ORACLE SERVICE CLOUD

Bring Your Own Device

Harnessing Employee Choice with Cloud-Based, Browser-Enabled Solutions

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Executive Summary

Employees are already bringing their own high-tech devices to work, hoping to use familiar technology to be more productive. Encouraging that trend can slash IT costs, raise morale, boost productivity, and help your company project a cutting-edge image to customers. To benefit from the bring-your-own-device (BYOD) movement, companies should look to the cloud to meet critical needs, opting for browser-enabled solutions that work on any device instead of ones that need expensive, time-consuming testing and support every time employees buy the latest and greatest gadget.

The flood has already begun. Every day, more employees bring their own smartphones, tablets, and laptops into their offices, hoping to become more productive and add more value to their companies. While IT departments sometimes look at the BYOD revolution with concern over having to support more devices, stopping that flow of new technology could do more harm than good. A 2013 study from Forrester Research[1] shows that employees are choosing more than half (approximately 60 percent) of all the high-tech tools they use—either buying products themselves or choosing from a list of smartphones, tablets, laptops, and desktop computers approved by their employers. If you take desktops out of that mix, employees are selecting approximately 75 percent of the devices they are using. Technology research group Ovum found recently that 15 percent of employees used their devices to access company networks without informing their IT departments, and another 21 percent actively violated anti-BYOD policies in hopes of improving personal productivity.[2]

Faced with this flood of new technology, companies can either try to resist the tide by blocking outside devices, or they can embrace the trend. Banning employee-chosen technology denies the company cutting-edge tools, generates more work for IT departments, lowers the morale of top-notch employees, and robs companies of the benefits of rapidly falling consumer electronics prices by tying future work to aging hardware and networks.

Employees are already bringing their own devices to the workplace. 2013 Forrester Research survey data shows who selects the tools they are using: companies, employees, or employees selecting from company-approved lists.

1 Schadler, Ted. Forrester Research, “2013 Mobile Workforce Adoption Trends,” February 4, 2013.

2 Absalom, Richard. Ovum, “Multi-Market BYOD Survey 2013 Results: BYOD Is Not Going Away,” July 14, 2013.

BYOD early adopters are people who are willing to spend their own money to get more done every day, making them the sort of employees that companies should cherish. And the young people just entering the workforce have been raised on Angry Birds and Twitter apps. Allowing them to use tools that they've been essentially training on for most of their lives should help companies get the most out of each new employee.

The big challenge to implementing BYOD is that employee choice leads to a motley patchwork of devices. However, offering secure access to data and solutions to such a wide range of hardware options is easier than it sounds. This white paper discusses how cloud-based, browser-enabled solutions can support a BYOD policy.

