

Consumerization for IT: How IT Benefits From and Enables Use of Emerging Technology



by George Hamilton | June 2011

The Bottom Line

Consumerization in the enterprise is mainstream, and IT managers of both small and large businesses need to change their relationship with end-user technology and how they support it. Fortunately, cloud-based application delivery, Web 2.0 technologies and online support tools can give users what they need without overwhelming IT support reps.

Executive Summary

Cloud computing, consumerization and social media are converging and users are wresting control of technology away from IT departments. IT can begrudgingly tolerate the demand of employees to use cloud services, tablets, smartphones and personal laptops at work or they can embrace the consumerization wave to democratize IT and usher in a new era of worker productivity. They also can use those same technologies to improve their ability to support end-users and work from just about anywhere.

Cloud computing is very often discussed in terms of consolidating data center infrastructure, outsourcing commodity IT tasks and shifting IT budget from capex to opex. While worthy reasons to pursue cloud computing, those are all IT benefits. When Yankee Group asks IT managers what they consider the primary benefits of cloud computing for end-users, the top responses are the ability to work from anywhere, collaborate more effectively and access applications more easily, regardless of the client device (see Exhibit I). Obviously, both IT managers and end-users agree cloud computing plays a large role in enabling the new way of working.

According to Yankee Group's [2011 US Enterprise Mobility: Employee Survey, Wave 1](#), the No. 1 reason employees use consumer applications at work is because they are familiar with them from their non-work life. Call it the Apple effect. For a company that does not target enterprises, Apple has had more impact on enterprise IT departments than any other technology vendor.

Thirty percent of respondents to our employee survey have installed consumer applications on their work device. But 49 percent also say IT does not grant permission to do so. IT can try to lock things down, but the long-term value of cloud computing

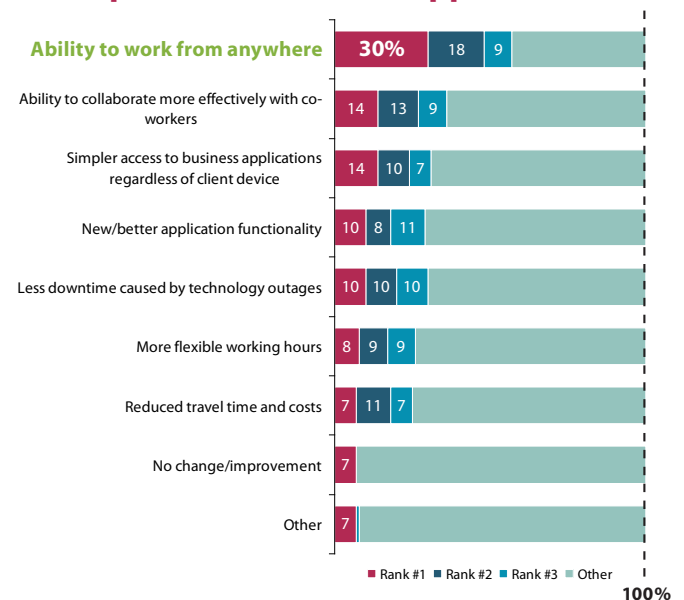
and applications is the foundation they lay for user self-service and consumption. Whether a private cloud managed by IT or a public cloud service from Amazon or Google, the value from the end-users' perspective is the ability to immediately consume a service on their terms on any device from any location.

To help support the new way of working, IT departments are starting to embrace, not just tolerate, consumerization. Fortunately, cloud computing and applications, collaboration software and social media provide mechanisms for enterprise IT to put more power in the hands of end-users while protecting the security and integrity of the company.

