WHY YOU SHOULD READ THIS DOCUMENT
This vision paper illustrates Intel’s principles for transforming the workplace with a holistic approach that spans company culture, IT, and facilities, including:

• Embracing new ways of working, such as an emphasis on nonroutine work, virtualizing the workplace, and democratizing ideas to unlock hidden business intelligence

• Using key technologies to empower change through advanced collaboration, personal productivity, and integrated facilities

• Supporting innovation, velocity, openness, and accountability within the company culture

• Accepting the social, mobile, analytics, and cloud (SMAC) paradigm as the new digital business platform

• Creating the right environment to align the workplace with work styles
The very nature of the workplace is changing fast. Work is getting done from multiple locations, on a range of mobile devices, wherever people are. The competitive landscape is evolving at an equally rapid pace. On the one hand, businesses are facing intensifying pressure by competitors who have been able to achieve parity in terms of service, technology, and price. And on the other, even the most firmly established companies are facing pressure to keep up with innovative new business models driven by mobility and cloud.

Against this intensely competitive backdrop, organizations must transform to survive. This transformation effort requires innovation on many fronts—products, services, business models, and so on—and must be done with ever increasing velocity. For many, the impetus for change is already coming down from the executive suite. Recognizing the need to transform, business leaders have concluded that there needs to be a fundamental shift in the way people work. Why?

Because people are the ultimate source of innovation—and IT is in a unique position to enable that change.

There is now industry consensus behind the social, mobile, analytics, and cloud (SMAC) paradigm as the new platform on which to build a digital business. And there’s no doubt that this paradigm is having a profound impact on the workplace. However, technology is only part of the equation, and change is never easy. The process of true transformation brings many challenges for the business—culturally, environmentally, and technologically. Technologies and workspaces must evolve to support new ways of working, but there’s also a cultural component that is critical to success.

This paper explores Intel’s vision for workplace transformation, from the challenges and barriers to the very principles that can help organizations achieve greater success.
There's no doubt that we've entered a period of intense change on a global level. The business landscape is shifting at light speed and organizations are already beginning to adjust, though many still have a way to go. And technology is ultimately enabling change on a grand scale.

We witness these periods of intense change every hundred years or so. And technology innovation undeniably provides a key underpinning, or foundation, for a new economic landscape. Starting with the first wave of the Industrial Revolution in the 1760s, we are now writing the narrative for the third wave.

The business leaders who are today actively embracing change have something in common: They recognize that innovation comes from people, and they instill this belief across the organization. By drawing on the collective intelligence of employees, organizations gain more from shared knowledge and resources, ultimately earning even greater rewards. These forward thinking organizations are driving innovation and gaining momentum by changing the nature of work itself.

New Ways of Working

Here are some of the new methods and approaches that are becoming more common:

- **Agile development or “scrumming”** – Enabling people to come together and work in a focused, collaborative, and iterative manner, such as “swarming” on a problem.
- **Emphasis on nonroutine work** – Recognizing that high-value work comes from employees’ creativity, market insights, personal networking, and ability to influence others, while understanding that repetitive, routine work will become more automated.
- **Talent acquisition** – Attracting and retaining the right talent by providing the most effective and flexible work environment. This is especially true for attracting millennials.
- **Virtualizing the workplace** – Understanding that work is no longer a place people go to, but something they do, and empowering those people to be productive anytime, anywhere, without limitations.

Power to the People

And here are some of the ways organizations are becoming more collaborative:

- **Working with the collective** – Helping to ensure that everyone has an active voice, which democratizes ideas to unlock hidden intelligence and creates a feeling of inclusion
- **Crowdsourcing** – Tapping into the “citizen developer” pool as a rich source of innovation
- **Hyperconnectedness** – Working collaboratively with a rich ecosystem of partners and affiliates by going “beyond the corporate firewall” and outside of geography constraints
Barriers to Success

While many of these agile working methods don’t seem too far-fetched, they aren’t without challenges. In today’s enterprise, there are a number of barriers that prevent these work styles from becoming a reality.

