

The New Collaborative Workspace Environment



Introduction

The information technology industry is undergoing one of the most significant periods of transformation in the last 20 years. This period of change is directed by a series of trends such as the explosive growth of powerful smartphones, the consumerization of technology purchasing, and the move toward cloud-based software application delivery.

Each of these developments has been under way for several years now, but their effect is expanding as they move into mainstream adoption on a global scale. Examined as individual market forces, each of these trends has the potential to change the way organizations purchase, deploy, and use technology. However, when considered together it is evident that these trends are assailing the long-held IT assumption that the personal computer will continue to be the center of the productivity and collaboration experience.

The powerful combination of mobile smartphones and tablets, innovative software applications delivered through the Internet, and the flexibility of on-premises versus cloud-based ownership models is bringing an end to supremacy of the PC.

A Universe of Devices for Collaboration

The impact of the growth of mobile devices cannot be overstated. Feature phones capable of voice and text messaging – and in some cases mobile email – have long been popular, but with the introduction of the Apple iPhone and the Google Android mobile OS, a new category of devices designed for accessing the Internet and collaboration appeared almost overnight. The market penetration statistics are simply amazing:

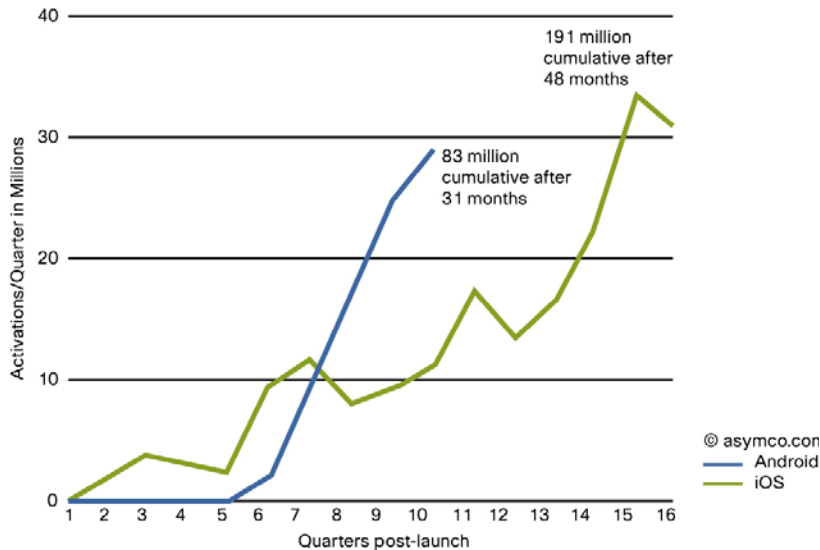
- 100 million Apple iPhones sold to date
- Google Android devices activated per day: 340,000 (10 million+ per month)
- 19.46 million Apple iPads sold to date

Unlike traditional desk-based personal computers, this new class of mobile devices came equipped with all of the capabilities necessary to enable people to richly communicate and collaborate with each other, such as front- and rear-facing cameras, high-quality LED screens, fourth-generation (4G) and Wi-Fi network connectivity, and software to maximize battery life.

“By 2013 the mobile phone is projected to become the most common device for accessing the Internet.”

By the end of 2010, 3.6 billion mobile devices had been purchased, and of these, 1.8 billion are capable of accessing the Internet. This rapid growth shows no signs of abating, and by 2013 the mobile phone is projected to become the most common device for accessing the Internet.

Figure 1. Android and iOS Device Growth



The Consumer Takes Charge

The rapid adoption of smartphones and tablets in the consumer market has profoundly affected the introduction of these new technologies into the enterprise. As consumers have made these devices the center of their personal lives, they are increasingly bringing these devices into the workplace or classroom. Unlike traditional cutting-edge technology products that might be of interest to only a limited number of “techies”, these smartphones are as popular in the executive suite as they are with the “net-savvy” college student.