Exhibit I: IT Managers Say Working from Anywhere Is the No. 1 User Benefit of Cloud Applications

Source: Yankee Group, 2011

Top Benefits of Cloud Applications



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Methodology

This report uses research from Yankee Group’s survey and forecast suites, including:

- [Link Data: Global Enterprise Forecast, December 2010](#)
- [2011 US Enterprise Mobility: Employee Survey, Wave I](#)
- [Anywhere Enterprise: 2010 U.S. Enterprise Mobility/IT Decision-Maker Survey, Wave I-2](#)
- [2011 US FastView: Cloud Computing Survey](#)

We also interviewed five IT managers responsible for cloud computing services and applications, as well as more than a dozen technology vendors in the areas of virtualization, networking, cloud computing services (SaaS, IaaS, PaaS), collaboration, enterprise mobility and telecommunications services.

I. IT Needs to Lead, Not Just Tolerate, the New Way of Working

The enterprise gates have been crashed; consumerization is a fait accompli. There will of course be organizations that, out of necessity, have zero tolerance for personal devices connecting to their internal networks. However, the majority of enterprise IT organizations have accepted that personal smartphones, tablets and laptops are, at the very least, inevitable and have begun implementing infrastructure and policies for personal device use and connectivity (see Exhibit 2 on the next page).

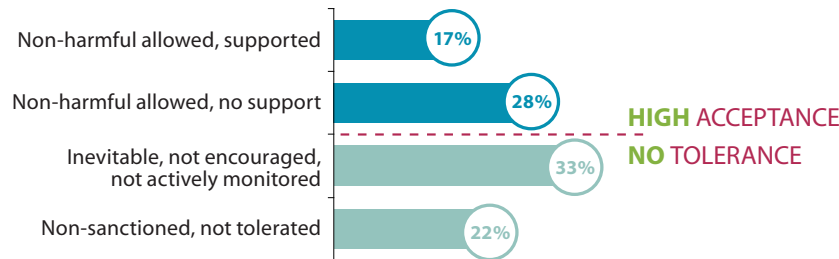
The June 2010 Yankee Group Report “[Learning to Love the Consumerized Enterprise](#)” offers some strategies for supporting personal smartphones in the corporate environment. Preventing harm is a logical and necessary first step. But evidence is mounting that embracing consumer technology—both devices and applications—will improve not only end-user productivity but that of the IT department as well.

Smart IT organizations are not just accepting consumer technology begrudgingly. They’re starting to tap into the enthusiasm and collective knowledge of users to help IT select and support consumer devices and applications that deliver enterprise benefits. It’s enterprise crowdsourcing. What could be better than users telling IT what makes them productive and IT empowering them to use it? And it’s not just some neat theory. IT is listening and is starting to use more SaaS-based applications to provide support to their end-users and monitor the health and performance of their infrastructure. Cloud computing and cloud-based applications, collaboration software and social networking tools make it possible for enterprise IT departments to leverage the wisdom of the crowd today and transition to a user-driven IT environment. CIOs have the choice. Consumerization can either drive IT crazy or it can drive IT strategy.

Exhibit 2: Enterprise IT Is More Accepting of Consumerization

Source: Yankee Group's Anywhere Enterprise: 2010 U.S. Enterprise Mobility/IT Decision-Maker Survey, Wave 1-2

Enterprise Philosophy on Consumer Applications, Devices



II. Cloud, Collaboration and Community Shape the User Experience

Consumerization is more than just users connecting a personal device to the corporate network. It is an experience being driven by several inter-related trends:

- **Enterprise mobility.** Personally liable smartphones and tablets are becoming the norm, and the users of these devices are bringing apps and content with them into the enterprise.
- **Cloud computing.** Public and private cloud-based infrastructure and applications can drive down capex and IT operational costs. More important, however, cloud computing gives users instant access to cloud-based alternatives to IT-controlled applications. And they're using them—with or without IT's involvement.
- **Social media.** Businesses around the globe are on the cusp of a generational shift in how their workers communicate that is directly tied to consumer communications. In the consumer world, communications takes place in the form of online conversations on community forums, wikis and instant messaging. It's immediate and (mostly) uncensored.

The important thing to note is that these are not three independent developments. There is a synergistic relationship: Cloud makes mobility possible and mobility drives more demand for cloud-based and mobile applications. And social media is the communications medium in which users collaborate with others, search for new applications, share information and offer their opinions on all of the above. This new era of consumerization and mobility is changing the relationship between users and the

enterprise IT department. For enterprise IT to actually lead and embrace the consumerization and mobility revolution, it needs to adapt IT processes and user support to this new norm.

