



UNDERSTANDING THE LANDSCAPE

# Visual Collaboration in the Digital Workplace

**Gartner**

# WHAT IS THE DIGITAL WORKPLACE?

At Oblong Industries, we thrive on helping the modern enterprise understand and address the challenges of the rapidly changing work environment. We're providing the following research from Gartner, *Scenario: Enabling End Users in the Digital Workplace*, to do just that.

The research explores how IT leaders can promote employee agility and engagement through a consumerized work environment, a business strategy known as the digital workplace.

According to Gartner, the digital workplace is shaped by three driving forces: the physical world, the digital world, and personalization. Oblong's visual collaboration solution, Mezzanine™, intersects each of these categories.

The immersive Mezzanine workspace spans screens, walls, and even locations. With the simultaneous display of images, videoconferencing, and screen sharing from multiple devices, Mezzanine is a flexible and effective solution for the modern enterprise.

## Mezzanine and the Physical World

*"Technologies that enable users to interact with devices will increase in importance; of these, screens are a key point at which the physical intersects with the digital."*

Gartner Research, "Scenario: Enabling End Users in the Digital Workplace"

The more screens that teams have available to share their work, the more they can accomplish. The vast majority of meeting rooms in the enterprise have only one or two screens available for sharing. This is a bottleneck to the flow of visual information and an inhibitor to collaboration.

Mezzanine removes this bottleneck by providing an expansive digital canvas spanning screens and walls. Participants can easily display, move, and size live video streams and content across an entire room, not just one screen on one wall. When you can easily see and interact with your devices and engage in conversations around live data and applications, more information is shared, more ideas flow, and more work gets done.

*"When someone comes to your office to learn your vision of the future, it's crucial they feel like they've walked into the future, not the past."*

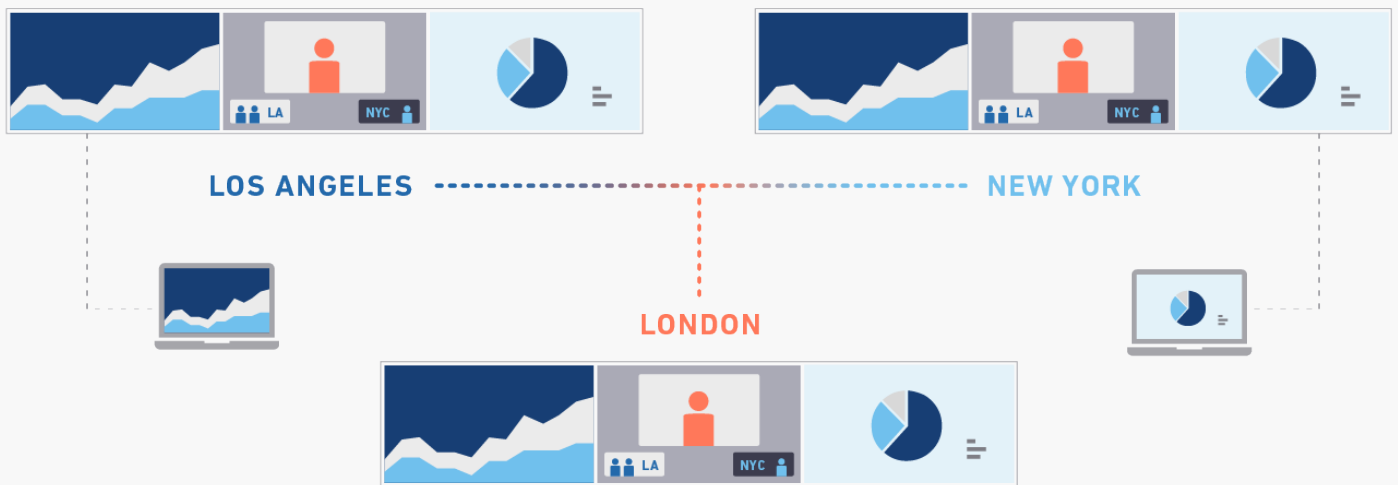


**IAN ROGERS**  
CEO, Beats Music

# Mezzanine and the Digital World

*"Some of the key investments that will ensure that [digital workplace] elements blend into a seamless whole include...Creating a collaboration environment that enables users to communicate, interact and share data in the widest variety of ways from the widest variety of locations."*

Gartner Research, "Scenario: Enabling End Users in the Digital Workplace"



With today's distributed workforce, information must be aggregated and shared across global endpoints. For teams in different locations to be on the same page, they must all be looking at the same page.

Only Mezzanine delivers Infopresence™: the ability to connect your teams in a common workspace. Regardless of which Mezzanine room your teams are in, they can add, view, and interact with content as if they were all side-by-side. Teams disconnected in the physical world, can fully engage in the digital world.