This broad-based adoption has much to do with the ability of smartphones to provide a better experience in connecting with people and information than previous generations of phones. As Gartner stated, “People don’t want computers. They want to relate, share, communicate, enjoy, learn, discover, analyze, and create”¹.

As the awareness of what a smartphone can do has increased, user demand for an organization to support and enable their use has risen as well. In many organizations, the historical model of the IT department providing a closed list of supported phones has been replaced by IT rushing to meet the demands of these different groups and support a broad range of smartphone and tablet devices that employees, staff and students are bringing into the workplace or classroom.

This consumerization of the IT purchase process has also led to a change in ownership models for many of these devices. Historically, “personal” computers were expensive devices for IT to purchase, and the process of installing and maintaining the software on them was complex. With lower price points that are similar to consumer electronics and with the advent of app store-based software deployment and maintenance models, these smartphones have reduced the cost of ownership to the point where employees can purchase their own devices.

The benefit to an organization’s IT group is a significant cost savings realized from not having to procure the devices for employees, staff or students – but a commensurate new challenge involves the necessity to support the many different manufacturers and models.

¹“Evolution in Real Time,” Nick Jones and Tom Austin, Gartner Portals Content and Collaboration Summit, September 2010

Government and Education Become Social

This consumer-led influence of IT has a parallel in the adoption of social software in the enterprise. The incoming generation of workers has grown up using Facebook, Twitter, YouTube, blogs, wikis - and expects to be able to use these same tools or their equivalents in the workplace or at school.

Of course, the influence of these tools has now extended far beyond the Millennials to Boomers, and to organizations of every size and geography. According to IDC, 57% of workers use social media for business purposes at least once per week, and 15% of them use a consumer tool instead of the corporate-sponsored one².

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– IDC

However, this shift – from hierarchical enterprise content management and email-based communication to community-built expertise and dynamic, decentralized interactions – means another profound change for IT to reconcile with their traditional systems, policies, and controls. Traditional standard provisioning approaches are increasingly challenged to accommodate this new requirement.

Rather than resisting this trend, leading organizations such as Yum Brands, Dell, Starbucks and more have figured out the game-changing benefits of embracing social principles. While challenging for IT, the ability to capture end user opinion and provide service in real time, locate expertise, crowd source new product ideas and more from social software are compelling to business, government and education as the demand will continue to grow.

Video Becomes Pervasive

The value of business video, as compared to voice or documents alone, is increasingly recognized as a means to improve service and save cost. And not just in traditional areas such as conferencing and training, but in such areas as remote healthcare and banking, live problem resolution in manufacturing, global interviewing in HR, virtual receptionists, and many others.

“By 2015 mobile video data traffic will represent two-thirds of all mobile data traffic, up from half at the end of 2010.”

– Cisco Visual Networking Index

The Millennials – who grew up watching YouTube and using digital video first hand – are natural adopters of video, particularly on mobile devices. The latest forecasts predict that by 2015 mobile video data traffic will represent two-thirds of all mobile data traffic, up from half at the end of 2010³. As with social software, this new generation of workers will expect video to be an integral part of collaboration at work.

User experience is paramount – there is no “halfway good enough” point; it is either watchable or it is not. So easy to use, high quality, convenient access to video that fits with the user’s work style is a prime requirement for adoption. Given the diversity of work styles across so many different devices, software platforms, connection types, locations, and access modes (realtime or offline), the workspace needs to support it in a native, holistic manner that optimizes the experience tailored to each individual – not simply via a ‘one size fits all’ codec.

IT needs to embrace video as a native aspect of the new workspace rather than a ‘bolt-on’ media type.

²IDC Survey 2010

³Cisco Visual Networking Index, 2010

The Rise of the Cloud

The concept of providing enterprise software from an architecture where the applications are run and managed centrally has been around since the advent of the mainframe computer, and it was the dominant model for many years.

The personal computer changed this model by offering a richer user interface experience and the flexibility for users to create and control their own software applications, but with the trade-off of added complexity, security, and cost for the devices. The cloud-based model offers the best of both approaches with a rich and easy-to-use browser experience combined with the cost savings and security of centrally managed and maintained applications.

