Beyond Smartphones

Lenovo's Skylight smartbook will be available in April

They go by a variety of names: netbooks, smartbooks, mobile Internet devices, and booklets. Here's what you need to consider in evaluating these next-gen mobile platforms.

By Peter Rysavy

Smartphones pack a whole lot of computing power** into a small device. But no matter how smart these phones get, they have their limitations, small screens and unwieldy user interfaces among the most obvious. At the other end of the mobile spectrum, notebooks sport the perfect user interface, but they're heavy and cumbersome.

Enter the in-between platforms: devices that are smaller and lighter than notebooks and more capable than phones. Netbooks are the first success story here, but other devices, with names like smartbooks and mobile Internet devices, are about to be released.

As you evaluate these new platforms, ask these basic questions: Which operating system will you use? Whom will you buy from? What kind of service plan is right for your business? Should you use 3G, Wi-Fi, or both? How does phone tethering figure in? And what kind of security do you need? *InformationWeek Analytics'* "Mobile Broadband: Be-

yond Smartphones" report provides insight into all of these areas to help you decide which device is best for your company.

How To Pick Your Mobile Platform

A useful way to think of these platforms is either as supersized smartphones or downsized notebooks. If you're downsizing from a notebook to a netbook, there's a good chance you'll use some of the same apps, like Microsoft Office and Lotus Notes, on a Windows device. But if you're upsizing from a smartphone, you'll expect an instant-on capability and a battery life that gets you through the day, and you'll likely be OK with a non-Windows OS.

Netbooks weigh about three pounds—half as much as notebooks. They typically don't have CD/DVD drives. Their processors aren't as powerful as notebooks, so you won't be editing photos and videos; you may even have difficulty playing videos. And don't expect to work on a large number of applications simultaneously.

Wi-Fi functionality is standard on netbooks, and many models have an embedded 3G modem. They typically have 10-inch screens with 1,024-by-600 resolution. Hard drives range from 80 GB to 250 GB, and solid-state drives will become increasingly common. Though SSDs cost more and have lower capacity, currently maxing out at 64 GB, they use less power and make for more durable systems. Netbook keyboards are more compact than those on notebooks, but they're still highly usable. Battery life varies. With continual but light usage, you might make it through the day. Prices range from $300 to $600. Intel's Atom chip, designed for netbooks, is driving most of the ones on the market. It consumes very little power and costs less than notebook processors.

Qualcomm's Snapdragon chipset is aimed at smartbooks, which should start to show up this year. Smartbooks combine key attributes of smartphones, notebooks, and netbooks to produce a device that's always connected, ultraportable, and Web-centric. They'll be smaller

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than netbooks and have longer battery lives and instant-on capabilities. Linux and Google Chrome are the likely operating systems, though Windows will be prevalent as well. Vendors are giving these devices different names. Intel is calling them "mobile Internet devices," Qualcomm is using the term "smartbook," and Nokia has coined the term "booklet."

With the Atom chip, Intel is pursuing a dual-stack strategy, including both Windows and the Moblin Linux implementation. Linux will be used in a tangled weave of other implementations, including the Open Handset Alliance's Android, Sun Microsystems' JavaFX, Palm's WebOS, Adobe's Flash, and Nokia's Maemo and Trolltech QTopia. Because Linux is highly fragmented, expect versions backed by giants like Google and Intel to be the ones that dominate. Apple has just introduced its iPad tablet and could become a strong presence in the subnetbook world as well.

In deciding which type of device to use, consider whether you need to run local applications or can work via the Web. Local apps will in most cases favor netbooks and Windows, whereas cloud-based computing will make Linux devices more feasible. As for size, the more users have to "create" on the device, the larger a display and keyboard they'll need.

Where To Buy?

You can buy netbooks from wireless operators. If you commit to a two-year service contract, you'll get a discount on the device. For example, the Hewlett-Packard Mini 110 from AT&T is priced at $199, compared with $299 from HP. Of course, two years of service will set you back at least $840.

Different Devices, Different Options

PLATFORM	COMMON OS	TYPICAL FEATURES OFFERED	PRICING
Notebooks	Microsoft Windows	> Broad range of configurations > Wi-Fi standard; embedded 3G optional	$500 to $2,000
Netbooks	Microsoft Windows, Linux	> 10-inch screens, 1,024-by-600 resolution > CD/DVD drive not included > Scaled-down keyboards > Often better battery life than notebooks > Wi-Fi standard; embedded 3G common	$300 to $600
Smartbook	To be determined, but Android and Google Chrome OS likely	> Likely slightly smaller form factor than netbook > Instant-on > Longer battery life than netbooks and notebooks > Wi-Fi and embedded 3G standard	Likely to be $200 to $600

But businesses are likely to require more flexible customization options and professional-grade versions of the devices than the wireless operators offer. For example, the HP Mini 110 from AT&T only comes with Windows 7 Starter Edition, Microsoft Works, and Microsoft Outlook Express. Business users will need to view PowerPoint files and use Outlook for e-mail.