Save workspaces to resume meetings where you left off or load them in other Mezzanine rooms. Export workspaces to .pdf to share meeting materials and takeaways outside of a Mezzanine room.

No matter the circumstances, Mezzanine ensures your digital meeting content can be shared and accessible across your distributed organization.

"By working with Oblong to create a network of Mezzanine rooms within our global agency network, **we are able to ensure our teams are able to deliver different and better solutions wherever and whenever in the world it is required.**"



**NIGEL MORRIS**  
CEO, Dentsu Aegis Network  
Americas and EMEA

# Mezzanine and Personalization

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*"Invest in enabling a multimodal collaboration environment."*

Gartner Research, "Scenario: Enabling End Users in the Digital Workplace"

Most meeting rooms are optimized for presenting static slides, divorcing employees from the devices and applications they use every day. To maximize engagement and productivity, your employees—whether local or remote—must be able to access and share all relevant data from their preferred devices and applications simultaneously. Mezzanine embraces BYOD and multi-participant control.

You have the freedom to choose the device you are most comfortable with to participate. Share your laptop screen by plugging in or via the Mezzanine Screencast app. Use your iOS/Android device to annotate workspace content. You can also upload and interact with images directly within the Mezzanine workspace.

With multi-participant control, you can work the way you want and interact with colleagues in an organic conversational fashion. There's no need to pass the ball—Mezzanine allows team members to work simultaneously. Don't be confined to a linear, serial work process where only one presenter has control at a time. Open parallel lines of communication and make better decisions faster.

"Since installing Mezzanine, the game has changed. Bottom line, **it makes collaboration easier, presentations more dynamic, and meetings more effective.**"



**TAIDGH McCLORY**  
Senior Vice President/Partner  
CBRE New England





# BUILDING A DIGITAL WORKPLACE

## The Accenture Connected Analytics Experience

### What is the Accenture Connected Analytics Experience?

The Accenture Connected Analytics Experience is an immersive and collaborative analytics capability that makes data more accessible and engaging, helping insight-driven businesses make faster, more informed decisions.

### What does the Accenture Connected Analytics Experience do for customers?

The Experience is designed to make analytics easier to understand and expand the range of business users who can undertake an integrated analytics journey—from C-suite to functional managers to data scientists. By transforming their relationships with data, users with a variety of skillsets can collaborate on a specific challenge in an analytics environment, more easily examine and interpret the insights via data visualizations, and innovate through data-driven exploration and decision-making.

### How is Oblong Industries' Mezzanine involved?

Mezzanine enables the immersive environment for the Accenture Connected Analytics Experience. Mezzanine is a visual collaboration solution that defines the next era of computing: multi-user, multi-screen, multi-device, and multi-location. Through Accenture's immersive environment, Mezzanine helps make analytics more accessible to users so they can find the hidden value in their data and pursue outcomes in real-time, either in-person in the room, in connected rooms via Infopresence, or remotely on their preferred devices.

# ABOUT OBLONG INDUSTRIES



John Underkoffler, CEO  
Cooper Hewitt National Design Award Winner  
for Interaction Design, 2015

Founded in 2006, Oblong Industries has created the platform for a new era of spatial, distributed, and collaborative computing. Our technology was the basis for the computing systems depicted in the film *Minority Report* and has roots in more than two decades of research at the MIT Media Lab.

Mezzanine is Oblong's visual collaboration solution, and it's the only product of its kind to link locations, teams, and content in a shared immersive workspace. Customers include Accenture, IBM, NTT, Dentsu Aegis Network, and Beats Music. Oblong is privately held and is headquartered in Los Angeles, California.

## LET'S CONNECT

Is your company seeking a more innovative way to engage with clients and collaborate across the organization? Experience visual collaboration with Mezzanine.

Schedule a demo at one of our thirteen regional offices. Visit [oblong.com/demo](http://oblong.com/demo) or call **1-323-431-5059**.

Atlanta, Boston, Boulder, Chicago,  
Detroit, Houston, Los Angeles, Menlo  
Park, New York, San Francisco,  
Washington D.C.





# Scenario: Enabling End Users in the Digital Workplace

STEPHEN KLEYNHANS, LESLIE FIERING

Core Research Note G00274118  
30 April 2015

As IT leaders and planners develop their roadmaps for future endpoint computing investments, aligning those plans with digital workplace initiatives will be critical to ensuring that employees remain productive and are able to adapt to rapid changes in their working environments.

## KEY FINDINGS

- The standardization of a consistent operating environment is yielding to personalized ecosystems.
- Successful physical workplaces will enable personal productivity, as well as encourage collaboration and spontaneous interactions with co-workers.
- Technologies that enable users to interact with devices will increase in importance; of these, screens are a key point at which the physical intersects with the digital.
- The digital workplace is pushing the endpoint application environment well beyond traditional enterprise applications.