The ability to take advantage of public clouds for common collaboration capabilities such as email, instant messaging, video, web conferencing, or even complex enterprise-resource-planning (ERP) applications is further reducing the cost of software by exploiting the economies of scale in operations that most individual organizations could never achieve on their own. Furthermore, these cloud-based solutions are often made available globally, allowing IT organizations to enable remote and distant workforces with collaboration tools in ways that would not have been possible without the significant costs associated with building and maintaining a regional or local data center. In fact, these potential cost savings from cloud solutions are so compelling that Gartner estimates that 20 percent of businesses will own no IT assets at all by 2012⁴.

Entering the Post-PC Era

There is a growing consensus that the result of these technology trends is nothing short of a reordering of the personal communications and collaboration approach of the last 20 years, which had a desktop PC at the center of the model. Even former Microsoft CTO Ray Ozzie commented in a blog posting that “connected devices beyond the PC will increasingly come in a breathtaking number of shapes and sizes, tuned for a broad variety of communications, creation and consumption tasks. It’s important that all of us do precisely what our competitors and customers will ultimately do: close our eyes and form a realistic picture of what a post-PC world might actually look like.”

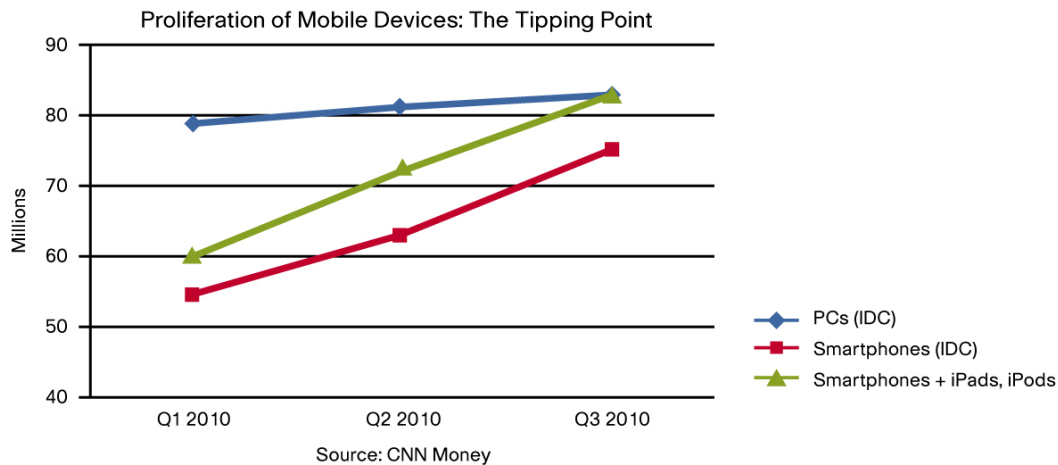
“Connected devices beyond the PC will increasingly come in a breathtaking number of shapes and sizes, tuned for a broad variety of communications, creation and consumption tasks . . . picture what a post-PC world might actually look like.”

– Ray Ozzie, former Microsoft CTO

With sales of Internet-enabled smart phones already surpassing PC sales, tablet device sales forecast to eclipse desktop sales by 2013⁵, and cloud-based computing models growing at a rapid rate, it is easy to foresee Mr. Ozzie’s post-PC world, a world where a focus on the desktop-based model is replaced by a new model – a model where the workspace uses communications and collaboration software that runs on any device, any place, and any network.

⁴Gartner’s Top Predictions for IT Organizations and Users 2010 and Beyond: A New Balance”, Gartner, Inc
⁵eReader Forecast, 2010 to 2015, Forrester Research, Inc.

Figure 2. Proliferation of Mobile Devices: The Tipping Point



The new workspace model will enable communication and collaboration in ways that were simply not possible in a client-server desktop world, and in the process will create new opportunities for innovation, productivity, and cost savings. The workspace model will not fix the aging desktop model – rather, it will complement it, in the process changing how people work together.

