



Technology Brief...

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Securing Laptops from Government's Eyes

Recently a US Federal Appeals court essentially gave the US Government carte blanche permission to check any and every piece of data on personal laptops belonging to travelers passing into the USA at border control checkpoints. This decision also allows the government to confiscate the laptop for an unlimited period of time and with no recourse for the owner of the device. Most laptop owners have nearly everything about them stored on their hard drives, including financial info, pictures, emails from a variety of sources, and of course work related, sensitive information.

This case highlights the need for every enterprise, and any individuals that travel internationally, to make sure that their hard drives are encrypted. Further, it is imperative that a backup of the data on the drive be made and left in a safe place in case the government decides to confiscate the user's machine (although this is an unlikely scenario, it is nevertheless possible). Given that typically 50% - 75% of critical business information is stored on user PCs, and often never backed up, the potential for disruption if an executive's machine is confiscated is alarming.

We do not believe that the typical password login protection is sufficient to mitigate this risk. Any company with international travelers should initiate the following steps immediately. First, companies should deploy a laptop security suite (e.g., Sybase Afaria, Credant, Trust Digital, PGP, RSA, Utimaco) if there isn't one in place already. Using this technology, companies should enable a secure storage capability on each device by turning on and maintaining file encryption. It usually isn't desirable to do whole disk encryption (available within Windows XP and Vista), as this could cause performance issues. But specific files of sensitive information should be selectively encrypted. Next, make sure that all data files on each laptop are backed up to a server or a portable hard drive provided to the end user with appropriate "nagging" to make sure the user performs the back up regularly. Automated tools are available to accomplish this at a reasonable cost, often within the same security suite deployed for encryption. Finally, inform every traveler of the new rules and make sure they understand that the new security regimen is not optional.

We estimate that 75%+ of corporate laptops go unprotected beyond passwords, despite the risks inherent in losing and/or having them stolen

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and with the consequent data loss. This action by the US government may finally force the majority of companies to re-evaluate their lax attitude towards laptop security and provide a robust and secure environment for their users. This ruling does not only apply to laptops. Smart Phones, including BlackBerries, are also included in the powers of review and seizure. Companies should take all necessary steps to secure them as well, although users of many wireless email solutions (e.g., BlackBerry, Good, Sybase, MSFT Direct Push) already have higher levels of built in security than the majority of enterprise deployed laptops, including the ability to do a remote wipe of the device, which many security suites also enable.

Although the risk to individuals of data snooping or laptop loss because of this government ruling is minimal, it nevertheless does represent a real threat, especially in regulated industries (i.e., finance, health care). Further, the risk is disproportionately higher for upper management, since many of a company's highest level executives regularly engage in international travel while carrying highly sensitive data.

Bottom Line: Although we hope sanity returns and Congress acts against this unprecedented invasion of privacy, we do not believe that this is a near term likelihood. Therefore, we believe each company with users who travel with their laptops must go into a defensive mode and make sure all mission critical data is protected through the proper deployment of security and backup technology. Failure to act may cause the loss of sensitive information, and potentially result in substantial harm to the company from confidential data being publicly disclosed.

Notebooks, Netbooks and Phonebooks, Oh My!

We are in the preliminary stages of an evolutionary change in the mobile computing appliance market. Traditionally computing devices for mobile workers were based on the portable PC (e.g., notebooks and tablets) that ran a full featured OS and a variety of applications geared to the needs of the individual user. This general computing device also functioned as the primary application vehicle for enterprises to enable end users to access and interact with back office systems. However, over the past couple of years as smart phone devices became more capable, currently achieving the computing power of PC devices of just 3-4 years ago, mobile workers have been adopting these devices in large numbers despite the still relatively limited functionality available compared to notebooks. The much better battery life, small form factor and light weight make these devices highly appealing despite the limited screen size and input modes.

We are beginning to see a new "middle class" of devices emerge that will ultimately have a major impact on the enterprise market. This "Netbook" class of device is characterized by light weight (under 1-2KG), screen size of under 7 inches, full time wireless connectivity, an optimized processor (e.g., Intel Atom) and typically an open source Linux-based OS, although some may run an embedded version of Windows. These devices have a relatively small amount of general computing power available (e.g.,

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limited storage space without a hard drive, limited memory, more limited CPU) than their notebook cousins, but generally offer more openness and options than a typical smart phone. Although personal productivity applications may be available for these devices, the primary role they play is a browser-centric web-services one, where applications exist in the cloud and users interact with them as a service.

