Abstract

Consumerization isn’t a trend—it’s a global reality with far-reaching implications for IT. To be successful, IT organizations must embrace consumerization with a new approach that goes beyond Bring Your Own Device (BYOD) initiatives. With a renewed focus on user experience, IT can empower users to create, consume, and share data using any device, in any environment.

Through this shift, IT has the opportunity as a strategic partner to champion new ways to collaborate across the enterprise and improve business productivity. And as we move into the future, IT must balance flexible user choice with secure, cost-effective management standards across the enterprise.
Vision Paper
Future Implications of Consumerization in the Enterprise

Intel’s Perspective on the New World of IT
Contents

4  Taking a New Approach
5  With Change Comes New IT Requirements
6  Embracing the Changing Role of IT
7  Reframing Device Choice
9  Intel Flexes to Stay Ahead of the Game
10 Looking Forward
Taking a New Approach

Consumerization isn’t a trend. It’s a global reality, and it’s well on its way to becoming a permanent facet of enterprise business. It has been identified as one of the biggest technology influences of the decade, and CIO.com stated that its level of disruption is a force on par with mobile, social, and cloud.

Consumerization is being continually shaped by a number of unstoppable forces, from technically savvy workers and younger generations in the workforce to a range of innovative mobile devices, such as smart phones and tablets, being used alongside PCs and desktops. It’s also driven by constant connectivity: We’ve grown accustomed to having network access from nearly any location, at any time, on any device.

By the end of the decade, it is predicted that there will be over 30 billion devices permanently connected, with another 150 billion intermittently connected. This ever-present data availability promotes an expectation of instant accessibility to required data—and users want this data on the device of their choice. And all of this is having, and will continue to have, a profound impact on enterprise IT organizations.

Putting User Experience First

While many equate consumerization with BYOD, Intel has embraced a broader vision. At Intel, we see consumerization extending beyond devices to include the entire computing experience: The technology we use in our personal lives—applications, hardware, and even Internet services—has a distinct impact on the technology experience we expect at work.

Therefore, to better align the at-home technology experience with the at-work experience, IT organizations must adopt a new, user-centric approach to enterprise technology. This new approach is a powerful opportunity for IT to become a proactive force in driving the success of the business and its employees—instead of being perceived as a roadblock to new technologies and positive change.

Taking a user-centered approach will also shape IT as a strong, strategic partner in the business. IT will have fresh insights into boosting productivity by delivering the right tool for the job, as well as have the ability to accelerate access to and integration with emerging solutions.

Five Steps to the Consumerization of IT

When it comes to consumerization, it’s critical to take a proactive approach. Find out how to adopt a user-centered strategy—one designed to optimize the computing experience and keep the user productive on any device—all while maintaining the performance, security, and manageability that IT demands. Read the [consumerization planning guide](#) and learn to embrace the inevitable.
With Change Comes New IT Requirements

Faced with the increasing pace of business and technology, IT is at a crossroads and must choose to either "lead the parade or get trampled by it." To succeed, IT must step up to meet new requirements for the future state of the business for users, devices, and business units.

User experience is the most important requirement. Users need access to corporate data on any device, with the ability to stay productive from any location, at any time. Collaboration with coworkers and partners should be intuitive, fast, and easy. To facilitate this collaboration and improve decision making, users must be able to create, consume, and share data without any restrictions across a range of devices and environments. And social media plays a huge role. This once-personal technology experience has moved directly into the work environment as a true collaboration tool. Users rely on it for crowd-sourced decision making, peer connections and networking, customer interactions, and business-to-business collaboration.

As collaboration becomes a key part of business success, so does mobility. Today’s workers are performing more work away from their desks, whether it’s on the shop floor, at a client’s location, at home, or while traveling. The rapid rise in the number of portable devices—from smart phones, tablets, Ultrabook™ devices, and laptops, to embedded computing technology in sensors, kiosks, and readers—demonstrates how the nature of how and where we work is forever changed. And with this move to mobility comes a direct impact on device requirements.