**Static Industrial-Age Processes and Tools**

Static processes, and the technologies that help run them, may not align with the way that people work. This is especially true for today’s distributed workforce. If workers can’t get to the right tools or collaborate easily with other team members, it can halt workflows and slow down productivity for the entire team and, ultimately, the business.

Consider a typical brainstorming session, with some workers in a conference room and some remote workers participating by phone. The workers in the conference room are reduced to scrawling on a whiteboard or flip chart and taking photos to send out via e-mail (which syncs your “next great idea” to a public cloud somewhere). Wires are everywhere, and people are clamoring for power outlets. Frustrating for those in the room, certainly, but even worse for the remote participants on the phone who are unable to collaborate in a timely way.

Without the right workspaces and technologies in place, problems can arise even for workers in the same building. A meeting room may not be available, or it may be hard to find, and it may be difficult to share work on a conference room projector without the right adapter. And personal productivity can suffer from smaller annoyances like a forgotten password or incompatible technology. This list goes on and on.

Locked-In Business Intelligence

Yet another common challenge for large corporations is “locked-in” intelligence. Finding the right person with the right answers can prove extremely difficult, especially within large, globally dispersed organizations. And then there’s the aspect of business intelligence. Today’s companies are overflowing with terabyte upon terabyte of data and struggling to manage it all. With the right analytics in place, this data can deliver insights that may hold the key to speeding decision making across the organization.

Creating the Social and Smart Enterprise

By enabling a social and smart enterprise, you can ensure an open yet connected environment in which shared knowledge and data is always accessible, helping to increase business agility and velocity. Much like the “working with the collective” concept pertains to people, the same principle applies to computing. By supporting social computing and advanced collaboration, you can democratize the sharing of ideas so that every employee has an equal voice. Workers can easily share opinions, work together when they have questions, and easily find the experts they need—regardless of their physical location.

And by democratizing analytics data, organizations can make critical business information available to all employees through “smart advisor” applications. With easy access to real-time information across the business, employees can make more-informed, more-accurate decisions at a pace that speeds workflow for better results.
The Role of Technology

Somewhere between the challenges and achieving transformation lies the need for change. It’s the difference between where we are and where we’re going. Intel’s proactive vision of workplace transformation and the role of technology in enabling change addresses the three key ways businesses can transform, including:

- **Advanced collaboration** that enables distributed mobile workers to solve problems and share information easily and without barriers
- **Productivity** achieved by simplifying workflows and freeing workers from the burdens of computing
- **Integrated workspaces** that use embedded intelligence to speed productivity and improve collaboration

Supporting Advanced, Natural Collaboration

Because today’s workforce is distributed across sites, cities, and even countries, collaboration can be a serious challenge. Again, there are the challenges of a typical brainstorming session, from the limitations of a static whiteboard to the sharing of ideas with remote participants. And while videoconferencing would seem a likely alternative, video quality can be lackluster at best.

With advanced collaboration technologies, workers connect in an intuitive, natural way—whether it’s a global team, a small group, or a simple 1:1 session. Unified communications with HD audio and video (complete with live background masking) is changing videoconferencing with a lifelike experience. Workers can interact in real time using a shared, multitouch interactive whiteboard that spans devices, from tablets to projection screens and everything in between. The whiteboard is visible and accessible to all attendees in real time.

### Changing Collaboration

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<tr>
<th>FROM THIS:</th>
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<tbody>
<tr>
<td>Only people in the room can collaborate effectively.</td>
<td>All team members can use natural, immersive collaboration capabilities.</td>
</tr>
<tr>
<td>Attendees must e-mail a picture of the screen or whiteboard to share it.</td>
<td>Remote attendees can view and interact in real time.</td>
</tr>
<tr>
<td>It’s hard to find people.</td>
<td>Workers can use peer-to-peer touch and gesture capabilities.</td>
</tr>
<tr>
<td>The videoconference quality is terrible.</td>
<td>Attendees gain lifelike HD video and audio, with live background masking.</td>
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Boosting Personal Productivity

When it comes to productivity, the smallest detail can hamper workflow—whether it’s a laptop running low on power or a password issue. Let’s say you forget your password and you can’t log in without IT assistance. It is certainly a drag on your time (and theirs), but it also interrupts workflow. Sharing work can also take longer than it should, especially when you can’t connect to a projector.