The days of top-down procurement and provisioning of business applications are short-lived. The Apple iPhone forever changed users' attitudes toward applications, and that attitude is penetrating the enterprise. Thirty percent of respondents to our [2011 US Enterprise Mobility: Employee Survey, Wave 1](#) have installed consumers applications on their work device, but 49 percent also say IT does not grant them permission to do so. The No. 1 reason for using consumer applications at work is because users are familiar with them from their non-work life. In their personal lives, users don't build workflows around applications; they download applications to suit their workflows. If IT insists on specific applications with strictly associated workflows, users simply won't use the applications. They can download cloud-based alternatives for \$2.99. IT can attempt to block them (success varies), but the result will be a frustrated user and wasted IT time and investment.

CIOs and IT managers need to transition to user-driven IT, but the challenge is in balancing the application and mobility demands of end-users with the governance and operational needs of the organization. The technology priorities of IT decision-makers illustrate this need (see Exhibit 3 on the next page).

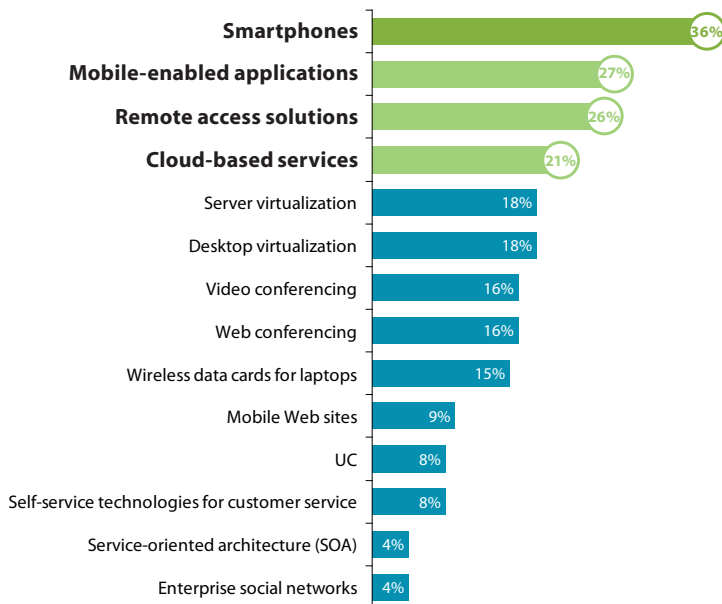
In order to make that transition, IT needs to answer the following questions:

- How do I make enterprise applications available and optimized for different device platforms?
- How do I make third-party cloud-based applications available securely?

Exhibit 3: Smartphones, Mobility and Cloud Services Are High Technology Priorities

Source: Yankee Group's Anywhere Enterprise: 2010 U.S. Enterprise Mobility/IT Decision-Maker Survey, Wave 1-2

In your opinion, which of the following **technologies** will be the **top priorities** for your organization during the next year?
 (Please select up to three) (n=1,810)



- How do I provide cost-effective support for a multi-platform, multi-device, multi-app organization?

These three fundamental questions get to the heart of the matter for IT, which is how to create an environment in which users can use cloud-based applications and services on devices of their choosing without adding risk to the enterprise or driving support costs through the roof. The answers lie in how well IT can leverage cloud computing, collaboration tools and their very own user community.

Cloud Computing Facilitates User-Driven IT

Cloud computing is very often discussed in terms of consolidating data center infrastructure, outsourcing commodity IT tasks and shifting IT budget from capex to opex—all worthy reasons to pursue cloud computing. But beyond the new cost model and potential IT benefits, cloud computing and applications promise IT flexibility and adaptability. But what does flexibility and adaptability really mean? There aren't any key performance indicators (KPIs) that measure how flexible or adaptive a company is. It's why so many organizations rely on cost measurements and TCO and ROI calculations in the first place. There are certainly IT and

organizational benefits to building an adaptive and flexible IT infrastructure. For example, an IT-controlled private cloud can allow IT to operate more efficiently and be more responsive to changing business needs. But what makes cloud computing truly flexible and adaptive is its potential for putting the power of technology choice and provisioning into the hands of end-users.