Service plans from the major mobile operators are relatively expensive—a netbook data plan with a 5-GB cap runs twice as much as a comparable smartphone plan. AT&T, Sprint, and Verizon charge $60 per month, while T-Mobile charges $50.

These prices are high, especially compared with overseas rates. In the United Kingdom, you can get a 5-GB capped plan for 15 pounds ($23) per month. U.S. rates go even higher when overage charges are added.

AT&T, T-Mobile, and Verizon recently rolled out lower-priced netbook plans. AT&T offers $35 per month for a 200-MB plan, T-Mobile charges $30 for 200 MB, and Verizon has a $40 plan for 250 MB. A 200-MB plan is reasonable for e-mail (not too many Power-Point attachments, please) and some enterprise applications. But data-intensive apps, especially video, will consume this allotment very quickly.

Our recommendation: Install bandwidth measuring tools, such as Hagel Technologies' DU Meter, to assess usage before you commit to a lower-priced plan. Operators provide monthly usage stats, but this information lags by a day or more. In our experience, prudent use of e-mail will consume no more than 5 MB to 10 MB per day. Active Web access can bump usage up to 10 MB per

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hour, and video will have you using 200 MB to 1 GB an hour, depending on resolution.

Wi-Fi Or 3G?

It's becoming the norm that all devices, from smartphones to netbooks, support Wi-Fi and mobile broadband. With the mobile broadband capacity crunch, cellular operators are more than happy to offload heavy data users onto Wi-Fi. AT&T, T-Mobile, and Verizon all provide free access to their Wi-Fi hotspot networks for customers paying the $60 a month for a wide area mobile broadband plan. Sprint doesn't offer anything comparable.

If you can find enough Wi-Fi coverage for your netbooks and smartbooks, then by all means ditch the mobile broadband plan and save a heap of money using Wi-Fi. But be aware that highly mobile devices will be prisoners to their enterprise network and hotspots. And many hotspots will require additional service plans from the likes of iPass and Boingo Wireless, though these are considerably less expensive than 3G plans.

Wi-Fi is going to play an important role whether you're working in Wi-Fi-only mode or combining wide area and Wi-Fi. 3G is fast, but Wi-Fi is almost always faster. And for users on constrained-usage plans, Wi-Fi will be useful for bulk transfers of data and huge items like Windows service packs. The bottom line is that using Wi-Fi only is much less expensive, but for the broadest coverage, you'll need a wide area plan.

What About Tethering And Security?

Tethering, where you connect your phone to your computer via USB or Bluetooth, can help make these new mobile devices really pay off. Many of the connection managers that operators provide to control PC cards and embedded modems in these devices also manage tethered connections. It's not something end users will figure out, but it's well within the capabilities of the average IT manager.

Tethering can be as fast as dedicated modems, though

performance improvements usually roll into modems before phones, so speeds might be different. Be sure to check tethered-connection throughput so you're not surprised.

AT&T, Sprint, and Verizon all support tethering. T-Mobile doesn't officially support it but also doesn't do anything to prevent it.

HP's Mini 110 comes with limited options

As for the cost, when adding a 5-GB tethering option to the phone, the monthly cost will be the same as for a modem plan—$60 a month. But this can represent a huge savings if users already need data plans for their phones, because the same data plan can support both the phone's data usage and the computer's usage. Tethering is particularly useful if users only occasionally need 3G for their devices.

When it comes to security, smartphones are complicated, and emerging mobile platforms will be even worse since they hold so much more data and can access a wider range of enterprise data. If your mobile users are already using VPNs to secure their laptops, then consider using the same software on Windows-based netbooks. As non-Windows platforms become established, VPN clients for them are likely to become available.

For Web-based applications, a Secure Sockets Layer-based VPN is effective because it only needs the SSL capability found in all browsers. You can also expect various mobile management platforms to support these new devices with features like software updates, end-point control, and the ability to neutralize lost devices.

Security, tethering, Wi-Fi or 3G, Windows or Linux, whom to buy from, what to buy—there's a lot to consider when planning your company's next mobile platform. But it's worth the effort. You'll be able to provide mobile employees with devices that are smaller and lighter than notebooks but way more functional than smartphones. There's a lot to consider, but also a lot of potential payoffs.

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