## RECOMMENDATIONS

- Invest in enabling a multimodal collaboration environment.
- Ensure that application development and purchasing strategies accommodate a multichannel, multidevice digital workplace.
- Make risk analysis a core security skill set to ensure that the level of security is appropriate to the level of risk.
- Create a self-help culture.
- Look for opportunities to pilot Internet of Things initiatives that enhance the end user's physical workplace.

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Invest in Multimodal Collaboration Environments

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Make Risk Analysis a Core Security Skill Set

Create a Self-Help Culture

Look to Pilot IoT Initiatives



# ANALYSIS

The digital workplace is defined as a business strategy that promotes employee agility and engagement through a consumerized work environment. As enterprises develop their roadmaps for future endpoint computing investments, incorporating the digital workplace into those plans will ensure that employees remain productive and can adapt to rapid changes in their working environments.

IT organizations have long understood the impact of going digital (e.g., devices, apps and collaboration tools) on how users perform their jobs. However, a broader perspective will be required in the future. When viewed from the end user's perspective, the trends and technologies shaping the digital workplace fall into three major categories that intersect and eventually blend seamlessly in ways that engage users and support productivity in the digital workplace (see Figure 1):

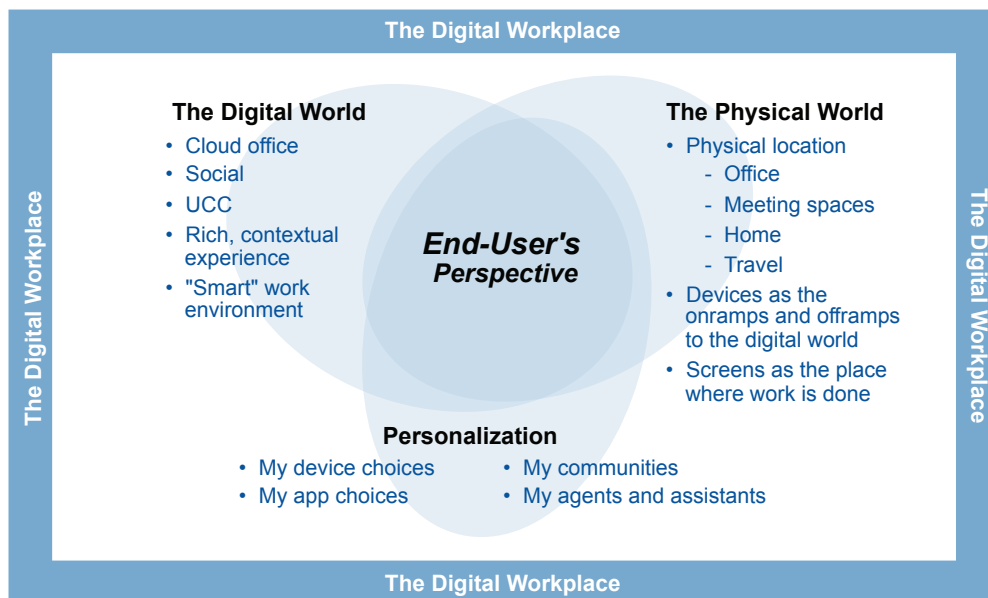


Figure 1. The Digital Workplace From the End-User Perspective  
Source: Gartner (April 2015)

## PERSONALIZATION

Comes down to choice. Users are increasingly forming their own opinions on which devices and apps they want to work with, and which work style enables them to be the most productive.

## THE DIGITAL WORLD

The data that must be collected, aggregated and turned into useful information, then delivered to users; the processes and tools to achieve this; any aspect of managing digital content that promotes an organization's business goals.

## THE PHYSICAL WORLD

The devices that are used to do work; the places where work is done (e.g., at the desk, in meeting rooms, at home or on the road); and the physical infrastructure that supports work, collaboration and access to the digital world.

Some of the key investments that will ensure that these elements blend into a seamless whole include:

- Creating a collaboration environment that enables users to communicate, interact and share data in the widest variety of ways from the widest variety of locations.
- Building and buying applications that work across a wide range of device types, screen sizes and input/output (I/O) modes, as well as deliver the appropriate user experience and level of information across various locations and use cases.
- Moving security from a technology-driven, lockdown mentality to one based on assessing the level of risk for any given application or use case, the value of the particular data involved and the business return to determine the appropriate level of security.
- Creating a self-help culture that enables users to get just in time (JIT) answers or training to maintain optimum productivity and reduce the drain on IT service desk resources, as the level of device, application and service diversity continues to climb.

## Personalization

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### STANDARDIZATION OF THE CONSISTENT OPERATING ENVIRONMENT IS WANING

Historically, standardization was IT's main strategy for dealing with end-user computing. If everyone used a narrow range of devices and applications, testing and support were simplified, and problems could be easily understood. Scalability was enabled, because even though more support requests were coming into IT, the requests still fell within the same narrow range and could be readily handled.

