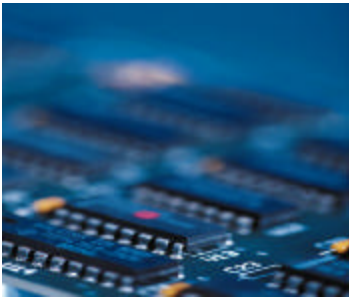


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Gazelle Outlook

Insights into Strategies and Directions

NTT DoCoMo's Dr. YASUHISA NAKAMURA

Dr. Yasuhisa Nakamura,

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Dr. Yasuhisa Nakamura is a widely recognized executive in the wireless industry with over 20 years of unique experience across four continents.

Dr. Nakamura joined NTT Electrical Communication labs doing research in digital radio transmission systems in 1980. From 1986 till 1987, he was invited to join France Telecom labs (CNET) as an invited researcher. He completed his PhD from University of Tokyo in 1991. From 1995 to 1998, he served NTT Central Personal Communications, Inc. as a senior manager and engaged in the development and overseas deployment of 1.9GHz micro-cellular system – PHS. During this period, he was invited as an invited lecturer to the Malaysian Institute of Technology, Malaysia.

Dr. Nakamura joined NTT DoCoMo in Dec. 1998 and served as executive senior manager of PHS business planning division. In March, 1999, he went to Rio de Janeiro, Brazil as a technical director of NTT DoCoMo Telecomunicacoes do Brasil, 100% subsidiary of NTT DoCoMo. He and his staff developed and launched a mobile portal service called WMAP for Brazilian market. He was a lead negotiator with Brazilian Government in introducing GSM system into Latin America region. In June, 2001, he was nominated as a senior vice president of NTT DoCoMo USA. Dr. Nakamura has got more than 50 patents (awarded and pending) and papers on wireless technologies and is a frequent speaker at international conferences. He was a member of TG8/1, ITU-R on FPLMTS (now IMT-2000) and Asia Pacific delegate for radio committee of IEEE. He is a member of IEEE and IETE, Japan. He is considered an expert in dealing with cross-cultural business and technology challenges in the wireless industry as he has the unique experience of working on four different continents.

Gazelle Outlook sat down with Dr. Nakamura to discuss the state of the wireless industry and get his perspectives on where it is heading.

What is your assessment of the state of the wireless industry?

I think Asian countries like Japan and Korea are leading the wireless industry right now and Europe and US are catching up. But one of the most interesting geography is China as their market is just exploding and nobody understands the market well. South America is also a very promising market especially countries like Brazil as the markets have opened up for GSM deployment, so you will see more GSM based technology and solutions entering SA.

The financial debt situation in Europe is very serious and this will delay the launch of 3G there. Operators would like to keep their GSM networks for now, make some money before they can invest in network upgrades. Fortunately, in Japan and in some other Asian countries, these issues and problems don't exist.

In Japan, DoCoMo covers about 45% of the total population with its 3G infrastructure, KDDI covers over 95% as it is based on upgrade to their CDMA system and no additional infrastructure investments required.

I think next year is a very critical year for all operators as they try to figure out their future strategy.

DoCoMo has been pursuing i-mode technology transfer around the world. What are some of the technical and business challenges in implementing such a strategy?

The most important thing is that operators outside Japan need to understand that the success of i-mode is not because of technology but it is because of its business model. It is extremely important

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to have content partnerships before you launch. i-mode is nothing revolutionary from a technology point of view, it uses combination of existing technology like packet network, browser, etc. It is important to think about creating an environment where you can create a viable and thriving ecosystem that supports your business model. So the challenge has been to get this point across.

You are one of the few executives who have worked in four continents (Asia, Europe, NA, and SA). What do you see as differences in consumer and enterprise markets in various geographies - today and in the future?

