



WORKING IN A POST-PC WORLD

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The world of computing faces a fundamental shift. The shift is both simple and profound: People no longer need to go anywhere to work. Or put another way, people can work from anywhere. As many an Information Technology Department (IT) mission statement reiterates, the job of IT is to *get the right information, to the right person at the right time*—now add to that the following: *to the device of their choice*. Everything changes. When people decide what device to use, IT relinquishes control of the end-to-end solution. IT, however, must ensure that the data delivered to devices arrives securely, ideally through the use of standard protocols and services.

In the coming decade, the consumer will drive the configuration of personal technology within the organization, often, as many have already, by asserting their own device into the environment. This new reality of “bring your own device” (BYOD) has already integrated thousands of smartphones and tablet computers into businesses computing infrastructures around the world.

Although information technology professionals recognize the value of BYOD and conceptually support it, they face implementation issues related to security, scalability and support. Many IT organizations start with the question:

TECHNOLOGY OF THE POST-PC WORLD

It could be argued that the Post-PC World needs a better name, but like Post-Modernism, something needs to designate a significant break from what itself was a major breakthrough. The key difference between the PC World and the Post-PC World comes in how PC is defined. PC originally meant, personal computer. In the Post-PC World, PC will mean personal computing. The Post-PC World will be much more personal, much more intimate than the world created by personal computers. Until laptops diminished in size, no one really thought about reading in bed. As personal digital assistants morphed first into smartphones, then into tablets, the very personal nature of computing could be explored. Here is a list of some of the technologies that will define the Post-PC World.

- Smartphones & tablets running multiple operating systems & chip architectures
- IP-enabled devices including televisions, lights, phones & cameras
- Solid-state memory
- HTML5
- Systems-on-a-Chip
- Mobile hypervisors
- Large displays & shared public spaces
- Sensors everywhere
- Near-field communications
- Data integration & analytics create a context for computing-related activities

Industry Analysis

SOCIAL AND BUSINESS CHARACTERISTICS OF THE POST-PC WORLD

Many of the changes taking place in the Post-PC World occur not just because of technology, but because of changes in the work environment.

The following characteristics will define the work environment over the next decade.

- Aging populations in many industrial countries resulting in losses of operational knowledge and resulting threats to business continuity.
- Young populations in most emerging markets create new markets for products and drive consumer innovation.
- Uncertainty about regulatory and tax environments, including the rise of citizen regulation through social networking.
- Massive globalization.
- Rapidly emergent technology and the need for skilled workers who know how to leverage the new technology.
- Employment relationships become more tenuous, and turnover rates increase.
- Acknowledgement of environmental issues and a striving to incorporate “green” aspects into all parts of business.

empowered workforce that can make informed decisions about where and when to work. As long as people can connect and contribute in an effective way, it won't matter where their contribution originates, or when they choose to engage. This will create the need for concepts like commitment-based work that concentrates on the outcome of a work assignment, not the specifics details related to development or delivery. The

“How do we integrate all of these devices into our network?” When they should be asking: “How do we deliver the right experience to our workforce?” The later question will create a strategic connection between BYOD and providing the capabilities businesses need to service customers well, to drive innovation and to manage effectively.

A very important aspect of the Post-PC World will be just how ubiquitous technology will be, but also how much less it will feel bolted on, cobbled together — an afterthought.

Technology will provide for a number of new capabilities that will transform how people live and work, and how they define the edges of their work-life experience.

WORKING IN A POST-PC WORLD

The Post-PC World will accelerate changes already taking place, and the continued evolution of technology will allow other experiences to manifest themselves. Knowledge workers will need to be aware of three large categories of change that will affect how they live and work:

- The New Work Experience
- Meetings Reimagined
- Negotiating Boundaries

THE NEW WORK EXPERIENCE

Personally managing work, and being managed at work, will both change in the Post-PC World. Knowledge workers will have a wealth of new ways to interact with people and with data— organizations will move toward commitment-based work that creates unprecedented autonomy in approach, as well as freedom to choose where and when work is accomplished.