Mobility vs. Portability

Many CIOs and business managers mistake portability for mobility. The laptop gave workers portability: Workers were able to bring their work PC on the road, connect over a VPN and access their work applications. The simple act of accessing e-mail required client software on the laptop (typically an Exchange client) and a connection to a corporate e-mail (Exchange) server. While this made e-mail portable, the fact that users could only access it from their corporate laptops meant users were mobile but their content was not. True mobility means the user and the applications and content they use are not tied to a specific device and OS. Regardless of device, if workers have an Internet connection, they can access their content. The perfect example is cloud-based e-mail. Workers can now access e-mail from a PC browser, smartphone or tablet and

sync it on every device. If they don't have their laptops, they can still access their e-mail from a browser with username and password. The same holds true for cloud-based ERP/CRM applications such as Salesforce.com and SAP Online. Not only are the users mobile, but so are the applications and content they rely on. The shift away from client OS dependency and the exploding usage of personal devices means that cloud-based applications are the only way for IT to deliver true mobility at scale.

Making corporate e-mail and business applications available as cloud-based services is one part of the picture. Users are also installing their own cloud applications on work and personal devices. Consumer cloud and mobile applications are so compelling to end-users because of self-service provisioning. Users love being able to simply click on an icon and instantly download Dropbox or spin up an Amazon EC2 instance. But this kind of consumptive model gives IT managers and corporate risk and compliance officers the tremors. And they're not just being wet blankets or attempting to retain their center of power. Data loss and malware propagation are legitimate concerns (see the September 2010 Yankee Group Report

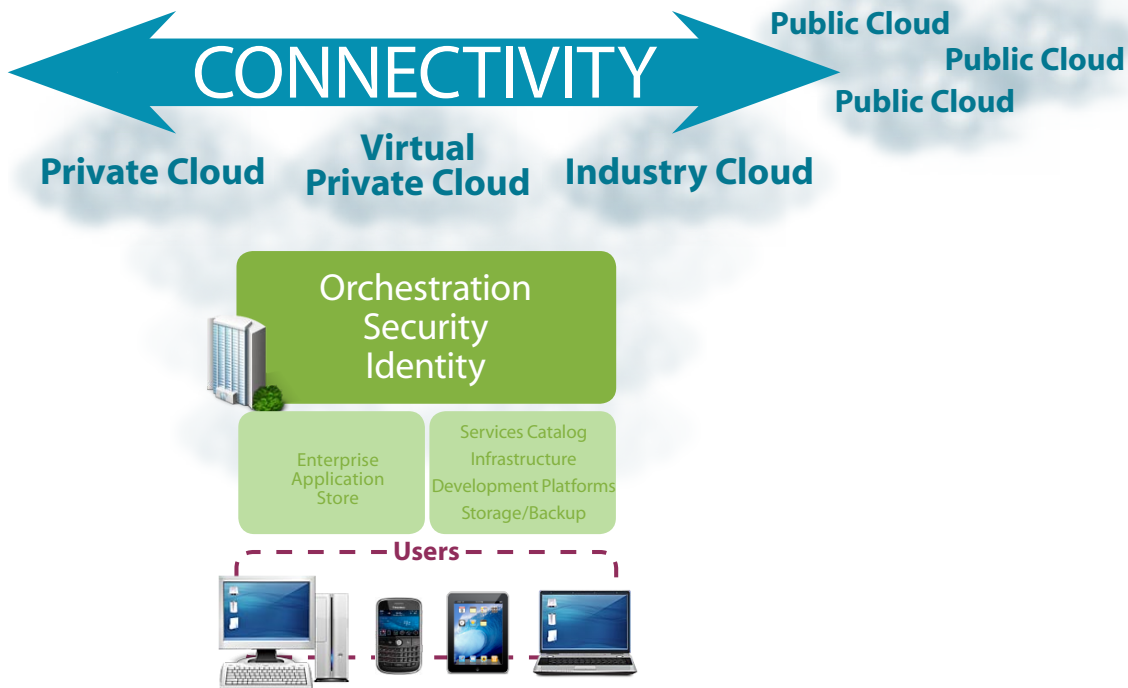
"Enterprises Require Clean Clouds"). In addition, the distributed purchasing of various public cloud services negates any potential volume discounts that an organization could realize. But seeing as though the toothpaste is out of the tube, what can IT do to emulate the consumer "app store" model within the enterprise? And, more importantly, how can it apply governance while maintaining the consumer feel and ease of use that encourages user adoption?