For consumers, each continent/country is different. For e.g. in Asian countries, the young generation uses their devices to focus on entertainment, South America is sensitive to price as the average income is low. Different approaches are needed depending on the local market and demographics. With respect to the enterprise market, the US market is much advanced, so other countries should learn from US as to how enterprise market is supported and grown. In Europe, people are addicted to SMS messaging. So, lot of the applications revolve around SMS. It will remain important for future.

What are the primary driving forces for upgrade to 3G? Is it justified in today's environment? Or should carriers experiment with 2.5G first to establish business models and appli-

cations?

Good question. Even DoCoMo is struggling with the business equation. From an operator point of view, the cost of supporting one customer in 3G is much lower than in 2G systems; it is more efficient to operate to generate revenues. But a more critical question is how 3G becomes important from a consumer point of view. We need some new killer applications for 3G which can interest the consumers. Video mail is the most interesting new application for 3G. People are already accustomed to email. Video clipping attached to a desktop email is accepted by consumers. Taking the concept a bit further to wireless device is natural, so I think video email would be a popular application in the future.

How do carriers approach and evaluate application developers and their potential?

In case of DoCoMo, we work rigorously with the developers to evaluate the technology and value proposition, and once we decide on working together, DoCoMo works closely with the developer to promote and enhance the application. The developer gets a "DoCoMo Value" certification which means the application is certified and tested. DoCoMo has already given 20 such certifications around the world including companies like IBM. Close partnerships with right application developers is extremely important for carriers.

How does it feel to be from a world leader in wireless data

services? Is DoCoMo perceived as a threat or a partner who can boost their revenues?

It really depends on the culture of the company. Some companies welcome DoCoMo, other companies want to be more independent. Some companies are already included in a consortium with operators like Vodafone. One interesting point to note is that the leading company in each country is reluctant to work with DoCoMo; it is the 2nd or 3rd ranking players who strongly want DoCoMo's support and help in taking over the no. 1. For e.g. in Taiwan, KGT Telecom is no 3 (out of total 4), so KGT is very interested in working with DoCoMo.

The dream of carriers is to have a technology-transparent solution. How can marketing people address this conundrum, when differentiation comes from technology but the consumer should not and do not want to worry about technology?

When DoCoMo started i-mode service in Japan, we never used the term "wireless Internet" to label, promote, or refer to the service. Otherwise people would have thought they would get same type of experience, tariff structure, applications, etc. as in the wired desktop world, so we never used wireless Internet term. We didn't want to confuse consumers. We wanted a new concept, a new term, a new word to describe the service. Many operators around the world make the mistake of using a technical terminology to describe or refer to their services. Technical terms should never be used to explain services. Lot of European and US carriers labeled their services as WAP or wireless Internet service. It's

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just stupid. It's a mistake. People expect too much if you use technology terms. Wireless Internet is the most loaded term.

Gaming has been very popular in Japan. Would it be as popular in the west from what you have observed?

Japanese youngsters don't have anything to do so they play games (laughs). They prefer games rather than read books. I think gaming will be successful in the west but we got to be careful in considering local factors. Characters from Disney or Pokeman are universal for all kids in the world, so I am optimistic that gaming applications will be accepted not only in Asia but all over the world. Also, sophisticated technologies such as J2ME will dramatically improve the capability for the application.

What do you see as some of the trends in machine-to-machine communications?

M2M is very important for the future. DoCoMo in its Vision for 2010 has laid out three types of communications: human-to-human, human-to-machine, and machine-to-machine. M2M market is very small right now but in 5-10 years there will be a huge market especially for telematics.

In your opinion, how has globalization impacted the wireless industry?

The globalization impact on wireless industry has been great. There are pros and cons. The pros are that us-

ers enjoy cheaper and better products and services due to scale merit of the global market. As for the industry, it fosters immense competition. Initially, companies used to work only in their territories, but now to sustain and grow, they have to compete globally. The trend will continue in the coming years. Only 2-3 players can eventually survive and be leaders, others will be consolidated into the market.

