additionally, in the United States carriers with nationwide footprints and international roaming services generally set data roaming rates at extremely high levels. Specifically, roaming rates are typically set at \$.50 per megabyte. This rate is much higher than a carrier's cost of providing service, in many cases higher even than its retail rates. A comparison with the pricing of voice roaming makes this clear, as the same carrier infrastructure for voice (e.g., towers, base stations, etc.) is also used for data. Depending on network speed and technologies deployed, between one and 40 megabytes of data can be transmitted from a wireless terminal each minute. This means that, using the same infrastructure used for voice at top *retail* rates of \$.10/minute, a

minute of data usage would have a wholesale, inter-carrier cost of *between 5 and 200 times that of a voice application*. Clearly, under conditions of that sort, smaller carriers with limited coverage cannot compete with nationwide carriers in offering data services that require broader coverage. MVNOs, who may find smaller carriers more willing to support innovative business models, are similarly constrained.

Finally, carriers generally require that a device be subjected to carrier-specific certification requirements before that device can be connected to their networks. These requirements can be quite onerous and, at the least, can cause significant delay in providing service. This is particularly problematic for M2M providers like CSCT, who tailor the devices they use for different customers. Delay alone can mean the difference between winning or losing a contract.

At the same time, there is little reason to believe that such certification requirements serve a valuable purpose. Indeed, U.S. carriers allow foreign carriers' customers to roam on their networks, even though foreign carriers' devices have not been certified on any U.S. carrier's network, and, in most instances, have only been subject to generic certification from PTCRB. It makes little sense to subject domestic devices to a more stringent standard.

All of these issues present significant problems for MVNOs, and the Commission cannot expect widespread innovation in data applications until, at minimum, these problems are addressed.⁵ Although consumers' needs and desire for data services can take thousands of different forms, there are a limited number of facilities-based carriers. Indeed, because of the

⁵ These practices not only inhibit innovation, they reduce spectrum efficiency. Economic logic dictates that, where there is excess capacity – which is always present at least at certain times or locations – every carrier would want to “import” as much roaming traffic from other carriers' customers as possible. Indeed, some M2M applications require only short bursts of transmission and can operate exclusively at off-peak hours. It thus makes perfect sense to make use of spare incumbent capacity. Yet current practices dramatically discourage such efficiency.

cost of purchasing spectrum and building the necessary infrastructure in the United States, there are necessarily relatively few facilities-based carriers. These carriers alone cannot deliver applications that will be useful to all consumers or all businesses. Without sufficient access to facilities-based networks, MVNOs are constrained in the products that they can offer.

There cannot be true innovation where the innovator does not control the means, method, and manner of delivery of his or her innovation. Indeed, the success of the Internet is due in no small part to the fact that thousands of individual innovators had this kind of control. To continue that success in the wireless world – and increase wireless growth and innovation – innovators need this kind of control over wireless networks. Otherwise, innovators will go elsewhere, and there will not be broad-based wireless innovation.

Japan – a country that has experienced dramatically more innovative wireless services than has the United States – has recognized that enabling MVNOs to flourish is the best way to ensure broad-based wireless innovation. The Commission should carefully study Japan’s model as it undertakes this inquiry.

While it is unclear whether regulation of the kind imposed in Japan is necessary or desirable at this time, it is clear that the Commission can greatly improve the prospect for innovation by taking some limited concrete steps. Specifically, the Commission should require carriers to offer data roaming at reasonable rates. In the same vein, the Commission should also prohibit “no parking” provisions, and it should prohibit onerous carrier-specific device certification requirements. Implementation of these small steps in the near term while the Commission considers broader reform will greatly improve the environment for innovation.

CONCLUSION

JCI and CSCT support the Commission's goal of encouraging innovation in the wireless market. The Commission should carefully examine Japan's experience in promoting innovation through MVNOs. As the Commission considers broader reforms, it can immediately improve the prospect for innovation by requiring carriers to offer data roaming at reasonable rates, prohibiting carriers from adopting "no parking" provisions in their roaming agreements, and prohibiting onerous carrier-specific device certification requirements.

Respectfully submitted,



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