The Corporate Cloud Marketplace

One of the most interesting advancements in enterprise cloud computing is the idea of an enterprise marketplace. It isn't just a portal of corporate-sanctioned applications; those exist today. Rather, the enterprise marketplace is a portal or set of federated portals with access to private and public cloud services governed by policy and enabled with IT automation. Emerging cloud marketplace technology and service offerings will allow IT to transition to a technology delivery approach that mirrors the consumer model (see Exhibit 4).

Exhibit 4: Enterprise IT as a Cloud Service Provider

Source: Yankee Group, 2011



The enterprise marketplace acts as the front end to an organization's IT and application infrastructure. It's a portal to the cloud, and that cloud can consist of internal, private applications or access to public cloud applications and infrastructure services. The ideal for IT managers is to make both public and internal/private cloud resources available from a central storefront. The resulting enterprise "app store" integrates security, identity and directory services so users can provision their own applications and services but do so within IT organizational policies. In its early stages, but the common core requirements of a functioning enterprise marketplace include:

- **Policy-based IT automation.** Users want to be able to provision virtual compute resources such as virtual servers or storage capacity as they need them. IT can grant the capability according to defined user roles and permissions. IT can also monitor usage and understand the costs of every IT resource, public or private.
- **Integration support.** Users will want to access and IT will need to offer cloud services from internal private cloud resources and multiple public cloud providers as well as provide access to legacy systems.
- **Identity and access control.** One of the most important and compelling features will be integration with existing directory services so IT can offer single sign-on (SSO) to both private and public cloud applications and resources.
- **Managed mobility.** No marketplace is complete without a mobile app store. It's important that mobile applications be optimized for the devices they run on. Browser access is not sufficient. More critical is that IT can implement security settings such as remote lock and wipe and encryption (see the June 2010 Yankee Group Report "[Between Iron Fist and Open Hand: Finding the Smartphone Security Balance](#)").
- **Application delivery and optimization.** Users do not want to think about how the application is delivered. Some applications make more sense to execute in the data center and present on the remote device via client-side virtualization; for others, it makes more sense to run them locally on the client device. Users don't care as long as their experience is consistent, regardless of their device.

These core requirements make up the back-end operational infrastructure that enables a storefront. But the key to this model is that it's transparent to end-users. End-users don't want to think about how it works; they just want to download the app or provision the service they need. Organizations will also be able to include a price for the app or service. Eventually, metering and chargeback capabilities will offer IT and line-of-business (LoB) managers cost transparency and the ability to comparison shop for cloud services.

Most importantly, the enterprise marketplace doesn't act as a bottleneck. It doesn't take service provisioning away from users and put it into the hands of IT. It's not a mechanism for tolerating consumer-owned devices and consumer cloud applications; it's an architecture for embracing them. Rather than forcing compliance through hard-nosed tactics, enterprise IT can make it beneficial for users to work through corporate IT for their cloud applications and services. The cost can be lower, sign-on is simpler, mobile versions of business applications are available, a lost device can be rendered inoperable and, in many cases, a public cloud application may perform better if accessed via the enterprise WAN. IT doesn't just mitigate risk; it adds value to the connected user experience.