The Rise of the Collaborative Workspace Environment

The new workspace will become a platform of communications and collaboration capabilities that will be delivered to every user, even to those who have historically not used a PC in their job or to those who prefer new devices over the traditional PC.

What is new about this workspace is that it will be inherently:

- Mobile, so that users can use the workspace no matter where they go or when they go there
- Social in nature, so that communication moves beyond one-to-one to many-to-many to capture the power of social networking
- Visual by design, so that the richness of video communications enables users to tell their story in the most personal way
- Virtual, in that applications, data, and even operating systems can be securely and reliably delivered from private or public clouds through intelligent networks that connect the many devices that people use

This new workspace model will enable a user-centric communications and collaboration experience that is unlike the PC model experience in that it offers people the freedom to choose the way they work or study versus being provided only with a standard PC image that was designed to minimize the difficulty of software deployment and management rather than maximize the benefits of collaboration.

Figure 3. Collaboration Across PCs, Tablets and Phones



The user-centric model offers several advantages over today's alternatives:

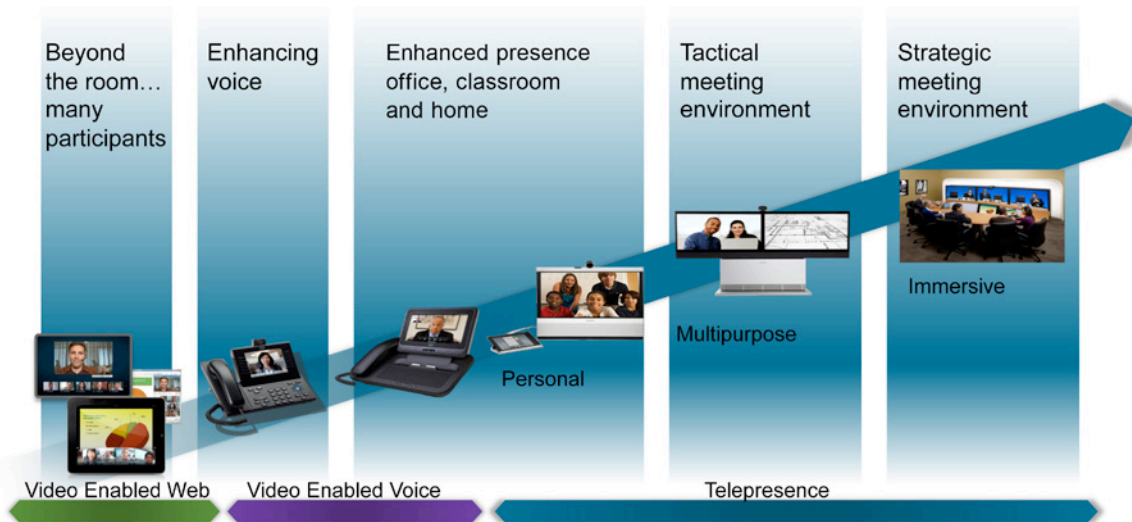
- Personalized: Users are free to design and control their own communications and collaboration capabilities rather than adapt to the corporate template.
- Consistent: These communications and collaboration capabilities remain the same across PC, tablet, and smart phone devices, improving productivity and usage.
- Contextual: Users can set their own rules for how information is delivered and how others can communicate with them, if necessary changing the rules as needed.
- Flexible: Users can select from a wide variety of devices, depending on their personal preferences and ownership model options.

The new workspace will also natively provide a breadth of communication modes, including messaging, voice, video, and conferencing capabilities. Each of these communication modes will have its own “immersion curve” that spans a range of basic to sophisticated capabilities.