First, the device should be easily portable, thin, and light. Users require devices with long battery life, with instant-on technology so that data and services are immediately accessible. The device experience should be a natural fit for the user within his or her job role. Users now expect to interact with computing technology in a more natural way, including having the option of touch or type capabilities on the same device. Today, touch technology is becoming more and more pervasive alongside traditional KVM (keyboard, video, mouse) input/output control in the near future, voice control, facial recognition, and advanced digital pen technology will become commonplace.

Challenge Meets Opportunity

For IT, all of these changes require a shift in approach that focuses on delivering an improved user experience while supporting and meeting core business needs. These needs are many: facilitating business growth, innovation, and productivity; maintaining data and device security; delivering enterprise-wide manageability, compatibility, and collaboration systems; and establishing and meeting regulatory compliance, in addition to meeting cost-efficiency standards across the organization.

It’s a tall order. To succeed, IT must have a deep understanding of the business so it can help align technology needs with the needs of the enterprise. When business requirements and core capabilities are met successfully, IT is empowered to present new and exciting technology options proactively (instead of simply reacting to demands to resolve issues or lower costs).

Establishing strategic partnerships with a variety of business leaders and understanding user needs are no longer luxuries, but a path to survival. Yet the necessity also becomes an opportunity: When IT can better predict business needs and facilitate the adoption of innovative technologies, it can transform enterprise capabilities and gain a competitive edge.

Intel IT: Improving Enterprise Security in a New Way

Adapting to change often requires taking a new approach. Intel IT has just completed and deployed the first version of a new granular trust model, which is designed to support key initiatives such as IT consumerization and cloud computing. Read the white paper from Intel IT on improving enterprise security and discover how this model will allow faster adoption of new services while improving survivability into the future.
Embracing the Changing Role of IT

Economic challenges in recent years have forced IT workers to wear different hats. Budgets are either flat or down, and reduced head count is redefining traditional IT roles. However, at the same time, these challenges are creating a unique opportunity for IT to have a new role in the enterprise.

By taking advantage of a combination of technologies and trends—such as ubiquitous Internet connectivity, virtualization, and cloud computing—IT can redefine the way it provides services to users. And it’s more than support for BYOD initiatives. As a strategic business partner, IT can become a champion of improving business processes and better meet the changing requirements of users.

With greater insight into the enterprise, it’s easier to translate business processes into hardware and technical requirements—and do so from the position of valued partner, versus simply a cost center. It’s an opportunity to facilitate larger initiatives and significant business value drivers, such as big data, business analytics, data mining, and much more.

Adapting to the New “Normal”

To ensure success, it is critical to adapt to this new “normal” while keeping up with the increasing pace of the business. This means meeting the growing requests for easy-to-use solutions—whether custom, self-service, or on-demand—with speed and resilience. All of this can be achieved by adopting a new approach to users, skill sets, devices, and overall mobile strategy as shown in the following examples:

Put user needs first.
- Gain a comprehensive understanding of user needs to deliver the right experience.
- Trust user input to help shape IT decision making.
- Deliver on-demand services and flexibility.
- Understand that there is no one-size-fits-all solution.

Evolve IT skill sets for the future.
- Broker services externally as needed to keep pace with the business.
- Gain greater visibility into demand with powerful business intelligence.
- Stay ahead of resource needs (e.g., new roles might include cloud architect, cloud service managers, director of consumerization, and so on).
- Develop strong training and rotation programs for peer sharing and support.
- Achieve critical insight into real-time supply chain capacity and resources used.
- Enhance security expertise to effectively manage a more complex threat landscape across a business environment with multiple devices per user.

Promote effective devices and services.
- Provide interoperability across all devices for a consistent experience on any device, at any time.
- Ensure that solutions and services are:
  - Easy (ease of use, responsiveness, simple and secure sign-on).
  - On (available and accessible quickly, on a range of devices).
  - Connected (integrated with other services and can enable collaborative work flows).
  - Protected (services, data, and devices protected at all times).
- Deploy cloud technology (private, public, and hybrid) as a business enabler.