The world is changing. Users are asking for a broader range of hardware, software and services to get their jobs done. Consumerization means that the newest and most interesting technologies are coming to consumers first.

Consumer hardware choices range from "glanceables" (e.g., watches) to affordable 60-inch, living room flat-screen TVs. Users are connecting these devices through cloud-based services, entertainment options and social media tools to create their individual personal clouds. Users expect to carry this customized, personalized way of working to other areas of their lives. This includes bringing them into the workplace. The intent is not to flout IT rules, but to work in ways that help their productivity.

### CHALLENGES TO IT

- Integrating the growing array of devices, apps and cloud-based services that users are introducing into the workplace
- Creating policies and governance; determining the appropriate levels of security, manageability and support
- Establishing workable boundaries that allow freedom of choice for employees without compromising IT infrastructure and operations (I&O)

# The Digital World

## THE DIGITAL WORLD IS CHANGING THE NATURE OF WORK

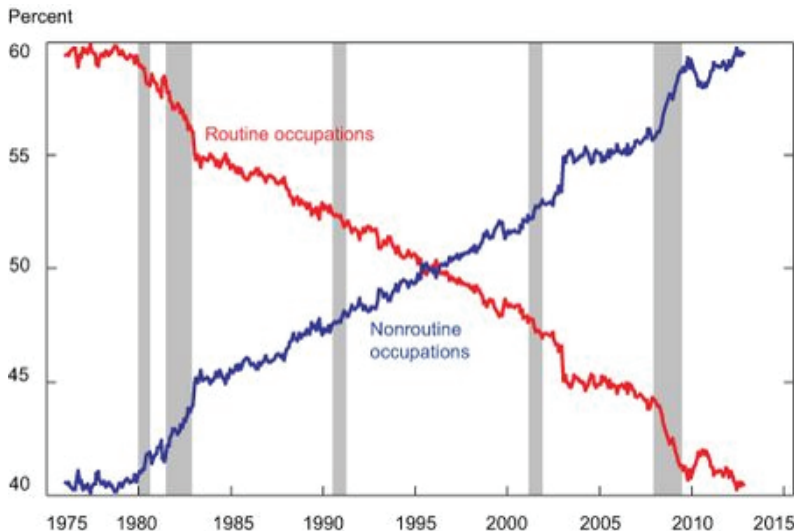


Figure 2. The Rise of Nonroutine Work  
Source: Federal Reserve Bank of New York (2013)

As jobs done by structured task workers continue to be automated, there is a greater shift toward knowledge work and nonroutine jobs (see Figure 2). Everyday tasks, such as expense reporting, are now often done on smartphones as the expenses are incurred. Many processes involved in capturing, collating and processing information are also being automated — all because the relevant data being is digital and can be freely shared.

For today's knowledge workers, work is no longer a destination, but an activity that they expect to be able to do whenever and wherever they are. Mobile technology has freed users from being locked into dealing with tasks from specific locations.

Rather than focus on a single job with a single team, knowledge work is increasingly characterized by ad hoc and virtual teaming, whereby projects and partners constantly change. In many cases, the partners are in other offices or geographies and never meet face-to-face.

Involvement in multiple projects of varying lengths and levels of difficulty is becoming the norm. This goes beyond the in-building desk worker. Route delivery staff, formerly responsible simply to deliver and drop off product, are now being trained in both sales and merchandising.

As a result, the kinds of tasks and the required skill sets are changing. Digital literacy (which is now becoming the worker's "ante" for joining the workforce) is being emphasized, including analysis, collaboration, and the ability to work with and manage others. In many instances, specialists are giving way to "versatilists," who can work in a variety of situations and cope with frequent change.

The volatility of the work environment, the ability of users to work from anywhere and the growing demand for versatilists has led many workers to change jobs frequently for higher pay, and, more importantly, this often results from the desire to capitalize on opportunities to acquire new skill sets and increase social networking.

## CHALLENGES TO IT

- Helping HR onboard new employees more quickly and providing JIT training for employees to learn new skills at the time of need, without spending time in formal classroom training
- Enabling an environment that supports creativity and collaboration for a large base of tech- savvy workers
- Ensuring that complex, automated tasks remain easy-to-use and reliable

## THE DIGITAL WORKPLACE IS PUSHING THE ENDPOINT APPLICATION ENVIRONMENT BEYOND ENTERPRISE APPLICATIONS

Providing enterprise applications is no longer sufficient in the digital workplace. Although IT will always be charged with providing traditional business applications, new tools for collaboration, communications, information access, data sharing and synchronization are being added to the mix. Increasingly, cloud-based tools and services, selected by the lines of business and provided by external providers, will be required to interact with the digital world and to get work done. Although not all of these will have a footprint on the user's device, they will require access to cloud-based apps, synchronization and data storage. To help users navigate this complex environment and provide control, enterprises will increasingly turn to workspace aggregators. These will provide one avenue by combining resources from the cloud, Web and enterprise to create an integrated environment.