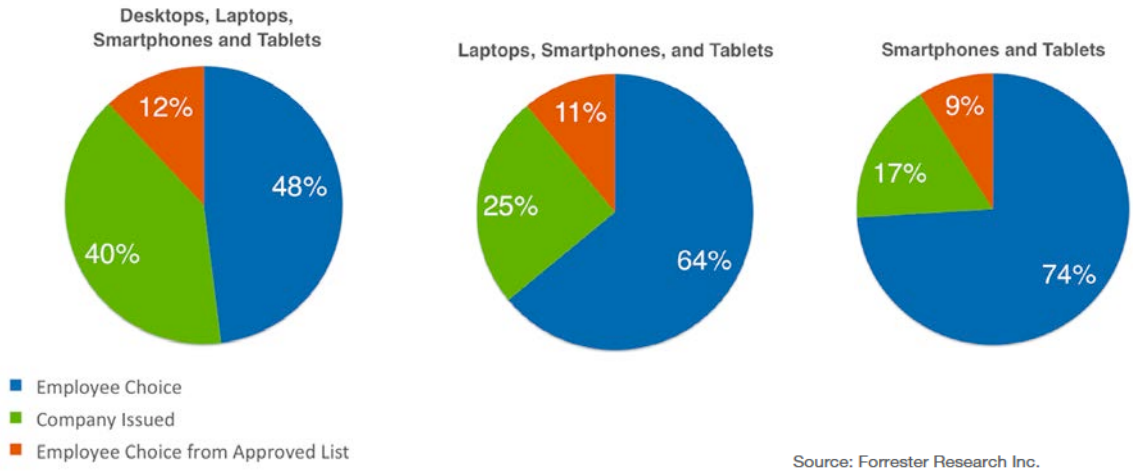

Figure 1. Employees are playing a greater role in choosing the devices they use to do their work.

Ignore the Mobile Device Arms Race

One of the biggest challenges that mobile computing has created is platform churn. Every time a device manufacturer or operating system appears to be gaining dominance, a new wave of products washes it away.

For example, Gartner research shows that at the end of 2010, Symbian was the #1 smartphone operating system, making up about 37 percent of the market.[3] The developers that focused on creating apps for that system spent considerable time and effort building for a dying platform. By the end of 2011, Symbian usage was below 10 percent.[4] Just twelve months later, in December 2012, its market share was down to 3 percent.[5]

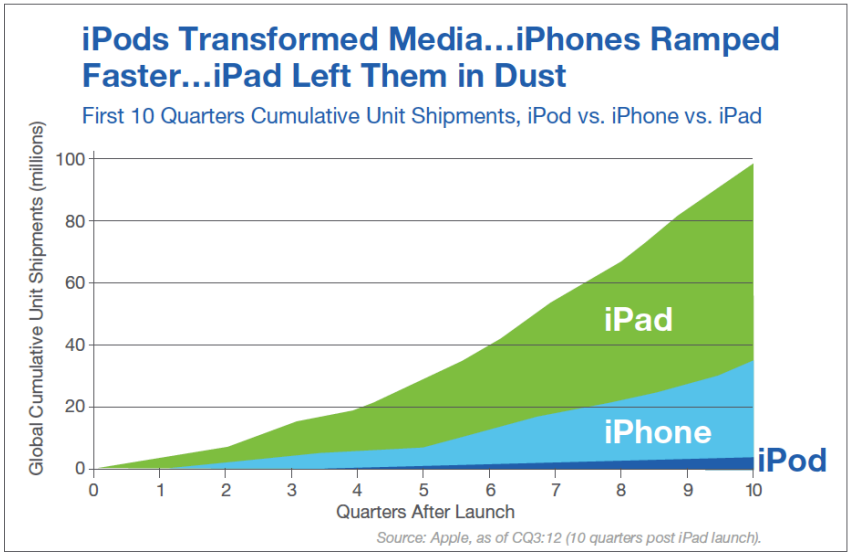

Figure 2. Device churn has become one of the biggest challenges of mobile computing: every time a device manufacturer or operating system appears to be gaining dominance, a new wave of products washes it away.

Research in Motion's BlackBerry operating system went from 13 percent of the market in 2011 to 3 percent in 2012.

Android, on the other hand, went from about 36 percent market share in early 2011 to a dominant 74 percent share in 2013. But even now, developers can't simply abandon all other systems and embrace only Android. That market share number includes multiple variations of the open source operating system, so developers can't easily transfer an Android 2.3 app onto an Android 4.2 smartphone.

Predicting where technology is going has always been tricky at best, and most businesses can point to expensive mistakes when they backed the wrong horse.

Effectively embracing BYOD means you don't have to try to predict what will become the dominant system. With the power of cloud computing, companies should be able to use powerful business solutions that will run equally well on any device.

