



Netcore CEO Rajesh Jain: 'In India, the Future of the Internet Will Be Built around the Mobile Phone'

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Rajesh Jain has a lot in common with Marc Andreessen, co-founder of Netscape. Just as the Netscape IPO in 1995 is widely believed to have sparked the Internet boom in the U.S., Jain ignited a dot-com storm in India when his portal -- IndiaWorld -- was sold in November 1999 for \$115 million to Sify, an Internet service provider. That deal signaled to millions in that country that the web was not just a passing techie fad and that entrepreneurs could make serious money from it.

In recent years, Jain, 39, has deliberately kept a low profile in the media, though he makes his views on technology issues widely known through his blog, [emergic.org](#). Jain, who is now the CEO of Netcore, a Linux-based messaging software company, was a panelist earlier this year at the 2006 [Supernova](#) conference in San Francisco. He met with Knowledge@Wharton in his offices in Mumbai to discuss how mobile phones could hold the key to the Internet's evolution in India and other emerging economies.



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Knowledge@Wharton: You were among the first entrepreneurs in India to recognize the potential of the Internet when you launched the IndiaWorld portal and websites like [khoj.com](#), [samachar.com](#), and [khel.com](#). What was your assessment of the infrastructure of the web at that time, and how does it compare with your view of the Internet in India today?

Jain: When we launched IndiaWorld in March 1995, commercial Internet access was not available in India. In fact, the portal that we launched at that time was essentially meant for Indians who lived outside the country. Commercial Internet access in India became available in August 1995. So initially we had to dial the U.S. in order to upload our content; we had our servers there.

Since then, of course, the Internet has grown quite a bit in India, but I believe that it has two real shortcomings. One is the low PC penetration and limited broadband, which really restricts usage of the web. Many reports indicate that India has some 40 million users of the Internet, but almost three-fourths of them access the web through cyber cafés. This limits the number of services they can use because they are paying for every minute. In such circumstances you can't build your digital life around online services.

The second problem is that the services that are available on the Internet in India are still very limited. If you go beyond the news, email, and those kinds of things, they still don't touch other facets of daily life. As a result, the Internet still hasn't become a utility in people's lives. Some services have done well in India -- activities such as online matrimonial ads, employment ads, and even online stock trading. I think the real opportunity in India is around what I would describe as local information. I can search for global information, but it's still very hard for me to find local phone numbers or find stuff in my neighborhood.

Knowledge@Wharton: If the Internet has not yet become a utility in people's lives because of the low PC penetration, what does this mean for the future?

Jain: I believe another dimension will define the future of the Internet in India, and that's going to be built around the mobile phone. Given the way that mobile phones have taken off in India during the past four to five years, I am convinced that more people in India will access the Internet through mobile phones than through computers linked to narrowband or broadband connections. We need to start

thinking about the mobile Internet differently than we do about the PC Internet.

For me, three words help define the mobile Internet. They are: now, near and new. "Now" is about what is happening right now in real time. Wherever I am, I can find the latest cricket scores or the top news stories because my mobile phone is always with me. "Near" is about location -- it can be as small as a neighborhood or it could be a city. If I'm about to take a flight this evening, could I get an alert on my mobile phone if the flight is delayed? Some of this is starting to happen, but it needs to happen a lot more. It could make a real difference to people's lives. Finally, "new" is about new stuff in which I might be interested. Just as a search engine like Google is a good way to find material that has been published in the past, the mobile phone is a great way to keep in touch with future or incremental content. If there is a sale, it should be possible for my book store to send me an alert and suggest business books that I might find interesting.

In other words, the shape of the Internet in India going forward could be rather different than it was in the past. The closest analogy I can think of is Japan during 1999-2000, when NTT DoCoMo's i-Mode wireless Internet service took off. That happened because it was an open platform. The challenge is to open the mobile platform to content and other service providers. That's one thing that needs to change.

Knowledge@Wharton: How large is the PC-based Internet platform in India and how does that contrast with the mobile platform?

Jain: In India some 10 million people have access to a PC either at home, or at work, or both. For them, accessing the Internet is much like it would be for someone in the U.S. For example, I would be in this category. You can carry out a lot of your conversations on email, and if you need to check anything on the web you just do it because you have a constant broadband connection at home and at work. It's an always-on connection. That's only for 10 million people at the top of the digital pyramid. This is the "PC first" segment.