The enterprise storefront is a vision for cloud computing, and there are a lot of moving parts in the back-end infrastructure that have to evolve to make it all work. But today, enterprises can use cloud technology such as client-side virtualization and virtual desktop infrastructure (VDI) to make legacy applications accessible to any client device. It will take years for enterprises and service providers to transform the IT department of today to the user-driven IT department of tomorrow, but VDI and online support and collaboration tools can help IT support a bring-your-own-device (BYOD) environment and build a bridge to the automated, self-service cloud model of the future.

Enterprise Crowdsourcing: Cloud-Based Collaboration and Support Tap the Wisdom of the Enterprise

The changing relationship between users and technology is also having a profound change on users' relationship with IT and the IT help desk. Only 17 percent of enterprise IT decision-makers say they offer full support for user-liable devices (see Exhibit 2). But that doesn't stop the end-user with a new iPad from calling the help desk when he can't access e-mail. Users bringing in their own technology and expecting IT support is one point of friction, but it's not the only one.

When smartphones and tablets are actively deployed by and supported by IT, IT staff and the help desk can become overwhelmed. As mobility and cloud services grow and use cases expand, smartphones and tablets are ending up in the hands of more workers, many of whom are technology neophytes. For example, a nurse who has been using a clipboard and paper for years may all of a sudden be given a tablet with new cloud-based applications that access electronic health records (EHRs). A building inspector who has also been using a clipboard and pen for years may also be asked to use a tablet and cloud-based application to conduct facility assessments and access building information. To further complicate matters, many of these workers are remote. When they bring a technology problem to the help desk, resolution requires a long phone call or e-mail exchange, and perhaps a long drive or an expensive device shipment, all of which result in an idle worker and cost the organization days of lost productivity.

Fortunately for most organizations, cloud-based remote support and collaboration tools have matured to make it much easier for the help desk to support remote workers and devices on or off the corporate network. Features such as remote control of user-owned devices, instant chat and reverse screen-sharing are very common tools in the external help desk. As valuable as they are for customer-facing support, they can be just as important for the internal help desk. Not only do they make it easier for IT to support mobile workers, they make it easier for IT to be mobile. A core theme of Yankee Group's research is the Connected User Experience, which Yankee Group defines as an experience that combines networks, devices and content into a seamless engagement that captivates users. But it's important to remember that IT staff are users too. They want the same seamless technology experience users want, albeit in a different context. They can be more productive if they can access their support tools and help users from anywhere on any device.