Own Your Workday. As ownership of devices, apps and other technology infrastructure moves to the individual worker, the levers of control will yield, resulting in an

ownership of the workday will be of great appeal to the “sandwich” generation, trying to cope simultaneously with the care of children and aging parents.

The Work-Life Blur. The demarcations between work-life and person-life will blur, pushing ownership for work-life choices to the individual. A person’s life may be punctuated with personal or work events that they manage, and during traditional “off-hours,” he or she may decide to engage with work. This model of work is significantly different than work in the past, and will require a combination of the astute use of technology to help manage transitions and personal responsibility to prioritize effectively in order to find balance between the work and the personal experience. The *work-life blur* will require policy realignment and compensation changes that acknowledge work and recognize contributions, regardless of where or when they are accomplished.

Time and Culture Shifting. Even roles that appear to be assigned to a particular geographic location will often include requirements for interfaces with people outside of that location’s time zone. Managing across time zones within a single country has been an expectation for decades, but globalization pushes time zone shifts from a few hours to many, even flipping the clock for some workers. As distributed work asserts itself, team members may come from anywhere in the world. Time shifts, of course, because the people working together live very far apart. Time shifting must often be accompanied by culture shifting, which requires a recognition of, and appreciation for, the culture of those on the far side of the collaborative conversation. These “hyper-distributed” teams often forgo teambuilding and the associated “storming-and-forming” that is more easily accommodated by physical colocation. Organizations that want to succeed in the Post-PC World need to ensure that their workers respects differences between cultures and strive to instill a personal discipline that recognizes the need to manage across a 24-hour day.

From Meeting Deadlines to Delivering on Commitments. Knowledge workers have, unfortunately, often been subjected to industrial age management practices. The Post-PC World will accelerate the movement away from “butts-in-seats” management to a more trusting engagement model based on commitments. People will commit to achieve a particular goal or objective, and then be empowered to engage across the organization to

LIVING IN A POST-PC WORLD



Eagle Investment Systems, a subsidiary of BNY Mellon integrated Cisco Jabber™, Cisco TelePresence® and Cisco WebEx with their Microsoft Office environment to create an integrated communications platform that crosses from phones to mobile devices. Employees can now use their PCs, laptops, and tablets for voice calls, instant messaging, desktop sharing, and video conferencing.

As a provider to financial services, Eagle Investment Systems found the integration between Cisco Jabber and the Cisco network important, because the network can manage security in realtime, including who can share which documents during a WebEx session.

The solution also increased productivity by allowing workers to shift from a lower fidelity experience, like a voice call, to sharing a spreadsheet in WebEx with one click.

The company’s employees routinely engage in thousands of instant messages, online meetings, voice calls and share desktop sessions every month, regardless of physical location or type of device.

EXPERIENCE ONE

Eduardo sees a finely rendered map of his business relationships. He already knows the simple answer: the team in Germany is working on the lithium-ion degradation problem for the new perforated-silicon batteries. But it's what Eduardo doesn't see so readily that always intrigues him.

Because all of his networks securely intersect on his device, he can explore patterns that don't exist in his corporate directory. He can see how suppliers, customers, even former colleagues and acquaintances, fit within the context of his battery charging challenge.

With all of this data Eduardo can apply his natural propensity toward abductive reasoning to problems, a thinking style that until recently was hard to support via the computer. Eduardo can use all of this reliable data to develop relevant hypotheses. Today's hypothesis is that he now knows enough people to get this problem solved, and after a few taps and swipes, he has identified a few people he wants to bring into the project. His next challenge is also easy: how to connect all these people together, even though they don't work with each other.

accomplish their objectives. Collaboration technology can be used to effectively communicate and coordinate commitments, as well as the work required to converge on shared objectives.

Boss-less Work. In many cases, the move toward commitments and away from day-to-day management will result in an increase in individual contributors as a percentage of the workforce. Although people may be superficially assigned to managers and departments, the way they do their work, and the detail to which any assignment manager understands that work, will decrease greatly. Managers will spend more time negotiating shared commitments across organizational boundaries and fostering a positive culture, and much less time managing people's tasks. The hierarchy will give way to teams and collaborative groups as the primary organizing mechanisms become more networked.