Intel has made great strides to free workers from these common barriers by supporting existing workflows for maximum productivity, including:

- **“You are your password**” is a biometrics-enabled experience that will certainly be faster, but it will also be more secure. No more “123456” password concoctions or writing passwords down.

- A workplace without wires is coming soon. While built-in wireless display now allows workers to connect automatically and more securely to projectors, the future of wireless is bright. Soon, wireless docking and wireless charging will create an even more seamless experience.

- A digital assistant is coming soon, and it will change how we work. Instead of having to tell your device everything, the reverse will be true. Your device will anticipate your needs with proactive, contextual recommendations and powerful voice recognition. And built-in theft protection will automatically measure proximity and motion to assess risk levels on the go.

### Improving Workflow

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<tr>
<td>There are too many passwords to remember.</td>
<td>Use biometrics-enabled “You are your password” technology.</td>
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<tr>
<td>There is no easy way to share a screen.</td>
<td>Work with wireless display.</td>
</tr>
<tr>
<td>The adapter is missing or incompatible.</td>
<td>Use wireless data sharing.</td>
</tr>
<tr>
<td>There’s no power socket.</td>
<td>Gain wireless charging and docking capabilities.</td>
</tr>
<tr>
<td>Devices aren’t “smart” enough.</td>
<td>A digital business assistant makes proactive recommendations.</td>
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<tr>
<td>Voice recognition isn’t helpful.</td>
<td>Devices “know” you and your preferences.</td>
</tr>
<tr>
<td>Devices add work instead of making work easier.</td>
<td>Location-based services help find what you need.</td>
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Using Integrated Workspaces

Many companies are simply getting by in today’s workspaces, despite the challenges and problems they pose even for those onsite. It’s often a challenge to find a free conference room or find the room itself. And when you factor in poor audio and video quality, it can impact workflow for all team members, whether in or outside of the office.

Intel is enabling an integrated facilities experience built around two technology areas:

- **Location-based services** are designed to help you find the resources you need based on your current location, from people to conference rooms and printers. And just as your PC will know where you are, so will your building. A meeting room can automatically set up and prepare for your meeting, including finding the right content and sharing it with remote attendees.

- **Embedded technologies** are present in the facilities themselves. Immersive, high-quality audio and video will guarantee a natural, easy experience. And future installments of touch, gesture, and natural voice control will include rich context awareness. From an embedded intelligence perspective, sensors that are built into the fabric of the building will assist with many tasks, from highly efficient building management to identifying and locating unoccupied meeting rooms.

### Innovating Facilities

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<tr>
<td>Workers are unable to find a free room and its location.</td>
<td>Location-based services find and guide people to available nearby resources.</td>
</tr>
<tr>
<td>The room doesn’t have the right technology.</td>
<td>The room automatically sets up for a meeting.</td>
</tr>
<tr>
<td>Poor videoconferencing quality hampers workflow.</td>
<td>Achieve immersive and natural A/V.</td>
</tr>
<tr>
<td>Workers are unable to share content easily.</td>
<td>Gain support for touch- and gesture-based content sharing.</td>
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While the technology foundation is a huge piece of the puzzle, you need a holistic strategy to realize success. Any transformational effort driven solely by IT will likely not meet the needs of executives. Hence, the need to put this vision into an integrated practice comes next. To enable true transformation across the business, Intel recommends a triumvirate strategy that addresses company culture, IT, and facilities.

**Culture: Supporting and Embracing Change**

Achieving a new level of innovation goes beyond technology and requires a fundamental shift in the way people work. If you think about the companies today that stand out as innovative, it’s because they have embraced new and emerging styles of working.

Those new styles of working are effective because they’re supported throughout the business, especially by organizational development and human resources (HR) as key drivers of new work norms and practices. So whether the organization is setting up open workspaces in a building or empowering its mobile workforce to collaborate easily from any location, the workers need to know that the change is supported—and then they themselves need to adapt to the change.

This culture change can often mean a shift in the employee/employer paradigm, if mostly psychological. For example, mobile working may mean finding new ways to set goals and measure employee success, such as a focus on outcomes and impact versus actual hours spent in the office.