In the middle of the pyramid are 30 million people who access the Internet through cybercafés. The price point today hovers around 15-20 rupees [35-45 U.S. cents] an hour. But you cannot build your digital life around cybercafés. You might access the web for a couple of hours a day to check your email or send out your resume, but it doesn't become a basic part of your life because you are disconnected from it for most of the day. That is where the mobile phone comes in. It is a device that these people have with them all the time -- and they use it not just to talk but also to send text messages and so on. Most students are in this category. This is the "mobiles first" segment.

At the bottom of the pyramid are about 70 million people who have mobile phones but who have no access to computers, mostly for economic reasons. For them, the mobile phone is their primary device to connect to the world. This segment uses pre-paid mobile services; this is the "mobiles only" segment, and it is growing rapidly.

Knowledge@Wharton: How rapidly is the mobile platform growing in India?

Jain: Today India has more than 110 million mobile users -- and this is growing by 4 million to 5 million a month. ARPUs [average revenues per user] are at around \$7 per user a month and falling. Nearly 75% to 80% of mobile customers in India are pre-paid users. Another important parameter is that about 75 million users have GSM ["global system for mobile communications" cellular network] connections and 25 million have CDMA [code division multiple access]. Of the GSM base of 75 million, there are about 2.5 million to 3 million GPRS [general packet radio data service] users, even though there are about 25 million to 30 million GPRS-capable handsets. People have not activated their GPRS connections and they are not really using them for mobile data services in terms of the Internet and related services. They are limiting it to voice and SMS ["short message service" text messaging] and perhaps a few other features, such as using the camera.

One of the mistakes we have made with telecom policy in India is that we haven't unbundled the local loop. The government-owned telecom firms -- Bharat Sanchar Nigam and Mahanagar Telephone Nigam -- control about 45 million lines. In contrast, in China they set up a different company for the mobile business.

Knowledge@Wharton: What implications does the growth of the mobile platform in India have for

content providers?

Jain: I think for content providers the mobile internet really is *the* opportunity. This is not just about scaling down pages you could access through a PC to a small screen. It means thinking about how a connected device in the hands of tens of millions of people could make a difference. It involves the whole issue of user-generated content, since these devices support the ability to take photographs or videos and share these with other people. For example, you could have citizen reporters take pictures of traffic jams and ask people to avoid certain routes -- and other people could subscribe to such services. Today this is reported on FM radio but the reach is still very limited. Content providers should be thinking about innovative services that are relevant in the Indian context, knowing that there is no broadband legacy and also realizing that almost every user of the mobile phone can be both a producer and consumer of content. Many interesting opportunities can be created out of that.

Knowledge@Wharton: Where do you see opportunities for software and telecom companies?

Jain: For software companies, the opportunity is to build the technologies required for some of these services. India could become their test market, and then these services could be rolled out to other emerging markets. When it comes to the mobile data infrastructure, India is comparable to some of the best in the world, not just for voice but also for mobile data. Part of the problem on the software side -- and to a certain extent on the content side -- is that unlike the Internet, mobile is still a closed platform. This means that for software firms, the primary customer is not the mobile user but the mobile operator, and operators have a choice of buying software locally or globally. So it's a great opportunity today to start looking at technology platforms both for consumers and for enterprises.

The telecom companies and mobile operators need to start looking at value-added services. Average revenues per user are falling even though the customer base is growing dramatically, and there is enough room for growth. The user base of 100 million today will probably grow to 250 million in the next couple of years. What is important now is that operators should start thinking about creating an ecosystem that allows content providers and software companies to thrive in this environment. That is what NTT DoCoMo did in Japan with its i-Mode service -- it built out the ecosystem.

Operators are in a strong position. They have a virtual monopoly and they can control what users of their services can access through data connectivity. What they should realize is that by opening up and by enabling innovative services to come up, the usage of these services and therefore their revenues will increase. Here, again, studying the i-Mode example could be productive. The challenge for operators is that today 85% to 90% of their revenues still come primarily from voice services. They are primarily focused on customer acquisition right now. They see the user base growing to 250 million in a few years, and they are trying to figure out how to capture 25% of that market. As a result, though a lot of new services are coming up, not much attention is being paid to that. This whole ecosystem approach is what is missing in India.