The Loosely Coupled Organizations. Hundreds-of-thousands of workers globally work as freelance workers through outtasking firms like Freelancer.com and CrowdFlower. Outtasking joins contingent staffing and the outsourcing of entire functions to create loosely coupled organizations. Work will not just span departments, but also span entire companies, as individuals from an amalgam of sources converge to achieve a shared objective. Post-PC infrastructures will allow these organizations to seamlessly blend when necessary, while remaining independent and autonomous business entities.

Loose coupling will also affect internal structures as social media and awareness technologies make it easy for people to see what is happening inside their organization across organizational boundaries. People from around the world will be able to contribute ideas, offer suggestions and create value outside of their regular work assignments.

Organizations may initially resist workers crossing boundaries and assignments, but so much value may be

derived from serendipitous events that eventually these interactions will become commonplace.

Line of Business IT. In many cases, the capabilities that enable work will be procured and integrated by the line of business, perhaps even the individual, rather than through IT. IT will concentrate on providing standardized data and secure networking to meet business needs, while the interfaces to that data become

more personal, driven by individual requirements that meet local business needs. IT will provide the technological context for the distributed work experience.

You Will be Evaluated by What You Do. The Post-PC World will increase the use of analytics to provide insight into how people work, not just what they work on. The business world is currently experiencing a “big data” boom as analysts point business intelligence engines at increasingly large volumes of data about customers, supply chains and all manner of biological and technological subjects. Very little work has been done to analyze the rich data stored in collaboration systems about how people work. In the Post-PC World analytics will be turned inward and outward, to better understand how people use collaboration software, how and where they spend their days, along with who they know, and how they interact through their social network.

Redefining the Office. The Post-PC workspace may remain physical in some cases, but over time, the virtual spaces spread across smartphones, tablets and other devices will be where work takes place. Devices and applications that adapt to the way people work, and the cognitive styles they employ, will be critical to creating customized work experiences that help people focus on what is important, discover who they need to include in their collaborative work, and determine what data will inform and inspire them. Workers will increasingly select applications that align with how they choose to work, how they conduct analysis and how they visualize data — personal applications that transform standardized data into personal experiences. The adaptive work experience will apply pattern recognition and other algorithms to communications and content to anticipate needs, prioritize communications and tasks, create context, identify relevance and index content for easy retrieval.

Social Productivity. Most business software is designed to increase the productivity of knowledge workers, much as factory machinery increased the productivity of industrial workers. Most economists clearly acknowledge that information technology produced solid results when it comes to knowledge worker productivity. But not all work is about accomplishing more with less. Some work is about discovery, and dialog, disagreement and divergence. The Post-PC World

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will be as characterized by changes in work expectations as by the devices people use to accomplish their work. Metadata about people's expertise, correlation of work products to profiles and presence information will create the ability for organizations to rapidly respond to change, to reconfigure at will, regardless of organizational definitions. Social productivity will drive innovation through increased serendipity, help people better focus on relevant information through social consensus and facilitate efficiency as workers collectively reconfigure work processes that get in the way of getting things done.

MEETINGS REIMAGINED

People spend a lot of time in meetings. In the Post-PC World knowledge workers may still spend a lot of time in meetings, but those meetings will be very different experiences. Do not think of meetings as a gathering of people in a single place. Meeting in the Post-PC World will be as often impromptu as planned, ad hoc as process-oriented, as likely rigidly run as completely chaotic. Meetings will take place in physical locations, over social media and in well-curated virtual meeting spaces. Meetings will be attended by people

on smartphones with personal video, by people with access to immersive telepresence, by people with high quality desktop or tablet video — and there will always be people who attending from where they are rather than traveling to a particular location.