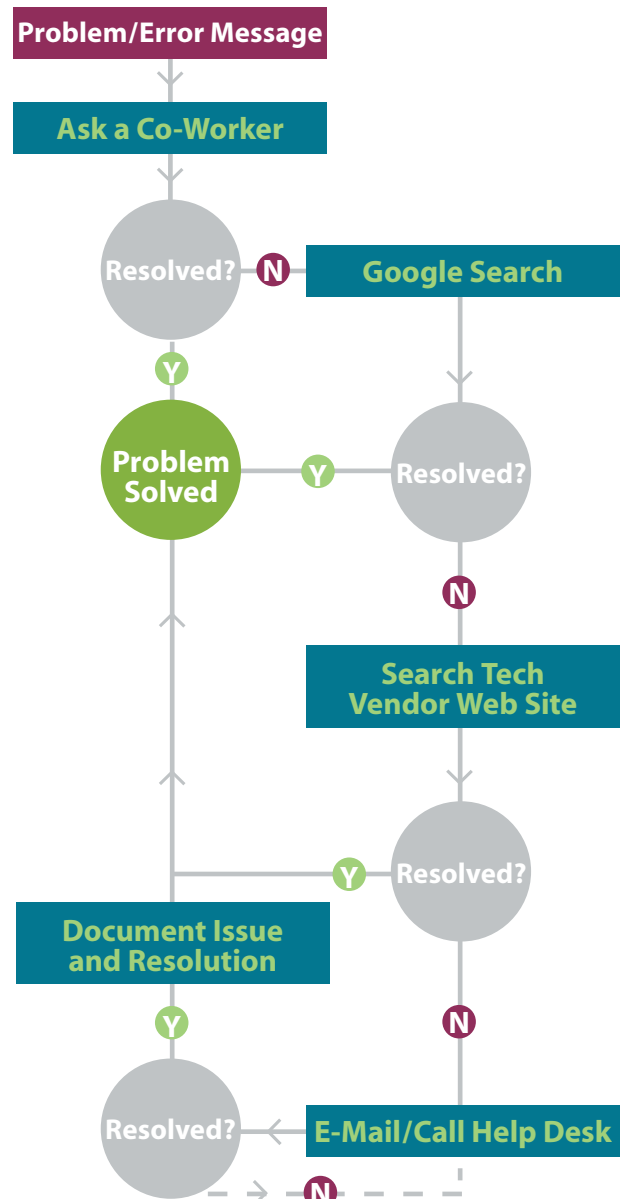
Better Support with Less IT Involvement

Collaboration tools and remote support tools fill a critical need for help desks, but there is one more way IT can better support end-users: Let them support themselves. Think about the workflow of a technology problem. It's not uncommon for end-users to try three or four different methods of solving a technology issue before

contacting the help desk (see Exhibit 5). Or worse, they open a help desk ticket and then find their own answer prior to getting a response. By the time the help desk has routed the ticket, assigned it to a staff member's queue and contacted the user, the user has already solved the problem. This wastes IT's time, slows response to other workers and prevents the resolution from being documented.

Exhibit 5: A Typical Enterprise Support Workflow

Source: Yankee Group, 2011



With users increasingly buying their own client devices and downloading their own applications, it makes sense to also give users more control of their tech support. In fact, most organizations are already doing just that for their customers. They still staff a customer help desk, but companies are realizing that using social media tools such as online forums and wikis to provide a means for their customers to help themselves and other customers improves customer satisfaction scores. In much the same way, IT departments can use online support and collaboration tools to improve end-user productivity and ease the support burden on the help desk.

IT departments should work with executives, LoB managers and users to expand the use of collaboration tools such as video conferencing and desktop sharing and incorporate social media tools such as online support forums, wikis and social networking. It's possible today for organizations to stop procuring endpoint devices for employees. A company can give employees a stipend and let them buy what they want. Since users will want a variety of devices, IT can set up an online support forum or wiki so users can support themselves. End-users are happy because they get the laptop or mobile device they want and IT is happy because it empowers end-users to support themselves.

Nearly everyone knows one or more non-IT tech experts in their company that often act as informal IT people. Rather than contacting the help desk, workers bring minor tech issues to a "power user" they know. As more non-sanctioned consumer devices and cloud applications are used for work, this is how users get support. By using online collaboration and social media, the IT department can bring this support flow out of the shadows and use it to increase the organization's overall support resources. To be effective, however, IT and business managers must work to encourage user adoption and reward contributions while not overwhelming individual users with support responsibilities. For example, a sales manager obviously does not want a tech-savvy salesperson spending an inordinate amount of their time supporting end-users. But that sales manager might be OK with it if the salesperson is helping other salespeople be more productive. So it's important that the right incentives are in place across the organization to encourage both power users and less tech-savvy workers to use the new support medium. Each business unit must identify and implement rewards and incentives for contributions to the support process as well as some rules of the road to protect contributors' job responsibilities.

By using social media and collaboration tools in conjunction with cloud-based delivery, organizations improve help desk metrics such as call volume and call times while simultaneously empowering end-users and keeping them productive. But social media and collaboration is more than just a tool for offloading IT support to end-users. IT can also leverage social media and collaboration to tap the knowledge of the user community. Online support forums and wikis make it simple for users to get support, but collaboration tools also automatically document every support issue. The conversations and interactions among users give IT insight into what applications workers use and recommend. The users themselves become an extension of the IT department. They help other users with technology questions and they make recommendations about what applications make them more productive. IT can leverage that information when making decisions about which consumer, mobile and cloud-based applications IT will make available. It's tapping the wisdom of the enterprise crowd.