Further complicating the environment will be user-provisioned, consumer-based tools that will find their way onto users' devices. Users will expect all of their applications to integrate with their individual personal clouds. All users will have personal clouds made up of the services and identities they use throughout their digital lives. It will be the enterprise's responsibility to decide on the degree to which personal cloud drives, archives and services will be integrated.

For IT organizations, the challenge will be to secure the enterprise's digital assets across the devices and platforms that users select. At the same time, IT must work with users to understand the essentials needed for business, and provide the level of freedom that users require to experiment and extend their environments. A key to this will be the implementation and management of architectures and approaches that are aligned with mobile techniques and traditional PCs (see "Learn the Taxonomy of Mobile and Endpoint Management Architectures").

### CHALLENGES TO IT

- IT may not control or own all of the applications, services and resources users will employ in the digital workplace; increasingly, IT's responsibility will be to ensure the security of the enterprise's digital assets.
- All collaboration tools must be scaled across the multiple modalities of device, network, location, platform, etc.

## The Physical World

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### THE NATURE OF THE PHYSICAL WORKPLACE IS CHANGING

Mobility and globalization have radically changed where people can and are expected to work. Mobility makes it easier to work from home, while traveling or from a remote office some or all of the time. Colocation in the same office or campus is no longer always the norm. Even in organizations that expect workers to be in the office full-time, globalization has meant that teams may work in different regions and time zones.

## SUCCESSFUL WORKPLACES ENABLE PERSONAL PRODUCTIVITY, COLLABORATION AND SPONTANEOUS INTERACTION

There has always been an emphasis on planned interactions in meetings in a physically colocated situation. These are accommodated by meeting spaces from large conference rooms to ad hoc huddle spaces (smaller work/conference areas that accommodate up to four people). (The average meeting in North America involves two or three people, so huddle rooms are necessary.) The digital workplace and the changing nature of work are shifting the emphasis toward accommodating remote interactions, via infopresence and telepresence, as well as real-time and ongoing “conversations” with tools that can store and forward work sessions. This is where the digital world and the physical world intersect. The challenge in choosing collaboration tools will be finding the ones that can accommodate the greatest number of physical locations, such as large immersive meeting rooms, huddle rooms, individual screens for remote workers or workers “attending” meetings from their office desks.

In addition to formal meetings, there is the value of unscheduled spontaneous meetings — what used to be called “water cooler” sessions — that can take place anywhere, such as the kitchen, break room, cafeteria or elevator lobby. The challenges are locating these ad hoc meeting areas at the traffic intersections of groups that need to be sharing ideas and leveraging the spaces with “smart screens” and other ad hoc collaboration tools.

Although IT may not be ultimately responsible for facilities design, it can make valuable contributions, particularly in managing and analyzing data on how users work. Sensor technology is already available to monitor presence and traffic and to record and analyze space utilization to facilitate more-targeted design. By collecting anonymous traffic info as users move about a building, environmental controls such as HVAC and lighting can be adjusted, and data can be collected to assist with future space-planning needs. As the Internet of Things (IoT) evolves, the amount of data with which IT will need to deal will explode, requiring new analytical skills.

Beacons can enable users to pinpoint their location within an unfamiliar office facility and guide them to a specific resource (e.g., available meeting room, printer or coffee).

## SCREENS ARE WHERE THE PHYSICAL AND DIGITAL WORLDS INTERSECT

Client devices are the point at which the physical meets the digital, and screens are one of the key places users interact with the digital world. Screen size is often a determining factor in whether users are carrying a particular device at the time of need and in the types of interactions that are possible (see Figure 3). As graphics and video are increasingly integrated into digital content, the importance and proliferation of screens will continue to grow in the digital workplace (see “Predicts 2015: Endpoint Technologies”).

## CHALLENGES TO IT

- Creating the infrastructure to support growth in the types of collaboration environments and tools
- Developing IoT skills as they relate to user workplaces
- Creating a working relationship with space management groups within real estate regarding infrastructure requirements and future enablement options