Second-Screen Experiences. Single phone-based teleconferences or remote shared meetings will be complemented by second-screen experiences so that people can connect to sources and complementary content while staying engaged in the meeting. This will make for a richer experience as people participating in very distributed meetings will be able to do so, in many cases, with higher levels of participation than traditional in-place meetings. They will be able to retrieve and edit documents during the meeting, comment in realtime (without waiting for a turn) and invite others to the connect or the meeting itself, while the meeting is taking place. Second screens will permit flexibility while the primary experience offers context and continuity.

<i>A Glimpse Ahead: Meeting in a Post-PC World</i>		
<i>All</i>	<i>Some</i>	<i>None</i>
<ul style="list-style-type: none"> ■ Telepresence in all conference rooms. ■ Microphone arrays. ■ 3D displays or holographic projectors. ■ Second-screen experiences. ■ High quality surround-sound. ■ Room-based gesture sensors. ■ Wall-sized, interactive screens and active surfaces. 	<ul style="list-style-type: none"> ■ Home office with high-definition camera. ■ Personal 3-D. ■ Second-screen experience. ■ Remote devices to represent attendees physically in the room, or visualized avatars that act as video stand-ins. ■ High quality surround-sound. ■ Personal gesture sensors. ■ Personal interactive screens and personal active surfaces. 	<ul style="list-style-type: none"> ■ Hoteling or use of public hot spots to connect to work. ■ Personal device with various forms of glasses, headphones and immersion systems that create richer personal meeting experiences.
Cloud-based services across the experiences: <ul style="list-style-type: none"> ■ Meeting recording. ■ Simultaneous translation. 		

Table 1: Meeting in a Post-PC World will be experienced in different ways, depending on the capabilities of the environment where the meeting participants find themselves. Knowledge workers will be able to easily migrate from one environment to another, while the network and apps keep them connected and provide the best available services as they upgrade or downgrade their experience.

Any-Device Experiences. In addition to second-screen experiences, people will be able to easily transfer their collaborative experience from one device to another, enabling increased capabilities when entering a conference room, or support a more mobile experience when moving to a tablet or smartphone.

The Remote Representative. A device is not just a phone or a tablet. A device can be a remotely controlled robotic device like those being sold by AnyBot, VGo and iRobot. In the Post-PC World you may well find yourself seeing through the optical sensors of a robot that acts as your proxy, including scurrying off to meetings and hanging out in doorways to chat. In some fields, like healthcare, remote-controlled devices may augment the workforce by delivering healthcare monitoring and consultation to older patients at home as aging outstrips healthcare provider supply.

The Practice of Meeting. Many organizations developed meeting practices prior to their deployment of collaboration technology, and certainly before device technology enabled rich, mobile experiences. The Post-PC World will require a rethinking of meeting practices in order to better accommodate the virtual nature of meetings, and to effectively manage the meeting experience, from content to calendar, from agenda to minutes, that abandon paper-based assumptions in favor of shared environments that reflect the meeting in realtime, automatically producing shared documentation for future reference.

NEGOTIATING NEW BOUNDARIES

The boundaries between organizations already blur with outsourcing and the rise of contingent staffing. But working across company boundaries isn't always easy, which creates a reliance on tools, like e-mail, which can effectively traverse organizational boundaries. E-mail-based collaboration, however, results in broken workflows, lost information and a host of other issues. In the Post-PC World worker-centric apps will transform standards-compliant data into personal collaborative experiences, handling authorization and access with a universal sign-on that federates across trusted organizations. Although people working on projects across company boundaries won't need to worry about the technology getting in their way, they will have to become equally proficient at navigating company cultures and national cultures.

Living with Chaotic Work. The relationship between people and work is likely to change as innovation increases and globalization continues to reshape sourcing. Those items, combined with an increase in the speed of technological change, as well as the shift in consumers expectations, will impact work by making it less predictable and more chaotic—and where work starts and ends will also be more chaotic. It will be harder and harder to define multi-year projects as underlying assumptions shift, leading to a more ad hoc, opportunistic and emergent form of work.