Currently there are relatively few of these Netbook devices available in the market (e.g., Acer Eee PC, Nokia N810), and they are geared towards the consumer. However, over the next 3 years, we expect to see a large number of such devices being offered. Indeed, we expect both traditional PC vendors (e.g., HP, Toshiba, Acer, Lenovo, Dell) to “downsize” and enter this market, as well as traditional smart phone device vendors (e.g., Nokia, Motorola) to “upsize” and enter this market. This will broaden the available offerings with devices attractive to business users for both computing and communications (e.g., VoIP, IM).

As more companies move to a software as a service (SaaS) model, the ability to provide mobile users with a more diverse set of computing tools without heavily impacting the complexity and/or cost of the IT infrastructure will mean that the “one size fits all” mobile device model will be superseded. Indeed, relatively low cost (\$200-\$500) Netbooks will be attractive for workers where the ROI of providing traditional mobile devices and managing them is prohibitive. Further, these essentially throw away devices with limited on-device storage represent a relatively low security risk. However, due to the nature of SaaS, the device does require full time wireless broadband connectivity to function. We expect WiMax to fulfill a significant portion of this need, along with 3G cellular broadband services. Many devices will come with multiple radios, providing connectivity options based on what is locally available (e.g., Nokia’s Internet Tablet with WiMax and WiFi). The cost of connectivity will add to the TCO of these devices, although we expect connectivity options to be offered to virtually all mobile workers regardless of device type.

Bottom Line: Enterprises should be planning on selectively adopting Netbook-class devices in the next few years as they transition to SaaS. We do not expect Notebooks or Phonebooks to be eliminated, as they enable specific classes of workers and work styles. But Netbooks will enable a flexible and cost effective approach for many classes of users where the relatively large screens are advantageous compared to smart phones, and where more limited computing power and much better battery life are advantageous to mobile workers over traditional Notebooks.

Nokia Goes Open Source

Nokia recently announced it is acquiring Trolltech, a leading provider of Linux and open source SW for the phone market. This gives Nokia a major stake in the Linux-based marketplace, an area in which it so far has had limited exposure (e.g., its N810 Linux Internet Device). Is this a commitment from Nokia to open source, or a way for Nokia to stifle growing competition in the Linux powered phone market and push more

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Nokia flavored S-series Symbian-based devices (Nokia owns a majority of the Symbian consortium)?

We believe Nokia understands that Linux-based phones will be a major player in the marketplace (by 2012, we expect Linux based phones to be 15%-20% of the overall market), particularly in emerging markets (e.g., China, India, Eastern Europe). Coupled with Nokia's high visibility and brand recognition, it intends to capture a large share of this market and maintain its approximately 40% worldwide market share. Competitors in Linux OS (e.g. China's Access) are already well along in developing both low end and smart phone platforms. Further, the emerging market for portable Internet Devices, an area in which Nokia wishes to capture significant market share, and its push towards services (e.g., music, videos, etc.) makes open source an area in which Nokia must have a major presence for long term growth. Finally, the emergence of WiMax and devices specifically targeted for this new wireless infrastructure will be heavily influenced by low cost and configurable open source devices.

This move will have a major impact on Nokia's competitors, especially Motorola, who has been experimenting in the Linux-based phone market with several devices (though none have been huge sellers). Further, this will have an effect on Palm, who is porting its Palm OS to a Linux kernel (and is 2 years late in doing so). But more importantly, it will let Nokia compete directly against many of the new vendors emerging in China and India that are beginning to capture significant market share in their home markets by offering a low cost open source powered platform instead of the more popular, but more expensive, Symbian OS. We do not believe this move by Nokia will have much impact on Microsoft and its OS for mobile devices, as its position in the high end is less affected by Linux, nor do we believe this will have any major impact on RIM BlackBerry.

We believe overall this was a smart move on Nokia's part. However, much could go wrong. The various vendors already working with Trolltech, many of whom compete with Nokia, will likely seek other players for their SW platform, thus boosting alternate open source providers (e.g., LiMo coalition, Android). Nokia might not provide sufficient resources to keep Trolltech competitive in this space, where changes occur very rapidly. And finally, Nokia could try to move Open Source components into Symbian, which would likely result in a hybrid platform that could jeopardize its robustness and code development model, and consequently its popularity.

Bottom Line: We believe all of the major device vendors must develop a stake in the evolving Open Source device marketplace to satisfy emerging markets. However, it is highly likely that these device will not be truly universal (as the open source proponents like to promote), but each vendors will likely have some "refinements" specific to their platform. This will make universal SW application availability across all devices unlikely, similar to the current situation in the PC and Server markets. For the enterprise, this represents another platform it must ultimately support, increasing the overall complexity of the wireless enterprise.



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