3 Gartner, "Gartner Says Worldwide Mobile Device Sales to End Users Reached 1.6 Billion Units in 2010; Smartphone Sales Grew 72 Percent in 2010," February 9, 2011. gartner.com/newsroom/id/1543014

4 Gartner, "Gartner Says Worldwide Smartphone Sales Soared in Fourth Quarter of 2011 With 47 Percent Growth," February 15, 2012. gartner.com/newsroom/id/1924314

5 Gartner, "Gartner Says Worldwide Mobile Phone Sales Declined 1.7 Percent in 2012," February 13, 2013. gartner.com/newsroom/id/2335616

One employee uses her Kindle Fire tablet to check e-mail and fill out time slips from the road. Another has an iPad he uses to make sales presentations. A third uses an Android smartphone to record data in the field and a Windows laptop to access solutions. Many software companies would happily develop a series of apps and programs that could work in each of these environments because porting software to different platforms can generate hefty service fees.

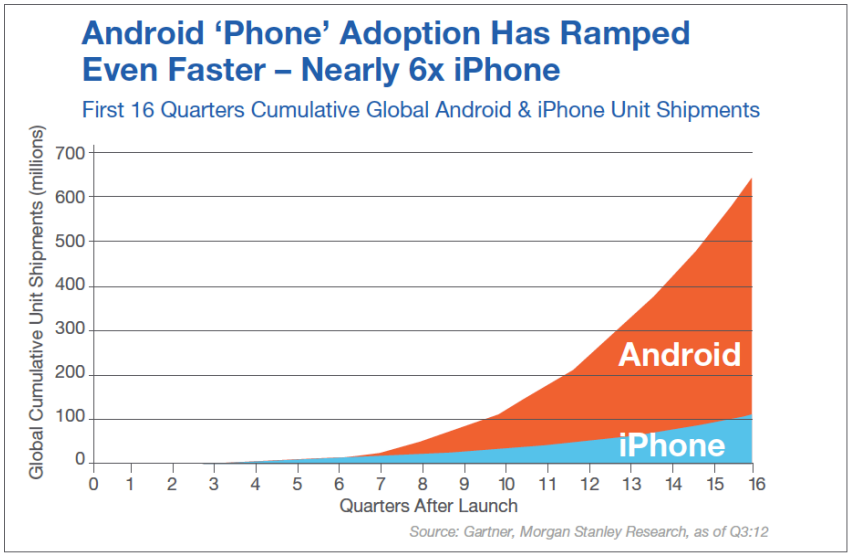

Figure 3. Android went from about 36 percent market share in early 2011 to a dominant 74 percent in 2013.

Security and Consistency Through the Browser

For those looking for a cost-effective BYOD policy—one that doesn't require software customization or expensive mobile management systems to track devices—there is another way. Virtually all fixed and mobile computing devices have one thing in common: web browsers for surfing the internet. Whether it's Safari, Firefox, Internet Explorer, Chrome, Dolphin, Opera, or some other platform, modern browsers all use HTML5, the most up-to-date version of the internet's communications software. Solution providers can use HTML5 to create web portals that give users a window into cloud-based systems. As long as the device is powerful enough to run a browser, its users should be fine. The heavy lifting gets done in data centers, not in the palms of your employees' hands.

E-mail and calendars have been the frontrunners, allowing many people to get their messages and daily schedules as easily on their phones and tablets as on their desktop computers. But simple communications is only the first step. Accessing powerful, mission-critical solutions can be as easy as checking a Gmail or Yahoo! e-mail account.

One security-minded organization needed to connect 650 employees and contractors to critical and sensitive data and a host of solutions. Many of those people wanted to use different tools, and the organization had neither the manpower nor the budget to implement a mobile management policy.

So the United States Treasury Department's Alcohol and Tobacco Tax and Trade Bureau (formerly part of the Bureau of Alcohol, Tobacco, and Firearms) embraced the browser.[6] The agency set up a secure site, allowing each user of the system to log in to a virtual work environment through the browser. Because data is stored on servers, not individual devices, data is secure.