Just-in-Time Learning. Social networks will connect nearly every worker, and if they don't connect, they will feel isolated, even ostracized. The benefits of belonging to social networks will largely outweigh any concerns. One of the most important benefits is access to people and expertise inside of the company, and

*BYOD is not a luxury for employees. It's an
integral part of any business strategy.*

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through interfaces to external social networks, a wide variety of expertise beyond the walls and organizational structures. All of these connections will solve a huge problem facing workers in the Post-PC World: keeping their skills current. It will be impossible for people to run out to a local college and enroll in a course, even an abbreviated course. The alternative will come in the form of just-in-time learning, which

allows people to identify the skills they need (often through workforce planning system results) and the resources available to help them get up to speed quickly on something new.

Video Storytelling. Video will become a primary medium for sharing knowledge through stories. And because video will be a major component of collaboration, search technology will increase in sophistication,

becoming better able to index video and audio files. Eventually, text-based transcripts will be routinely stored and time stamped so that video can be found through its content. The search engines will avoid irrelevant parts of the video, jumping to entry points based on the search that provide instant, contextual value.

Doing What's Right. Ethics will be a major topic in the Post-PC World as the transparency of data at all levels helps people understand the importance of doing the right thing in the work environment. This data transparency, however, isn't just about people, but about organizations. Social media will evolve into citizen regulation as the pressure of the crowd helps businesses also focus on doing the right thing.

A LOOK AHEAD

The Post-PC World is already upon us, but it will continue to evolve. Here are a few of the changes that aren't here yet, but will probably be here before we know it.

Sensors and Sense Making As any parent knows, several toys, from plush animals to board games, blur the lines between the physical world and the virtual one. Devices will bring that experience to work. Presence information will reflect the actual state of a person, not because the software responds to a change of status input by the worker, but because the device infers the state of the person based on where they are, and what they are doing. Flipping a phone on its face will signal an unwillingness to connect. Closing an office door assigned to you will broadcast a requirement for privacy. Hanging out in a common area will tell people you are available to meet.

Gestures and 3-D, Oh My. Sensors will not just pick up on state, but on intent, as the technology of the game room, like Microsoft Kinect, moves into the workplace and becomes a primary tool for interacting with business data. Three-dimensional information will be common, in shared spaces like conference rooms, as well as on mobile devices, many of which will eventually include their own 2D/3D projectors. People will use gestures to rotate and manipulate data in realtime and to navigate through user interfaces.

EXPERIENCE TWO

25-year old Fa'tema spends most of her time on the phone, doing everything but talking to people using traditional voice services. She rapidly responds to text messages, reviews content on internal collaboration sites, posts her observations and insights to a variety of social media services, connects with other professionals immediately after meeting them and takes a lot of pictures.

Fa'tema also loves video. Video chat. Video conferencing. Taking video.

Recently Fa'tema felt her phone buzz in the back pocket of her jeans. It was an incoming video call about a project task she was involved in. The team was a little stuck. As she answered the call, she saw Howard and he saw her. But Howard wasn't interested in Fa'tema seeing him, he wanted her to see the rather messy wall behind him covered in notes, drawings and images.

Howard explained he didn't have time to create a presentation. He wanted Fa'tema to validate his suggested approach directly from the raw material.

Unfortunately, the phone screen was a little small. Fa'tema quickly removed a tablet, flipped it on and then flipped the video from her phone at the tablet, which "caught it" so to speak. Howard then walked through his ideas to an approving Fa'tema.

Second-Screen Experiences. As with television synchronization on cable networks, or second-screen experiences on DVDs and Blu-ray discs, knowledge workers will be able to synchronize their devices and receive appropriate content without searching for it.

Not Ready for Your Close-Up? Then Let Your Avatar Represent You. Voice will still be important, most of it being carried wirelessly, or over IP networks. But video will play an increasingly important role as people seek richer, more personal experiences. Worried about getting dressed before a meeting? Don't be. Soon, video will combine with virtual reality to offer avatars that present a coordinated, fully animated version of the speaker. Software and sensors will map mouth and facial movements to the avatar. This visual translation will reside in the Cloud where it will service large in-room systems and personal devices.