So, to sum up, for content providers the challenge is to think through how to create innovative services based on the recognition that mobile phones are basically two-way multimedia devices. For software companies it's about building the technology platforms to enable services. And for telecom companies, it's about innovating and building an ecosystem for value-added services.

Knowledge@Wharton: Lots of private equity and venture capital funds are now looking at India. Where are the most interesting opportunities for entrepreneurs, especially in the mobile market? Which opportunities are these investors missing?

Jain: There is a lot of interest in India right now. India is seen as the next China, in terms of venture capital and private equity investment. The focus of most of the venture capitalists I have spoken with seems to be on the consumer Internet and the mobile market. Having said that, there don't seem to be too many companies in which the VCs can invest. Most VCs are looking at investing \$3 million to \$5 million, but a lot of the start-ups actually need investments of \$1 million. Given their fund sizes, it's difficult for VCs to have lots of these \$1 million investments. That is their challenge.

I believe we need a new approach to venture capital in India. There is a very limited legacy, so it's not going to evolve the way the U.S. did or even perhaps the way China did. In India there are lots of gaps

across multiple value chains. Sometimes a service fails to take off because some parts along the value chain are not appropriately digitized. What ought to happen is a large amount of investment across building out an ecosystem of companies. Instead of waiting for an entrepreneur to come up with a business plan, venture capitalists need to be much more proactive. They should say, "The capital is available, now let's find a CEO for this business and back that person with funding. Let's start multiple companies based on what we have seen in other countries, and what we think the opportunities are in India."

This is a very different, inside-out approach, where you end up flipping the model around. That requires much more work. It will not work if the core venture capital team lives abroad and just comes to India once in a while. We need people on the ground who understand the realities of India today, who understand how the technology is evolving, and who can make bets on what the future is going to be.

Sometimes the VCs tend to behave more like private equity firms by investing in companies that don't need the capital, or which are pre-IPO companies. For example, the investment by Kleiner Perkins into Naukri.com [a job-search web site] was a pre-IPO investment. There was really nothing "venture" about it. Westbridge's investment in Times Internet was of the same type. Those things need to change. You need to really get in there, work with people and focus on building out the ecosystem. Most of these things don't exist, and that's the great green-field opportunity across this space. How can education be done differently with digital technologies? How can health care be done differently? We need to look at different industry verticals and think about how to transform them given the presence of broadband, of computers, of mobile [devices], of software sitting on the network. We need to rethink how business gets done. I think that is the real opportunity.

Knowledge@Wharton: What are the principal risks?

Jain: This is a "build-it-and-they-will-come" approach. If you build it and they don't come, that's a problem. If you are too early, you lose. If you are too late, you lose. The risk is that you may be too early or too late. But that's what all the great successes in the entrepreneurial world have faced. You need luck on your side also to make it work. Basically as an entrepreneur, you have to live in the future. You have to imagine what is going to happen. You have to create the future and make others come to it.

Knowledge@Wharton: What work are your companies doing in these areas?

Jain: Our focus has been on two areas. First, how do you build the mobile Internet right for emerging markets like India? And second, how do you rethink computing in a world where broadband exists? Netcore does a lot of work on the mobile Internet, and another company that I helped co-found, called Novatium, looks at network computers. We have taken an old idea but are trying to apply it in a different context. Yet another company, SERaja, is building out the EventWeb, an experiential search engine for events. And Rajshri Media creates rich media content for distribution to global audiences via mobile devices and broadband.

Knowledge@Wharton: If the broadband infrastructure were to improve dramatically five years from now, could that disrupt the growth of the mobile platform in India?

Jain: I don't see that happening. My view of the future is that there will be two screens in people's lives: a small screen that they carry around and a large one that is available to them at home, at the office, or through cybercafés. You need both. Connectivity should be available wherever you go through wireless networks. You could have all the applications, content, services stored on the Net so that you could access all your stuff regardless of which device you happen to be using.

As the world moves toward a 3G environment and Wi-Fi networks proliferate, the importance of the mobile device will grow dramatically. India could lead the world in these services -- if we do it right.