“People don’t want computers. They want to relate, share, communicate, enjoy, learn, discover, analyze, and create”

– Gartner

Figure 4. The Video Immersion Curve



For example, the video immersion curve will provide high-quality person-to-person video on a mobile device screen to fully immersive room-based telepresence experiences that join together multiple people from multiple global locations. The messaging immersion curve will provide from person-to-person text messages on a mobile phone to widely networked email and voicemail systems to high-definition video messages that are stored and shared widely through the cloud to any device type. The conferencing immersion curve will enable person-to-person desktop sharing to scheduled team or class meetings that draw on powerful audio, video, and data-sharing bridges and global conferencing resource pools to highly managed live meeting broadcasts that reach thousands of users simultaneously with a high-definition quality voice and video experience.

Importantly, these communications modes will also be integrated to allow users on different points of the immersion curve to easily communicate with each other. For example, a user on a tablet device will be able to share voice, video, and data with other users in a telepresence room. The bandwidth and form-factor requirements of the tablet will automatically be adjusted to provide the tablet user with the best possible video experience for that device.

The concept of presence will be central to this capability because the definition of presence will expand beyond just free or busy to include status, device, time, location, and available bandwidth. By registering this expanded definition of presence with the network, the network will be able to notify peer nodes and devices as to the best way to set up, monitor, and tune a communications and collaboration experience with other parties according to what capabilities their devices provide and their particular location. Presence will also become ubiquitous with the adoption of open standards such as Extensible Messaging and Presence Protocol (XMPP) so that status can be shown in everything from traditional Microsoft Office applications, web business process automation applications such as SAP, social networks such as Facebook, and public cloud services such as Google Gmail and GoogleTalk.

Enabling the New Collaborative Environment

There is a dramatic shift underway in the workplace and within educational institutions driven by changing demographics, the advent of smart mobile devices, new ownership and delivery options in the cloud, and greater comfort with social tools, video, and virtual interaction in everyday business and education.

The traditional desktop 'office productivity' model, while having performed stalwart service, was not designed with these new requirements in mind. The scale and speed of an organization's adoption of such innovations as smart phones, tablets, social software, cloud-based services and HD video has outpaced IT's ability to support the new world while maintaining the old.

IT needs a new approach in this 'post PC' era. One that actively enables the new workspace rather than accommodating it piecemeal, or with proprietary extensions. One that understands the individual nature of the user's workspace, and provides the best possible experience as the user changes role, location, device and style of interaction. And one that is built for the long term – capable of extending support to new devices, applications and interaction styles as they come along, while still accommodating the existing landscape and adding value to it.

Cisco is building the platform to allow IT to deliver the new collaborative workspace environment. Cisco's architectural foundation supports open standards and interoperability, together with a set of shared services and state of the art applications that provide a consistent and superior collaboration experience regardless of device, content, location, or interaction style.

Figure 5. The Video Immersion Curve



Such an approach allows IT to provide a workspace that is personalized yet controllable, embraces the new principles (mobile, social, visual, virtual) while supporting the existing landscape, and can be adapted over time without fear of lock-in or 'rip and replace'.

More specifically, the Cisco approach offers the following advantages:

- A market leading portfolio of communications and collaboration solutions designed for the new workspace – including conferencing, messaging, telepresence, enterprise social software and IP telephony, designed for the purpose rather than ‘add-ons’
- A consistent end-user experience across multiple devices – including native support for Windows, Mac, iPhone, iPad, Android, Nokia, and Blackberry devices
- Feature parity across on-premise, public or private cloud deployments – including voice and video in both hosted and virtualized desktop models
- Real-time media workloads managed for high quality experience – using network-based services for Quality of Service, call admission control, auto-discovery, transcoding, and transrating
- Enterprise-ready social infrastructure – including search, locate and share text, voice, video and expertise
- Investment extension of Microsoft environments – with API-based integrations into Microsoft Office, Sharepoint, Exchange, and Active Directory

The next breakthrough levels of innovation and efficiency will come from your ability to embrace the new workspace trends, to tap into the latent expertise hidden within your organization, and to engage your employees, students, and constituents more closely in the future..

Cisco stands ready and willing to help get you there, starting today.

For More Information

For more information about Cisco Collaboration Solutions, contact your Cisco representative or visit:

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Government BYOD Solutions – www.cisco.com/go/govbyod

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