III. Conclusions and Recommendations

According to Yankee Group's [2011 US Enterprise Mobility: Employee Survey, Wave I](#), more than half (54 percent) of employees work somewhere other than a corporate headquarters. Just three years ago, that number was only 40 percent. Those workers are installing consumer applications on their work PCs and personal smartphones and tablets. Cloud services firms such as Amazon, Foursquare, Facebook and Evernote cannot be dismissed as consumer cloud services. They may not sell to enterprise IT environments, but they are nonetheless deployed throughout large and small enterprises. Apple does not sell or market to enterprise IT leaders, but it has arguably had a huge impact on IT. IT professionals are learning to adapt to an environment that is increasingly out of their control and are learning that the same tools end-users are leveraging can make their lives easier as well.

Technology vendors are also adapting to the new norm. Technology vision is not being driven by technology stalwarts like Microsoft, IBM and Hewlett-Packard. It's being driven by users. Enterprise IT departments and technology providers that embrace this change will be the ones that compete more effectively. Based on that, Yankee Group offers the following recommendations:

Enterprise Recommendations

- **Plan your self-service cloud storefront.** Offerings are available today from service providers and technology vendors to begin the process of building an enterprise storefront. Use client-side virtualization to offer SSO to multiple cloud-based applications so IT can wrap governance and security around their employees' desire to use more public cloud applications and services.
- **Prepare for a Windows-less world.** Legacy business applications aren't going away and many can't even be virtualized, never mind ported to a cloud infrastructure. But client-side virtualization and VDI technology can make it possible for IT to deliver legacy apps to tablets and smartphones today. This can be an effective bridge for users to access legacy applications and use their personal technology for work. IT can take that first step while planning for the end of the PC era and the dawn of the device-agnostic cloud era.
- **Use collaboration and remote support to create and moderate end-user support forums.** Very few organizations have a corporate strategy for social media and collaboration, but employees use such tools every day. IT needs to get more involved in incorporating social networking. Build community forums and wikis where users can support themselves. Use social media and collaboration as a feedback mechanism to IT. Remote support is more critical than ever to support distributed workforces and manage IT infrastructure from anywhere, and remote access, Web conferencing, and screen- and document-sharing make workers more productive.
- **Create specific incentives to encourage self-sufficiency.** To encourage tech-savvy workers to support others, adopt incentives and rewards programs. Subscribe to a points-based affinity program so contributors earn rewards for their contributions. Give out monthly prizes for top contributions. When implementing a new technology, create bonus points for workers that contribute to a successful rollout. Organizations can make it part of compensation. Managers can get creative to encourage users and make it a vibrant community.

Vendor Recommendations

- **Service providers need to tie cloud and mobility together.** The biggest firms can operate at scale and sell commodity cloud IT services competitively. The rest need to add value to cloud services or be disintermediated, just as they were by over-the-top (OTT) content providers. Service providers should leverage their network assets, security skills and mobility services to manage enterprise storefronts that offer public and private cloud applications and services as well as mobile applications.
- **Focus on the user experience and the new role of the CIO, not IT cost reductions.** Cost reduction will always be a driver, but consumerization is forcing CIOs to change the very nature of IT. IT will be a service aggregator. Those service providers that enable CIOs to support the new way of working and transform into an effective internal service provider will have staying power and avoid competing on price for commodity IT services.

IV. Further Reading

Yankee Group Research

[“The Next Tipping Point: The Connected Experience,”](#) March 2011

[“Enterprises Require Clean Clouds,”](#) September 2010

[“Between Iron Fist and Open Hand: Finding the Smartphone Security Balance,”](#) June 2010

[“Learning to Love the Consumerized Enterprise,”](#) June 2010

Yankee Group Data

[Link Data: Global Enterprise Forecast, December 2010](#)

[2011 US Enterprise Mobility: Employee Survey, Wave 1](#)

[Anywhere Enterprise: 2010 U.S. Enterprise Mobility/IT Decision-Maker Survey, Wave 1-2](#)

[2011 US FastView: Cloud Computing Survey](#)

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