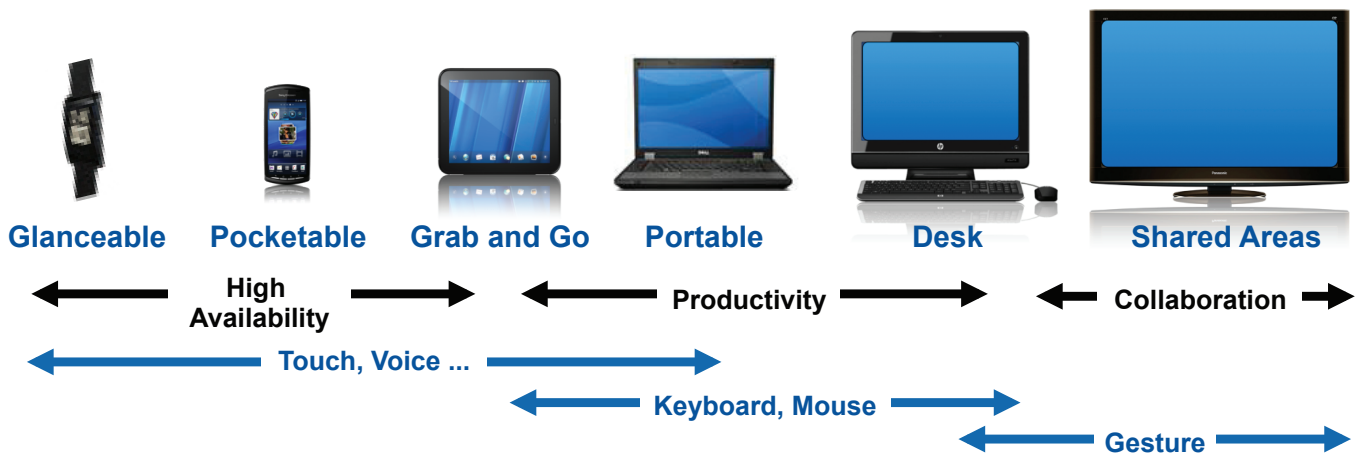


Figure 3. More Screens in More Places  
Source: Gartner (April 2015)

Not only can a single user own and work with multiple devices that have screens, multiple screens attached to a single device are now commonplace on many user desktops. At the same time, larger screens are becoming more affordable, allowing them to proliferate beyond the user's desk or pocket. Meeting room "walls of screens" are becoming affordable for meeting and collaboration rooms, as are kiosks in public spaces, information monitors in hallways, streaming video in waiting and break rooms, and panels indicating a meeting room's status.

The larger screens can enable immersive telepresence in which a 40-inch (or larger) screen can provide videoconferencing at 4K resolution, making the remote collaborators appear to be in the room. Even more prevalent is "infopresence" where the data displayed on a screen in one location is instantly available in other locations.

Screens are also becoming "smart." Smart screen products, such as Microsoft's Surface Hub, are becoming rapidly less expensive, and can include features such as electronic whiteboarding, simultaneous display input from separate devices, multipoint touch, shared remote sessions, session archiving and replay.

A key enabling technology for this new screen-filled world will be wireless video streaming. Support for WiDi and Miracast, which enable the wireless beaming of whatever is on a device's screen to a bigger or different screen, is now built into most new large displays and projects, PCs and even phones. For screens that lack support, a small, inexpensive receiver can be added. Eliminating the wires affects how cubicles and shared spaces are set up, and can affect what users need to carry when traveling

## CHALLENGES TO IT

- Providing sufficient high-speed bandwidth to support anticipated growth in video traffic Developing apps that will run across all form factors and related screen sizes

# General Recommendations

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To enable the digital workplace for end users in a way that keeps users productive and engaged, IT must be prepared to prioritize investments in several key areas. These investments involve upgrades to infrastructure, a collection of new technologies, and, in some cases, organizational and process changes. Enterprises need to develop a roadmap that clearly articulates how these investments will be prioritized and delivered.

## INVEST IN MULTIMODAL COLLABORATION ENVIRONMENTS

In the digital workplace, collaboration presents a spectrum of challenges, from real-time telepresence of videoconferencing to the async/time shift mode of email. Sessions may be transient or need to be archived, available for editing for one or many, or simply available for viewing—and everything in between. The ultimate goal is to make friction-free, anytime/anywhere collaboration available. Solutions require the supporting infrastructure of the physical world, along with a variety of collaboration enablers from the digital world.

### Recommendations:

- Leverage unified communications and collaboration (UCC) infrastructures to provide support of audio and video data presentation across a variety of device types, locations and communications channels.
- Ensure that adequate bandwidth is provided for the explosion of high-definition video and deployment of multiple screens on desktops, in conference rooms and in public spaces.
- Enable a variety of collaboration tools that address a range of collaborative scenarios.
- Recognize that consumer and social media tools are evolving faster than IT can handle the changes. Because many of these tools may provide business value, ensure that you can support and embrace new tools as they become available.

## ENSURE THAT APPLICATION DEVELOPMENT/PURCHASING STRATEGIES ACCOMMODATE THE DIGITAL WORKPLACE

Workers in the digital workplace need to access business services or content on any device and in any situation. This means that applications must be designed for a multichannel, multidevice world. However, doing it correctly implies more than just the ability to write apps natively or port them across multiple platforms. It involves rethinking the flow of applications, the specifics of the user interface and the experience, thinking through the situations in which people will be using the app on different devices and bringing the elements they will need to the surface. Enterprises need to look beyond basic coding to understand the subtleties of good design and workflow, and to ensure that applications don't just exist across platforms, but succeed on each platform (see Figure 4).