Adopt a comprehensive mobile strategy.
- Gain a comprehensive understanding of mobile business needs along with—and complementary to—technology needs.
- Establish a comprehensive mobile strategy for hardware, software, and applications (mobile application framework and supported device strategy).
- Support dynamic security controls to reduce enterprise risk and improve user experience.
Refining Device Choice

Not surprisingly, a changing landscape of devices is playing a big role in defining today's new normal. There is now a revised standard for companion devices in the enterprise: Tablets and smart phones are commonplace in complementing and extending the computing experience of desktop and mobile PCs. In other instances, they are replacing and automating traditional paper-based processes to streamline workflow and promote collaboration. With a renewed focus on the user experience, it's important to reframe how to enable mobile solutions and manage device choice—both of which are now strongly driven by user needs.

In addition, diverse roles in the organization require flexible solutions, and a single enterprise may have a range of device needs. In other words, one size no longer fits all. Mobile employees may need a full-featured laptop complete with companion devices, while certain business use cases, such as those for mobile task workers, may require devices that are optimized for portability and long battery life. And many stationary office workers still rely on a desktop-based PC, but may need a mobile companion device.

Meeting High Expectations with Innovative Options

Complicating matters is the fact that workers expect business-class technology solutions to be provided by their organization—devices that offer ample I/O ports; solid performance standards; and a sturdy, reliable design. If they perceive their employer-provided technology to be anything less than ideal, they will rely on their own devices—figuratively and literally. Ultimately, these workers may even seek employment at another company, which is a significant risk in today's competitive business environment. Supporting innovative technologies becomes an opportunity for IT to help attract and retain the best employees.

IT Managers Weigh In on BYOD

These days, every IT manager has an opinion on Bring Your Own Device (BYOD). Intel surveyed 3,000 IT decision makers and 1,300 end users across four countries, including Australia, Germany, South Korea, and the United States, on the current state of BYOD—and the results are compelling. Watch the video A Look at BYOD in the Enterprise to learn more.

There's also another way to look at it: Some employees will want the flexibility of accessing work resources on their personal devices, and research shows this can boost productivity and aid in employee retention. As a best practice, Intel IT is supporting a BYO model that is complementary to its enterprise standards. Since 2010, Intel IT has helped Intel employees realize over 7 million hours of added productivity through its employee BYOD program for phones and tablets. The goal is to achieve greater integration for new devices without compromising security, tools, or management standards. The IT organization is empowered to determine what level of access to provide BYO devices, in addition to how much IT support to allocate.
Flexible Growth for the Future: Intel® Architecture and the Windows® 8 Operating System

Most businesses and IT organizations simply don’t have the time or resources to start over with technology. As a result, bringing new devices and mobile solutions on board must be done with a deep understanding of the current enterprise—policies, infrastructure capabilities and standards, business processes, data structures, service delivery models, solution standards, and more. Achieving ease of integration now, as well as having the agility and flexibility to meet future business needs, is critical to success.

With the evolution of new business-class form factors based on the Intel® architecture, IT can gain the performance, security, and manageability it needs, while users get the devices they want. There are a range of device options, from full-featured systems such as new business-class Ultrabook devices and Ultrabook convertible devices—a unique two-in-one design that functions as both a full PC or tablet—to innovative tablets and space-saving all-in-one desktops. Intel architecture is prevalent across a range of existing enterprise computing environments and solutions, so it’s possible to achieve seamless and secure integration while maintaining a low total cost of ownership (TCO). It’s a way to design the future on a trusted and familiar technology platform while leveraging existing investments in infrastructure, applications, and training.