Shared Control. The trade-off between owning a device and using that device to support work comes in giving the organization access to the device's capabilities. When connected to the network, a personal device may receive updated security features and get scanned for viruses. By coordinating between calendaring data and device use, facilities can anticipate, and rapidly adjust, cooling and heating to accommodate planned and ad hoc meetings. But the real pay-off will be IP-addressable devices in the room interfaces with a mobile device that configures itself to match the room's capabilities upon entry. Dial the phone, pass images to a projector, start recording or upscale phone to telepresence through a mobile device without ever touching any of the equipment in the room.

Emotional Tracking. Rather than raising your hand or typing a message about your displeasure with the speed of deliberation or your anxiety to leave and move on to your next appointment, emotional tracking software associated with a front-facing camera will monitor your mode and automatically indicate a general consensus about a meeting's "emotional status" to the group. Even when the camera is not used to broadcast an image, it can be used to capture subtle facial clues that accumulate evidence about a meeting participant's mood.

Passive Security. The Post-PC World might also be called the Post-Worried-About-Security-World as IT providers start to realize that putting the onus of security for digital assets on the individual reduces productivity, creates unenforceable policies and don't reduce intellectual property loss. Why? Because people work around security when the tradeoff comes between getting work done or protecting intellectual property. Moving security to the asset will let the organization control its access, regardless of how openly it may be shared.

Translation Everywhere. As the world goes more global, even people who speak the same language may not always say what they think they said, or be heard to say what they think they said. With improvements in real-time translation in the Cloud, people will be able to review translation results and correct or amend text or speech-to-text translations before they are shared.

THE STRATEGIC IMPACT OF THE POST-PC WORLD

The Post-PC World will not only change the day-to-day lives of knowledge workers, but the ubiquity of computing will greatly impact the strategic direction of many industries.

Retail, for example, will be reinvented around digital experiences.

- Build-A-Bear, recently started changing their bear-building experiences to include digital washing stations and interactive store-fronts. Their Kinectimals Bears transform a personally created toy into an interactive digital companion within the xBox 360 environment.
- Cisco's StyleMe augmented reality technology combines the physical and the virtual world, creating an interactive way for consumers to add accessories as they shop for clothing.
- Giant posters of groceries store shelves line subway stations in South Korea. Each product image includes a QR Code that can be snapped and added to a shopping list. By the time the traveler reaches home, Tesco's Homeplus subsidiary has delivered groceries to the front door.
- PepsiCo has developed social vending machines that allow shoppers to gift soft drinks, accompanied by a personalized text message or video, that can be redeemed at other social vending machines.
- Over 300 restaurants now use E la Carte tablets to help diners select from menus and then pay via a built-in card reader.
- The Melt, in San Francisco, allows customers to pre-order and sends them a QR code for their order that is scanned upon arrival at the restaurant, cutting down on lines and reducing order mistakes.
- Krispy Kreme Donuts created the "How Now" app that uses location services to notify patrons when the "light is on" so they can purchase fresh, hot donuts from their nearest Krispy Kreme location.

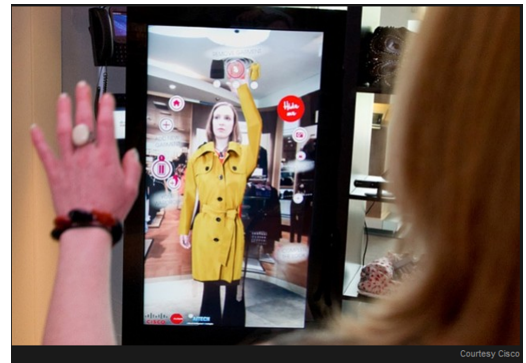


Figure 1: The Cisco StyleMe application helps consumer imagine how accessories will complement their clothing choices.