**Different Screen Sizes Don't Just Determine the Size of the Font, but Also the Kind of Information We Want to Consume.**

Figure 4. Delivering Applications via a Multichannel, Multidevice Strategy  
Source: Gartner (April 2015)

### Recommendations:

- Be realistic about the fact that applications can and will be used and viewed on a range of platforms (from one-inch, glanceable smartwatch screens to 84-inch, shared conference room screens) and accessed via a range of channels (from high quality of service [QoS] enterprise networks to low-bandwidth cellular networks).
- Consider the most likely range of devices (along with screen size/resolution, input modes and security requirements), as well as the user type and use case for each application.
- Consider and define the characteristics of the most likely delivery channels.
- Be clear about the context in which applications will be used in each of these cases to provide a clear rationale for which features and portions of the apps will be supported on which devices. For example, for a weather app, people will use their phone to find out if they need a coat or an umbrella for the day; on their PCs, they may want to look at forecasts and a weather map.
- Plan to provide different types of user experiences on different form factors in terms of I/O, navigation, screen layout, load times, etc.; develop responsive design skills to give applications the ability to adapt on the fly to where and how they are being used
- Be diligent about developing user experience developer skill sets. (A good user experience combines good technology with great application design and testing.)
- Even in cases in which apps or applications are being purchased, instead of developed in-house, apply the same multiplatform, multichannel considerations to the selection criteria.



## MAKE RISK ANALYSIS A CORE SECURITY SKILL SET

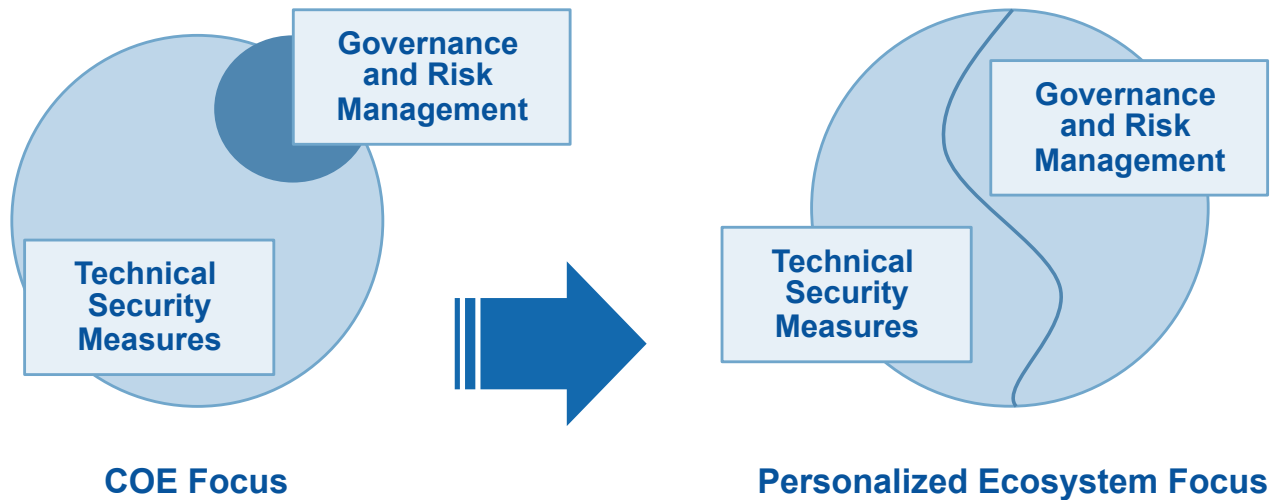


Figure 5. Moving to a More Flexible Security Environment in the Digital Workplace  
Source: Gartner (April 2015)

As the digital workplace embraces personalization (along with many of the consumer aspects that accompany it), security practices will need to shift from reliance on technology and endpoint lockdown to the accommodation of diversity by applying security levels commensurate with the level of risk and the sensitivity of enterprise data (see Figure 5). There must be greater reliance on employee understanding of security, as users increasingly cross many different workspaces, both enterprise and personally owned. HR policies must be updated to reflect this new reality.

Even though this diversity comes with increased security threats, the enhanced convenience and productivity make them impossible to eliminate or totally ignore. The purpose of risk analysis is to apply a range of security levels based on the sensitivity of the data, the security posture of the device and the acceptable level of risk. This will balance the running of the business and the protection of the business.

