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RESEARCH NOTE
UNDERSTANDING THE HARD ROI OF BYOD

THE BOTTOM LINE

The hard ROI of BYOD (Bring Your Own Device) is being confused by feel-good claims around productivity and vendor proclamations that lack a financial foundation. To understand the ROI of BYOD, companies must consider the costs and benefits that companies can realistically expect from each area of BYOD.

THE REALITY OF BYOD

To the untrained observer, the concept of BYOD is simple: bring in consumer devices and save money. However, this is often based on the incorrect assumption that device costs constitute a significant portion of enterprise mobility spend.

In reality, the device cost typically makes up less than 10 percent of a company's annual mobility spend compared to voice and data, support costs, developer costs, and management software. In return, the challenges of BYOD can increase the other 90 percent of spend to the point where BYOD will actually increase overall costs without providing any tangible benefits.

Between the cost of BYOD and the challenges of BYOD risk management, companies rarely get the cost savings and ROI they expected. As BYOD (defined by the Apple iPhone and its SDK that rendered the iPhone a mobile supercomputer) celebrates its fifth year, the number of companies with some level of BYOD has settled around 75 percent. However, because of these challenges, Nucleus predicted that corporate BYOD adoption would start to decline in 2013 (Nucleus Research *m148 - Nucleus Top 10 Predictions for 2013*, November 2012). To understand why, we considered a few of the costs and benefits of BYOD.

BREAKING DOWN BYOD COSTS AND BENEFITS

To understand the actual ROI of BYOD in a concrete manner, companies must think about each area of BYOD and how it affects both the costs and benefits companies can realistically achieve. There are 6 major areas that companies must consider in

understanding the hard ROI of BYOD: Device costs, voice and data costs, help desk costs, mobile developer costs, enterprise mobility management software, and the productivity obtained specifically through personally-owned devices.

DEVICE COSTS

The typical cost of a new mobile device varies on whether it is subsidized by a carrier or not. In most enterprise settings, a carrier-subsidized device will rarely cost more than $200. Devices used in the workplace will have a lifespan of about 18 months, after which time employees will be eligible for a new subsidized device and want to upgrade. Based on the assumption of $200 per device, this cost amortized over the lifespan of the device averages to be approximately $11 per month per employee.

In a corporate-liable setting, companies can negotiate a bulk discount on these devices and acquire additional backup devices at no cost, providing an additional 20 to 30 percent savings. From a device-specific perspective, companies save about $8 per month per device by moving to BYOD (with the assumption that employees are choosing high-end devices), which represents only a small fraction of the total cost of enterprise mobility.

VOICE AND DATA COSTS

Consumer ARPU (Average Revenue per User) in the United States is approaching $65 per month for some carriers, with business users averaging between $80 - $90 per month based on multiple interviews and surveys. One hidden financial challenge with BYOD lies in reimbursing employees for monthly voice and data costs, a direct cost that can often be at least 10 times greater than the device cost. CFOs and controllers must carefully consider these costs before supporting a BYOD strategy.

Voice and data costs in an optimized enterprise environment are typically close to the average consumer ARPU of approximately $60-$65 per user. This is a result of enterprise spend strategies, including bulk discounts, pooled data for voice and data and texting, and special rates for international roaming (which has become an increasingly challenging variable for managing mobile costs with the increased use of mobile data). Without the bulk purchasing power associated with an enterprise account, mobile costs will be higher. However, this doesn't mean that the company should help subsidize these costs. In general, any reimbursement above $40 per month implies the company is deliberately giving up money to support BYOD.

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Why $40 and not $60? There is an additional cost to reimbursement: the corporate cost associated with reimbursement processes. The majority of reimbursements are handled through expense reports, taking time away from the employee, the manager verifying the report, and the accounts payable employee processing the report. Considering the

average United States-based company brings in approximately $250,000 in revenue per employee and a conservative estimate of 20 minutes spent between these three employees, this represents an approximate loss of $20 in productivity per month per reimbursement (considering a blended productivity factor for these three employees).

If BYOD reimbursements occur through expense reports, companies should provide no more than $40 per month after considering additional internal processing costs. And if a stipend is provided through a paycheck, it should be no more than $60 to match a well-managed corporate environment. However, many companies pay significantly more. Companies providing a standard $75 reimbursement (or more) through an expense report process are giving up hundreds of dollars per employee every year to support BYOD.

There is an emerging class of companies that manage BYOD costs by handling employee bills, including Visage and Amtel. In addition, traditional telecom expense management vendors specialize in transferring BYOD deployments to corporate accounts, including Tangoe, WidePoint, IBM Emptoris, Asentinel, Dimension Data, Vodafone Global Enterprise, Telesoft, mindWireless, Etelesolv, Comview, and MobilSense.

MOBILE HELP DESK

Mobile help desk issues can be broadly separated into Tier 1 (basic settings and device support) and Tier 2 (advanced troubleshooting, mobile applications, and other mobile problems). Tier 1 issues can often be moved to an IT help desk, but Tier 2 issues should be outsourced either to a carrier vendor or third-party help desk provider integrated with corporate telecom expense management (TEM) and enterprise mobility management (EMM) systems. Companies typically assign one employee to device support for every 1000 devices, although this ratio can change based on the variety of devices involved and the level of mobile maturity within the organization. The fully loaded cost of that employee, estimated at $60,000 can be seen as $5,000 per month for 1,000 devices, or $5 per device per month.