With the introduction of the Windows® 8 Pro operating system and the Windows 8 Enterprise operating system on Intel-based devices, modernizing any technology environment just got easier. The technology is compatible with traditional Windows desktop applications, peripherals, and drivers that span most enterprise environments, so it’s a natural fit. It works easily with legacy systems, and delivers innovative touch capabilities to those workers who need it without any additional software or hardware. Moreover, these devices are available in a range of form-factor options, with power that ranges from Intel Atom™ processors to Intel Core™ vPro™ processors!
Before consumerization, Intel embraced a paradigm that prioritized a powerful silicon foundation. This was followed by software, services, and user experience. Now that we have a deeper understanding of the needs of the future, we are building on the brand promise enterprises depend on and flipping that paradigm to place user experience as the top priority. We think that business computing experiences will continue to become even more personalized and result in greater productivity—for any job role, on any device, from any location.

Moving forward, Intel is embracing technology innovation with the understanding that touch-enabled technology is only the beginning. Touch is the first technology to help shift the paradigm of how we will work, but there are many more transformative technologies to come, such as facial recognition and gesture software that recognizes the user and eliminates the need for multiple passwords.

And the development of augmented reality technologies and platforms will quickly find their way into the enterprise. Connectivity on the go will become even easier, and a range of business services will be supported on even more devices. IT-as-a-Service will continue to evolve, and there will be more reliance on secure cloud services to gain additional flexibility, such as seamless access and file-sync capabilities.

Boosting Productivity with Built-in Security:™ Intel vPro™ Technology

As work models continue to shift and change, it’s important that this technology further close the gap between users and IT—and remain the security-enhanced infrastructure preferred by CIOs, especially as business models change. Intel vPro technology will continue to drive productivity in the following ways:

- **Form-factor innovation** – Users will always want the latest device, and businesses will always want to increase productivity. With the right mobile form factor, doctors can more easily access the patient data they need, without leaving the patient’s side. Shop-floor managers can problem-solve from any location on the shop floor, helping to keep things on schedule. With this in mind, Intel will continue its focus on delivering the right level of hardware-based security and manageability in the newest form factors.

- **Universal collaboration** – As business interactions continue to become more global, technology will help enable diverse groups to collaborate easily using their native language. The collaboration tools of the future will focus on real-time language translation and seamless display sharing that lets users share screens—without having to connect through an access point.

- **Blended computing** – With each worker active on two or three devices, there’s a need to optimize the devices for sharing—and maintain the ability to pick up where they left off using any device, from any location. Blended computing models will support a seamless sharing of resources, including larger screens, GPS, wireless wide area network (WWAN), and so on.
Looking Forward

Intel will continue to expand its robust solution ecosystem. With an ongoing emphasis on security and manageability, Intel is increasingly adding capabilities that lead to breakthrough productivity for users—from industry-focused solutions to general business-focused solutions. Intel’s independent software vendors (ISVs) are optimizing solutions that are designed to meet business needs while delivering a compelling user experience. And the breadth of the ecosystem is increasing exponentially, with a number of innovative vertical applications coming soon.

**New Requirements, New Opportunities**

Consumerization isn’t a fleeting concept; it represents a fundamental shift in the way business solutions will be delivered by IT. Its implications on the future of the enterprise require IT innovation that goes beyond simply supporting BYO.

IT has an opportunity—and a responsibility—to evolve its role and culture to one that focuses first on the business and users. In an ever-changing business environment that brings new security and compliance challenges, IT must balance flexible user choice with secure, cost-effective management standards across the organization.

Moving forward, IT can prepare for the future by understanding and anticipating what users will need next. We’re working on this, too. Intel Labs consistently conducts extensive research across the industry, while Intel product and software groups are building capabilities to enable the experiences—and technologies—of tomorrow.

**The Future of Knowledge Work from Intel Labs**

The world is changing dramatically, both expanding and contracting in ways that will have a significant impact on everyday life. Old models of work already in flux will seemingly dissolve as new models rise in their place. Find out more in *The Future of Knowledge Work* from Intel Labs, which identifies and explores the trends that will shape the future of knowledge work.
Learn more about the impact of consumerization on the enterprise and find additional IT resources on the Intel IT Center.