### Recommendations:

- Blend technical security with governance and risk management to achieve a holistic security policy.
- Use risk analysis to determine the appropriate level of mitigation for data use from end to end—e.g., at rest, in transit and in use. (Your data may be residing on individuals' cloud drives or on unsecure file sharing apps.)
- Review the security posture of all user devices and applications integrated in the digital workplace, tightening internal security on some subsystems, while relaxing security on more peripheral systems. This will depend on the sensitivity of the data, the access privileges of the users and the trust level of the mobile devices being used
- Consider the whole spectrum of secure options—from locking down the device (trust the device), to secure containerization (trust the container), to app wrapping (trust the app), to a Web portal (trust the Web), to trusting nothing and relying only on the virtual desktop infrastructure (VDI) or server-based apps. These are all realistic options under the right circumstances, depending on the situation.

## CREATE A SELF-HELP CULTURE

One of the demands of the digital workplace is to find new models to support the diversity that personalization brings (see “IT Service Desks Must Evolve for the Digital Workplace”). IT simply doesn’t have the resources to make everything work for everyone. The solution is to be more targeted in the support that IT does provide (see “How to Manage Support Using Gartner’s Managed Diversity Model”), as well as to effectively leverage automated tools and the embedded skills in the user base (see “Implement a Self-Help Strategy to Support BYO and Managed Diversity”). Much of today’s workforce is digitally literate and used to supporting their own personal technology. This isn’t about offloading IT’s job to the users, but rather providing JIT resources that free the users to get on with their jobs, rather than being bottlenecked waiting for IT (see Note 1).

### Recommendations:

- Develop a self-help portal that offers a wide range of technical information and “fixes,” along with links to any other available, external Web-based resources or third-party support groups.
- Be liberal with the use of short (ideally, about two minutes) video clips that provide IT training or resolve frequently recurring support problems. Users will gladly accept videos created internally on a high-resolution smartphone if “how-to” is really addressed. External links to YouTube or tech blogs are also great sources of information.
- Publicize the self-help tools and drive traffic to the portal. Ensure not only that users are aware of the tools and the portal’s existence, but that they also know how to use all the self-help options.
- Leverage underground and “shadow” support by letting the groups communicate which fixes are needed, helping them create the fixes and then letting them disseminate the fixes. Publish the fixes on the portal and use the shadow support groups as one more way to notify users of the portal resources.
- Plan to foster and work with the shadow support groups, but do not try to run them or give the impression of “spying.”
- Develop a plan for ongoing curation of the self-help portal. Tier 1 service desk agents may welcome the assignment as a weekly or biweekly break from the phones.
- Start piloting expert bars (along the lines of genius and guru bars). These can range from pop-up events in cafeterias or public places on an ad hoc or recurring basis to a permanent walk-in center. Vendors are often willing to support the pop-up expert bars as a way to demonstrate their products. Ensure that anyone working at the expert bars uses the opportunity to direct users to the self-help portal.

## LOOK TO PILOT IOT INITIATIVES

Sensors and beaconing technology have been rapidly climbing higher on the Hype Cycle as part of the IoT. Sensors collect information about a person or environment and beacons are markers that broadcast a piece of information, such as an asset identifier or a specific location (see “The Internet of Things and Related Definitions”).

### Recommendations:

- Work closely with real estate and space management to stay abreast of renovation and new building plans that could become the focal point of IoT and workplace-related sensor planning.
- Volunteer IT staff office space for prototyping and piloting.
- Look for early wins in HVAC and lighting for cost savings and to provide higher levels of employee comfort through rapid environmental adjustment at the zone level, rather than across a whole floor. Lighting plans can be applied to different zones to accommodate different types of tasks. Blinds can be adjusted according to the direction and intensity of sunlight.
- Investigate growing opportunities to link presence sensors with resource management software (often used for seating and room reservations) to map and analyze space utilization.
- Use beacons to track the location of an asset through time delay of arrival and other methods to meet the location needs of a business process.
- Work with HR and legal staff when location and human presence sensor networks are deployed to ensure that no privacy or legal violations occur. If unique individuals are tracked, allow employees to opt in. If unique individuals are not tracked, but only general traffic, inform employees to avoid misperceptions about the invasion of privacy.

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## NOTE 1: SELF-HELP OPTIONS

Create a self-help portal:

- Technical documentation
- Frequently asked questions
- Diagnostic tools
- Links to external information sources
- Links to self-service applications (e.g., password changes) Online courseware catalog/signup

Foster self-help or “shadow IT” communities:

- Identify existing communities
- Train and support community leaders Focus on mentoring users
- Help establish (but don’t run) new communities
- Monitor communities and be proactive addressing their issues
- Avoid the temptation to run or control the communities

Involve Tier 1 agents:

- Design self-help portal
- Liaison with self-help communities
- Monitor community forums, social media
- Use most popular platforms
- Assign as a break from call center two to four days/month

Use innovative approaches:

- Create walk-up “Expert Bar” support centers Create video instruction
- Promote using social media
- Create rich mobile self-help apps

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