These are a few examples of how the Post-PC World is already changing the strategic direction of retailing. Retailers must now compete with pure digital shopping experiences that already offer lower prices in many cases, but that will increasingly offer virtual experiences that mimic those in the real-world. In order to compete effectively, digital technology will be deployed in physical locations to draw in shoppers, provide them with value-added services and keep them in stores longer through digital experiences that captivate, intrigue, and hopefully motivate sales.

A NOTE TO INFORMATION TECHNOLOGY: HOW TO GET READY FOR A POST-PC WORLD

The Post-PC World will happen if an organization actively participates or not. Organizations that want to get ahead of the curve by adopting devices today in new and effective ways, need to invest in IT infrastructure in order to create an environment that is amenable to the seamless integration of a wide variety of devices into the work experience. The following areas need to be at the top of strategic transformation agendas for IT leadership as the Post-PC world evolves:

- **Networking.** Organizations need to deploy robust wireless networking infrastructure so that their employees, partners and consumers can easily connect for collaboration, communications and experience

delivery. They need to build secure and reliable bridges and gateways that allow their workforce to rapidly exchange information with anyone around the world.

- **Standards and Interoperability.** In order to create meaningful connections between devices, organizations must adopt and deploy software that complies with standards at the protocols where available, use gateways where necessary and deliver programmatic access when required. Preparing for standards extends up the stack to business applications that enable collaboration and data analysis. Simply passing bits through standards will no longer be sufficient. Applications must be able to communicate, and to access data, in order to effectively deliver on their business value propositions.
- **Deployment Models.** Organizations will need to accommodate a variety of deployment models for business software, including on-premise software, hosted and managed, as well as Cloud delivery. Systems available across these various deployment models should not be considered silos, but tightly integrated, so that the user need not concern themselves with where data or a service originates. Once connected to an application, services should easily share data in order to help people form insights, make decisions or implement actions.
- **Mobility.** Devices, but more importantly, the apps that run on them, need to be given access so that they can become first class participants in the computing infrastructure. Beyond simple e-mail, mobile devices should have access to the data required to provide their users with business value.
- **Security.** One of the biggest concerns is the loss of data. Organizations must deploy remote management software and require password protection at minimum. For higher security needs, separate, locally encrypted data stores, and encrypted Cloud-services should be considered.

Beyond infrastructure, organizations must rethink the “Three Ps” of *policy*, *practice* and *permission*.

- **Policy.** Devices need to be password protected and install mobile device management features so that if a device is lost, or a device owner leaves the company, company data can be erased. Policy needs to be locally contextual. In China, for instance, e-mail on personal devices violates privacy laws. It is also important to clearly detail ownership assumptions and manage rights for devices.
- **Practice.** It will be important for managers, and managers of process, to actively redesign work experiences with technology in mind. That means thinking about how to serve distributed teams with well-managed meeting sites, transparently communicating through open and accessible posts, and considering a wide variety of device experiences when planning a realtime meeting, or delivering content for consumption.
- **Permission.** Empowerment doesn’t come from technology—it comes from people, both managers and peers. It is well and good to tell people they can bring their own devices and to deploy software to run on them, but if meetings require people to be on-site, or if only certain forms of communications garner responses, then people will perceive that they don’t have “permission” to work where, when and how — and will therefore feel unempowered. Organizations realize the permission to work differently when policy becomes practice, and practice becomes second-nature.

Perhaps staying up-to-date on technology is the most important part of preparing for the Post-PC World. Don’t let your end users get ahead of IT’s knowledge of the market just because most of the budget is spent on maintaining legacy systems. Dedicate a portion of the staff and the budget to experimenting and keeping up-to-date. You will be better positioned to service your organizations wants, and better able to fulfill their needs, if your

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knowledge of technology is current.

THE POST-PC WORLD IS ALREADY HERE

The Post-PC World isn't just about the replacement of PCs with high functioning tablets and phones. A recent Cisco survey reported that 89 percent of IT organizations enabled some form of BYOD to work¹. The Post-PC World will be characterized by the ubiquity of computing, carried personally, yes, but also available at nearly any destination. Hotel rooms, conference rooms, automobiles and airplanes will all offer computing capabilities that will enhance, augment and integrate with an individual's personal information environment. The Post-PC World will empower workers, engage their imaginations and give them permission to innovate. As work becomes a more transparent, interoperable and integrated experience, knowledge workers will co-create their work experiences, developing innovative ways to deliver value to customers and to the organizations that hire them. The Post-PC World sits in your shirt pocket, your purse or your nightstand. It isn't too early to start redesigning work, as the Post-PC World untethers knowledge workers and reinvents the work experience.

