Lenovo's Mobile Phone Strategy:
Using Open Source to Compete with the Top Three

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Abstract:
Lenovo, China's largest computer retailer, is also a mobile phone manufacturer, relatively unknown outside China (with only 7% of the Chinese market share). Today, it is hard for Lenovo to compete with larger global handset manufacturers like Nokia and Motorola on features, styling and carrier relationships in North American and European markets. In this paper, I suggest that there might be an alternative way for Lenovo to capture market share in Europe and North America, by working with the open source community to release completely open, moddable mobile phones. I further propose that given Lenovo's position in the global market, it may be a more opportunistic business move to create a strong community of lead users and application developers rather than yet another proprietary software infrastructure.

Lenovo as a Handset Manufacturer:
Lenovo is China's largest computer reseller, and received international recognition about a year ago when it acquired IBM's desktop and laptop computer business worldwide. Lenovo's strength is primarily in manufacturing hardware at low cost.

As a mobile phone manufacturer, Lenovo has its largest presence in China. Lenovo sold about six million handsets in 2005, capturing roughly 7% of the Chinese phone market in the process. The last two years have seen dramatic turmoil in the Chinese handset market. Nokia and Motorola have remained on top (Nokia accounted for more than 25% of the Chinese market in 2005), but several domestic phone manufacturers like Kejian, Panda, and DBTEL have perished. Lenovo and Bird, two Chinese manufacturers have competed neck-to-neck, and each has roughly 7% domestic market share today.

In 2005, the stylish Motorola Razr was the the worlds most popular mobile phone model. In this context, it would be fair to say that Lenovo's styling is still short of leading global brands. Similarly, Nokia has managed to build an entire ecosystem of applications and services around its Series 60 smartphone platform. Most Chinese phone manufacturers have struggled with features and applications, and have not been as successful in creating such a user-centric ecosystem around their phones. Lenovo's innate strength is in low cost hardware manufacturing, and less in software development. With this realization, Lenovo licensed Nokia's Series 60 smartphone operating system for its phones in the
Chinese domestic market. Fig 1 shows Lenovo's P930 phone, running Nokia's Series 60 OS and application suite, released in China.

Figure 1: Lenovo P930 mobile phone, running Symbian Series 60 licenced from Nokia for the Chinese domestic market. This is an example of how Lenovo has struggled to create an application ecosystem and user community, and has turned to Nokia and Microsoft for operating system software and applications. (photo by slashphone.com)

Lenovo has publicly stated that it aims to be one of the top three mobile phone manufacturers worldwide in the coming years. The first step towards this goal is to capture 10% of the Chinese mobile phone market in 2006. However, given Lenovo's position in today's global market, it is clear that this long-term goal will require a remarkable change in the outlook and capabilities of the organization. The big three have typically relied on strong styling, handset features, phone applications and commercial relationships to maintain their market domination; for Lenovo to aggressively compete along the same lines will be tough.

However, there is an alternative scenario; instead of competing with the big three on their traditional strengths, Lenovo could leverage a previously ignored market force, the open source movement. By enabling open source developers to create an open (and secure) mobile software platform around their low-cost hardware, Lenovo could perhaps build the largest community of users and application developers in the mobile phone industry, and convert that to significant market penetration.

The Open Source Movement

The open source movement has been at the forefront of several mobile device initiatives over the last decade. The Familiar project, Handhelds.org, Zaurus User Group, Open EZX, Python on Series 60 are just a few of the many projects working to create operating systems and application software for mobile devices like the iPaq, Zaurus and mobile phones. A few of these projects have been backed up commercial entities, most came about as a result of lead users (mostly Linux users) or research groups
that decided to innovate with their mobile devices.

With the average smart phone about as twice as fast as a Pentium I computer\(^1\), it is an increasingly attractive platform for open source development. As described elsewhere\(^2\), there is commercial value in creating mass-market open source phones. The most important perhaps is power in the hands of lead users, which allows them to take a proactive part in developing commercial-grade applications for mobile phones, cutting across vested interests and current choke-points in the industry.

**Strategic Advantages for Lenovo**

The open source movement on mobile phones provides Lenovo with a mechanism to compete with leading manufacturers without completely overhauling its core competencies. Lenovo has the ability to manufacture hardware at competitive costs, but their mobile devices have lacked a high quality operating system, broad range of application, and perhaps the most important of all, a strong user community; the open source movement has these very complementary strengths. If Lenovo released open source phones, they would have the advantage of a massive developer and lead user community, potentially even greater than what Nokia has achieved with its Symbian Series 60 platform in Europe. An open, Linux-based *moddable* phone, would make Lenovo instantly popular with certain segments of the North American and European market.

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<th><strong>Lenovo Mobile</strong></th>
<th><strong>Open Source Movement</strong></th>
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<td>Low cost hardware</td>
<td>Lead User community</td>
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<tr>
<td>Commercial distribution</td>
<td>Reliable &amp; Robust OS</td>
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Lenovo’s approach to collaborate with open source software would in some sense, be similar to Sun or IBM’s approach, albeit with a different final objective in mind. While IBM has released its intellectual property and works with open source software to essentially move up the value chain in the consulting business, Lenovo would be using open source to create a user community and hence penetrate the

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1. Most Nokia and Motorola smartphones use StrongARM or XScale processors, typically above 200 Mhz
2. See 15.351 class paper 1, “The Open Source Mobile Phone”, Madan 2006
North American and European markets. At the same time, Lenovo will benefit from a robust and reliable operating system. Lenovo will have to invest some of its internal resources in integrating open source software with its phone hardware and also creating incentives for open source developers (similar to Mark Shuttleworth's Ubuntu), but the costs for these will be significantly lower than creating an entire operating system from scratch.

Perhaps the most sticky result of working with open source developers will be the diverse range of resulting applications. As seen with other open source mobile computing projects, empowering lead users ensures a broad range of applications of various types – web, mobile entertainment, enterprise and consumer. By working with open source, Lenovo could become a cult brand in mobile devices with technology savvy users and early adopters.

**Potential Challenges:**
There are at least two primary challenges that Lenovo will face in the process of integrating an open source software infrastructure within its current business model.

The first will be adapting open source code to work efficiently with its mobile phone hardware. For Lenovo, this development effort could come about in multiple ways:

1. Direct contributions from open source developers towards features, compatible device drivers etc.
2. Lenovo creating incentives for open source developers to tackle essential bits of software development, similar to Ubuntu approach.
3. Lenovo allocating internal engineers and developers to complete essential, go-to-market, open source code, similar to IBMs approach.

As with other open source projects, Lenovo will need to ensure that the open source operating system and application framework on its mobile phones is robust, secure and resistant to viruses and other attacks.

The second challenge that Lenovo may face in North American markets is resistance from more network operators like Sprint, Verizon, and T-Mobile to supporting open source phones on their network. One entry strategy would be to launch in European and Asian markets, where carriers
typically have less control over consumer phone preferences. Popular success with technology savvy consumers and lead users in these regions will create a similar market awareness for open mobile phones in the USA, which will allow Lenovo to launch its handsets in the North America. Working in Asia and Europe will also provide Lenovo with an opportunity to verify whether open source mobiles phones really have any security shortcomings as compared to proprietary mobile phones from a network operator's perspective.

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Sources of Information (Media)