A White House study on BYOD highlighted the Treasury program, saying a key lesson was to "avoid allowing data to touch the personal device. Having all data, settings, and processing in a central location while using the BYOD device simply as a viewer significantly simplifies the legal and policy implications."[7]

With browsers and cloud-based solutions, employees get to choose the devices they want, getting a uniform user experience regardless of the logo on the back of the phone, laptop, tablet, or even desktop. And as new devices emerge, cloud-based, browser-enabled solutions will work on those as well.

Cost Savings Through Consumerized Technology

Those new devices can do more than just boost employee productivity. Device agnosticism can become a major source of savings for businesses of any size. Modern smartphones are incredibly powerful and can do jobs once reserved for extremely expensive, purpose-built machines. It has become cliché to say that the average iPhone has more computing power than the systems that NASA used to go to the moon. But the leap in power is even more extreme than that.

In 2012, NASA landed an autonomous rover on Mars using a sophisticated, computer-controlled landing sequence that had to manage entry thrusters, a heat shield designed to withstand 1,600-degree entry temperatures, the largest parachute ever built for a spacecraft, rockets to slow the rover's descent, and a crane system to lower the robot to the planet's surface. The computer systems controlling that procedure used 500,000 lines of computer code. Google's Android 2.3 operating system—the one introduced on smartphones in 2010—uses about 12 million lines of code. So the software running somewhat dated phones is arguably 24 times more sophisticated than NASA's Mars-landing system.

To get a sense of the cost savings, imagine field services: For decades, several large hardware companies have sold fantastic handheld computers. With those devices, delivery people have been able to get packages to people's doorsteps; cable installers have been able to activate services; and field repair crews have been able to check network statuses for various industries. Costing as much as US$3,000, those devices offered great functionality at a premium price.

But today there's virtually nothing that those rugged, handheld computers do that can't be done with a modern smartphone or tablet. Especially when backed by cloud-based, browser-enabled solutions, modern mobile devices can scan barcodes, accept credit card payments, take pictures of job sites, and log in to networks to gather and share data. In many ways, tablets and smartphones are even more powerful than the more expensive rugged handhelds. Operators of those purpose-built devices can't, for example, use work-oriented social networking tools to gain service insights from colleagues.

6 Hughes, Robert. "Alcohol and Tobacco Tax and Trade Bureau (TTB) Virtual Desktop Implementation: Allowing Bring Your Own Device with Minimal Policy or Legal Implications," August 13, 2012.

7 Office of the President of the United States. "A Toolkit to Support Federal Agencies Implementing Bring Your Own Device (BYOD) Programs," August 23, 2012.

The initial cost savings are clear: US$200 phones are much cheaper than US$3,000 handheld computers. But the cost benefits multiply when you consider the impact on the entire operation. If the smartphone breaks or the employee loses it, finding a replacement means driving to any shopping mall or electronics store in the country. With cloud-based backup services, personal settings such as phone numbers and browser bookmarks to services can be replaced within minutes. That easy access to hardware eliminates the need to maintain a costly inventory of replacement devices and parts.

Also, when an employee's personal technology fails, his first call tends to be to the manufacturer or the network service provider that sold him the product, not his company's IT department. That reduction in hardware calls should let companies efficiently prioritize IT workloads, focusing on higher-value work instead of telling users how to reboot.

Conclusion

Employees in many industries are willing to spend hundreds of dollars of their own money to choose tools that they like, making them happier and more productive. Fostering that BYOD trend can lead to lower operating costs and reduced headaches for IT departments. It can also help companies take advantage of the rapid pace of advancement in consumer computing. To encourage and harness the BYOD movement, companies should look to solutions that work equally well on any modern device. Instead of trying to guess which product is going to win the mobile wars, focus on the browser—an existing piece of software that lets all employees securely access solutions, regardless of the make or model of the device.

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Hardware and Software, **Engineered to Work Together**

Bring Your Own Device: Harnessing Employee Choice with Cloud-Based, Browser-Enabled Solutions
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