¹ BYOD: A Global Perspective Harnessing Employee-Led. Cisco ISBG. 2012.
[Innovationhttp://www.cisco.com/web/about/ac79/docs/re/BYOD_Horizons-Global.pdf](http://www.cisco.com/web/about/ac79/docs/re/BYOD_Horizons-Global.pdf)



Figure 2: Cisco's WebEx runs on a variety of platforms, including Apple's iPad. Users from different devices can easily converge in a conversation using whatever device they are already using.

TEN WAYS TO PREPARE FOR A POST-PC WORLD

1. **Put the right infrastructure in place.** You will need robust networking, interoperable systems and flexible security before you can realize value from even the most basic Post-PC World capabilities.
2. **Participate in the co-design of your work experience.** No one knows how you work better than you. In the Post-PC World, individuals will have a great deal of control over how, where and when they work. Knowledge workers should be given permission, and actively accept, the ability to work in ways that reflect their personal style, applications of choice and favored communications methods.
3. **Demand secure, unified communication and collaboration** in order to protect your assets as well as those of the client or employer.
4. **Integrate collaboration into business processes with a light touch.** If your collaboration technology gets too tightly integrated to an application, you won't be able to swap it out when the next round of innovation displaces it.
5. **Adopt IT delivery models that support standards where available, programmatic interfaces where necessary or gateways when required**—in that order. In a rapidly innovating industry like IT, standards will lag behind functionality. Use this rule-of-thumb to select the best choices among options, so the organization can realize value from its software investment over a longer period of time.
6. **Rethink the “Three Ps”: Policy, Practice & Permission.** Rewrite policies that protect data and define boundaries. Develop practices that empower and give people permission to do their work, the way that works best for them within the requirements for quality and shared communication.
7. **Select apps and devices that support the way you work.** For many people, this may mean using multiple devices, for others, converged devices may be more to their liking. Device configuration should not matter to IT, if security takes place at the network, application and data layers of the architecture.
8. **Master social networking.** Embrace new forms of communication and inter-organization connections in order to discover new business value, personally, professionally and for the organization.
9. **Embrace empowerment.** This is for individuals, not managers. Empowerment may be offered and enabled, but it requires you to take advantage of opportunities when presented.
10. **Don't be afraid to experiment.** Technology constantly evolves and disrupts. Leaders know that to understand changes in technology the organization, and the people in it, must actively engage with the technology. They need to see what works and what doesn't work, and get familiar enough to imagine how a new piece of technology could reduce costs, transform a transaction or engage a customer more fully. Only by experimenting, and sharing the learning from the experiments, can an organization truly stay ahead in the Post-PC World.

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Daniel W. Rasmus, the author of *Listening to the Future*, is a strategist and industry analyst who helps clients put their future in context. Rasmus uses scenarios to analyze trends in society, technology, economics, the environment, and politics in order to discover implications used to develop and refine products, services and experiences. His latest book, *Management by Design*, proposes an innovative new methodology for the design workplace experiences. Rasmus's thoughts about the future of work have appeared recently in *Chief Learning Officer Magazine*, *Government eLearning!* and *KMWorld*. Rasmus is an internationally recognized speaker. He has addressed audiences at CeBIT, The Front End of Innovation, The National Association of Workforce Boards, ProjectWorld, KMWorld, The CIO Association of Canada and Future Trends. He writes regularly for *Fast Company*, *iPhone Life* and *PopMatters*. Rasmus is the former Visiting Liberal Arts Fellow at Bellevue College in Bellevue, WA where he continues to teach strategy and social media.



Industry Analysis

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