Why do you think i-mode has been so successful?

When i-mode started, DoCoMo had perfect coverage of the PDC packet network which was already there and ready nationwide. Compare this to services like GPRS service in the US where service came first and the infrastructure is coming later. People are not that interested right now as they are worried about the coverage and service. At a minimum, service and coverage should arrive in the market in parallel.

What are some of the misconceptions in the west about i-mode and its success?

Western analysts often point out that the success of i-mode is due to some several special characteristics and environment in Japan, such as:

Japan is pedestrian-centric country,

The penetration rate of PCs in Japan is very low, so people have to use a cell phone instead of PC for Internet access; the Japanese language is different from English, and others.

Above is partly true, but mostly false. For example, most of Japa-

nese, who live outside of metropolitan areas such as Tokyo or Osaka, commute by car just like people in Seattle or Los Angeles. It is only in areas within Tokyo and Osaka, where people mainly commute by trains and subways. This kind of misunderstanding stems from the fact that 99% of westerners visit only Tokyo or Osaka and derive their conclusions after a week's stay in these cities.

The thinking is analogous to someone generalizing life in US after a week visit to Manhattan, NY. The lifestyle in Japan is very similar to western countries.

In Japan, PC sales in 2000 reached 13 million and the penetration rate of PC (desktop and laptop) in 2002 is quite high, higher than in Spain or France.

Now, let's consider the language situation in Japan. No doubt, it is different. Japanese languages are composed of 3 different character sets and they are always mixed for use. This is what makes it so complicated. Does success of i-mode has something to do with Japanese language? Some analysts try to link language with i-mode, but then, how do we explain the fact that thousands of foreigners in Japan have also become addicted to i-mode? They are e-chatting or e-mailing or e-surfing in English or Portuguese (all of i-mode phones are bilingual now). Consumers can also enjoy English content such as news from CNN, Bloomberg, Dow Jones and of course Disney. Nokia provides three content services in English namely Tokyo-Q, Tokyo Food Page, and Tokyo Wine News for i-mode. Brazilians can get the soccer and Latin music information in Portuguese with a service called POKEBRAS free of charge and is extremely popular. This indicates that the Japanese language has no relationship with i-mode's success.

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Amidst all the chaos in the wireless industry, what do you see as some encouraging signs?

I think the cellular service and automobile are the two biggest inventions of the 20th century. People don't leave home without car and a phone not only for business - that is common across cultures and languages. We need cell phones because it is a lifeline for communication. Short term -- there are ups and down but in the long run, the future is very positive because everyone needs a cell phone so I am very optimistic about the future of the industry.

Is WLAN threat to WWAN?

We need another 6-12 months to sort that out. WLAN has created an interesting disruption in the wireless industry especially in US, not so much in Japan. I remember how Internet pervaded our lives from nowhere and now it is everywhere. Such phenomenon could also happen with WLAN. My personal opinion is that WLAN and WWAN are complementary because each system has a different purpose and customers will decide what to use in a given situation. From a technical viewpoint, converging the two is not difficult; you can easily make dual mode data cards and chipsets. But the challenges are security, authentication, billing, and roaming between the two systems. If such challenges can be overcome, the combination will provide a perfect solution for the end user that they will really like.

What advice would you give to

small to mid-size players entering the US markets?

DoCoMo is a big player in Japan but a small player in the US. We have a short history here of only 2 years. We ourselves would like to get some advice.

What wireless data applications do you think have been most successful?

Let me give you an example of my daughter, she is a 17 year old high school kid. She checks her email twenty-four hours a day. So you can see what kind of addictive application email can be. For the time being email and chat are most popular applications.

DoCoMo has laid out its vision for year 2010. What's the gist of the message?

The message is similar to what I said before -- Wireless everywhere. Wireless will continue to improve security and quality of life and efficiency in business activity. DCM has a clear vision and wants to convey to the world that wireless can contribute to improving quality of life.



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