Depending on the level of support and expertise needed in your organization, this cost can vary substantially. For example, if an IT employee is responsible for the direct mobile support of 100 mission-critical executives and directors, the effective support cost is closer to $50 per device per month. In contrast, organizations whose BYOD support issues are fully supported by the carrier will have no costs, but are effectively shifting questions about the corporate network, corporate applications, and corporate data to a carrier's customer service department or to fellow employees who may be profit centers. This may create employee headaches and corporate compliance issues that far exceed the cost of outsourcing mobile support. Companies like Tangoe, Vodafone Global Enterprise, WidePoint, Manage Mobility, and Movero have a strong mobility-based help desk background.

MOBILE DEVELOPER COSTS

Today's enterprise mobility story is not complete without mobile applications. Companies lacking mobile apps do not fully benefit from the value of enterprise mobility and should at least consider the potential value from customized corporate applications for employees or customers. The fully-loaded cost of a mobile developer to create applications can be estimated at $150,000 per year; however this investment can lead to significant benefits, including increased productivity by accelerating information access in remote locations. If these developers are working on consumer-facing applications, they should be considered as profit centers with their value commensurate to improvements in customer service, upselling, and customer acquisition.

Mobile developers are typically only fluent in a single platform, such as iOS, Android, or Windows Phone. And although HTML5 and Javascript provide platform-neutral application capabilities, their relative lack of native support leads to limited mobile functionality lacking the usability employees associate with mobile applications. In addition, once these applications have been developed, they still must be deployed and secured through mobile application management. To address these issues, a new generation of vendors has recently emerged to handle multi-platform mobile application development and deployment across multiple platforms, including Antenna Software, iFactr, PhoneGap and Verivo Software.

MOBILITY MANAGEMENT

Enterprise mobility management requires cost management, content management, device management, application management, and GRC (Governance, Risk Management, and Compliance). Regardless of who is buying the device, the SEC and governmental regulatory bodies will first seek to blame the company, not the individual. For example, in September 2012, Massachusetts Eye and Ear Infirmary and Massachusetts Eye and Ear Associates Inc. settled with the United States Department of Health and Human Services for $1.5 million based on potential violations of HIPAA (Health Insurance Portability and Accountability Act). These charges were associated with the loss of a personal laptop with personally identifiable health information.

In September 2012, the loss of one personal laptop caused a healthcare provider to settle with the United States Department of Health and Human Services for $1.5 million based on potential violations of HIPAA.

With gigabytes of storage and multiple modes of connectivity, every mobile device touching corporate data in a compliance-based market must now be protected to avoid potential liability. Although device management should be a priority regardless of corporate or personal ownership, BYOD-based deployments require additional management efforts, such as getting permission to put mobile management software on an employee's device. The effort required to chase down employees bringing in personal devices represents an additional cost to the company. Pure-play companies like Airwatch,

Tangoe, Boxtone, MobileIron, Good Technology, Amtel, and MaaS360 by Fiberlink should be considered for device management along with larger IT management solutions ranging from Citrix/Zenprise to IBM Tivoli to SAP Mobility. For content and document management, companies should look at Box, EMC Syncplicity, Huddle, and SOTI.

Companies must also consider the cost of managing applications which often hold sensitive corporate data. Mobile application management is not simply a matter of providing an "app store"-like experience, but should also include centralized application management and analysis capabilities. To handle these demands, customers should consider specialists such as Apperian and App47 or a mobile management platform such as VeliQ which takes device, content, and application management into account.

REALISTICALLY MEASURING THE PRODUCTIVITY OF BYOD

To measure the productivity benefit of BYOD, companies must first calculate productivity from a personal device compared to the productivity of corporate-liable enterprise mobility, not to the productivity of having no mobility at all. Corporate-procured mobility does not mean that employees cannot choose devices, apps, and settings. It just means that the company directly pays for legitimate mobile needs that employees face to do their work. Companies should consider the option of procuring any a device directly from a carrier in what has been called a Corporate Owned, Personally Enabled (COPE) model where companies create a flexible procurement model for employees to choose their own device while taking advantage of corporate discounts and buying power.

From a more holistic perspective, if an employee needs a specific technology to do their work effectively, the business should be willing to invest in that technology. If the value of mobile technology can't justify a corporate investment, then why does the employee need it at all? The only productivity that should be considered in BYOD should be based directly on the employee's work in customizing their device layout and workflows and the cost of recreating that environment on a corporate mobile device.

If the value of mobile technology can't justify a corporate investment, then why does the employee need it at all?

Although productivity benefits are often considered the key to BYOD, it is often challenging to calculate a credible number. As an example, Intel recently estimated a time savings of 57 minutes a day for 23,500 BYOD mobile users. In 2012, Intel brought in about $500,000 per employee. If 23,500 employees saved this much time with a .5 productivity correction factor, Intel is stating that it gained roughly $700 million just from BYOD; this is a difficult estimate to believe (Nucleus Research *c41 – Quantifying the value of increased productivity*, August 2002). However, if correct, a $700 million productivity increase is material to the business and should be considered by the investment community as a key differentiator.

If Intel's estimate of a time savings of 57 minutes a day for 23,500 BYOD mobile users is accurate, then Intel achieved a $700 million productivity increase, which represents over one percent of its total annual revenue. But does the investment community seriously believe that BYOD created a material one percent increase in revenue?

Realistically, it is more likely that BYOD provides a one-time benefit in setting up devices with the assumption that the employee's preferences drive greater productivity than a company build. This is not to say the case for BYOD productivity cannot be made. If the work needed to customize a device represents multiple hours of productivity, the case for BYOD becomes clearer. Employees who are part of a profit center bring in approximately $250,000 per year depending on corporate expectations: roughly $1,000 per day. If the time lost by an employee moving from BYOD to a corporate device truly equates to $1,000 in productivity, this time lost is difficult to justify based on the costs and benefits associated with BYOD versus a corporate-owned program.

SUMMARIZING THE COSTS AND BENEFITS

The following table summarizes the potential bottom-line impact of BYOD based on deployments that Nucleus Research has studied.

THE COSTS AND BENEFITS OF BYOD IN CONTEXT

Mobility Category	Well-Managed Corporate Environment	Poorly-Managed Corporate Environment	BYOD
Device cost	$4 - $8 per user per month (based on spending $100-$150 per device lasting 18 – 24 months)	$11 - $25 per month (based on spending $200-$300 per device lasting 12 – 18 months)	No cost, unless the company chooses to subsidize
Voice, Data, Text, and International Roaming	$60 - $65 per month per user in a well-managed organization	$90 to $120 per user per month in a poorly managed organization	Depends on, reimbursement policy, but often $75 or higher
Help Desk Cost	$5 per user per month, including Tier 2 support	$10+ per user per month for Tier 1 support	No visibility, support often pushed to profit centers
Mobile Developer Costs	Rationalize $150K per year developer resources based on platform and tools	Hire developers to handle specific platforms without performing cost/benefit analysis	Often unaware of whether developer resources actually help employees or customers
Mobility management software	Have low-cost expense and device management tools, typically $5-$10 per device per month.	Incomplete tool deployment or one-time audits with short lifespan before inefficiencies creep in.	May have MDM and should consider expense management solutions.

Productivity Obtained	Based on time to action for corporate supported email, messaging, and applications. Typically in the 1%-2% range.	Based on employee's ability to find and prioritize mobile tools.	Based on employee's judgment.
Reduction of compliance-related fines	Clear benchmarking from year to year showing changes based on policy management.	Dedicated budget allocated to fines expected to occur due to poor management.	Ad hoc compliance issues that cannot be predicted due to lack of management.

WINNERS AND LOSERS IN BYOD

Who are the real winners and losers in BYOD? From a financial perspective, the big winner in BYOD is obviously **the carriers**. Instead of dealing with the might of corporate procurement, bargaining power is diluted back to the individual employee who lacks the time, knowledge, and buying power to drive a hard bargain. By driving support back to the carriers, enterprises also lose control of their technology and data and gain additional dependence on the carrier.

From a financial perspective, the big winner in BYOD is obviously **the carriers**.

Another big winner in BYOD? The employee, who gets to determine the technical standards for the business without regard for the organization. In addition, if BYOD goes unmanaged, the employee has unlimited access and control to corporate assets regardless of governance or compliance issues. And if the company pays for the mobile bill, the employee has a ticket to spend on any mobile usage regardless of its propriety.

Does this make the enterprise the big loser? It depends on the stakeholder. On a very tactical level, corporate procurement and IT support staff are probably glad to have the burden of mobility taken away from them. However, unless procurement and IT support are core business areas for the organization, this only implies cost centers have shifted their work to profit centers or to third parties at a higher per-hour cost.

Financial decision makers may win or lose depending on how they configure their BYOD policy. A BYOD approach with no reimbursement will probably be a net gain for financial officers, although the resulting potential investment in help desk support and mobile application development must be considered in this analysis.

The big losers are those dedicated to supporting technology strategy and those responsible for risk and compliance. Technology strategists must guide the corporate roadmap without knowing which devices are going to be used by employees while risk officers must work much harder to ensure compliance.

CONCLUSION

BYOD has been driven by fluffy productivity estimates lacking credible data. Although BYOD can be a useful cost reduction tool, it must be accompanied by a mature strategy for mobile application deployment, governance, and a close eye on the total cost of ownership associated with enterprise mobility. While not the only path for BYOD, this scenario described represents the reality of BYOD in the majority of companies that Nucleus has spoken with.

By carefully weighing the strengths and weaknesses of a BYOD implementation, companies can make this decision and design a BYOD program based on prudent and business-oriented measures rather than vague assumptions of poorly articulated value. In this perspective, Nucleus will consider the value of wireless expense management, mobile device management, mobile application management, the integration of mobility into GRC policies, and rationalized mobile development in analyzing the financial costs and value of enterprise mobility.