**Technology Doesn’t Equal Change**

“If you can’t help people change, technology changing all around them won’t make the slightest difference.”

—Dave Coplin, *Business Reimagined*

**An Integrated and Inclusive Strategy**

- Culture
- Work practices and established “norms”
- Social
- Collaboration
- Communication
- Mobility
- Open workspaces
- Modern, inviting areas
- Space efficiency
- Dynamic teaming
- Shared knowledge
- Faster insights
- Greater velocity
And at the executive level, goal alignment is critical to drive through the required change. It requires consistent clarity from the C-suite to define the end goals and instill a new set of expectations, while removing any uncertainty and ambiguity. Being of particular importance, the following key attributes should be embraced across the business:

- **Innovation** – Support agile approaches, or “swarming,” to ensure that new technologies are integrated into existing business processes and become a natural part of everyday workflow. One powerful way to facilitate innovation is by recognizing and rewarding employees for embracing change.

- **Velocity** – Move toward nonroutine work, or deroutinization, which relies on workers’ intelligence, insight, and creativity versus a focus on rote everyday processes. According to Gartner, nonroutine work will comprise 40 percent of the workload by 2015.

- **Openness** – Ensure that your distributed workforce is hyperconnected in the new virtual workspace, and facilitate open communication to unlock hidden intelligence. Use crowdsourcing to give everyone an active voice, democratize ideas, and create a feeling of inclusion. It’s also critical to make sure people feel comfortable with this process.

- **Accountability** – Create an environment in which work practices are embraced and modeled by upper management, with the right level of support and training provided for employees.

While the concept of culture change sounds relatively easy, many companies make the mistake of instituting a technology change and then failing to support it, sometimes called tool fatigue. For example, let's say an organization rolls out a new social tool, yet fails to train employees or show them how the tool can be useful. To the employee, the tool may appear to be simply another communication tool like e-mail or a place to store documents. So the tool goes unused and, overall, the project is seen as a failure. However, the only missing link was the leadership modeling and communication needed to create an environment where employees understood the value of the change and felt safe doing something new.

**IT: Enabling the SMAC Stack**

As the SMAC paradigm becomes the accepted new platform for digital business, it plays an equally key role in transforming the workplace. The convergence of these four interdependent components has a multiplicative effect in driving change that is larger and more profound than the sum of its parts. There is widespread industry support on the impact of SMAC. While IDC refers to it as the “third platform” and Gartner as the “nexus of forces,”¹ the foundation is built on the same SMAC cornerstones—and what Intel calls the SMAC stack.

**Social**

Social computing provides a natural, intuitive way for people to communicate and collaborate, whether with colleagues or customers. It eliminates traditional communication hierarchies to enhance connections across geographic boundaries and unlock valuable information across the business. It’s also a way to democratize ideas and opinions and give all employees an equal voice.

**Mobile**

Today, work is no longer a place that you go to; it’s what you do. Mobile computing is what makes this possible, with the ability to work anywhere, anytime. And the benefits of mobile devices extend beyond flexible work patterns to help businesses become even more agile and responsive.

**Analytics**

Advanced analytics deliver real insight in real time at the point of decision to help speed informed decision making across the organization. This is about enabling a “smart advisor” that brings business-critical data to all employees, and the democratization of analytics means that valuable data is no longer locked in a silo at the preserve of the executive board.

**Cloud**

With shared IT systems in the cloud, employees can have access to the information they need anytime, on any device, from any location through device and data synchronization. The cloud is also an opportunity to virtualize an office environment, which is key to transforming the workplace. Paper documents and reference manuals can be accessible in the cloud for anytime access.

**Facilities: Creating a Place for Innovation**

Finally, to support new ways of working, you need the right physical environment. This is really about achieving a level of harmony between the workplace and the work style so that there is alignment.

Facilities and IT continue to grow increasingly close together, and in some instances, they’re merging. For example, a conference table in a meeting room today is exactly that: a table. However, in the near future, it may incorporate a touch screen surface with Internet and network connectivity. In this scenario, is it still just a piece of furniture, or is it now in the IT domain?

The same can be asked when you consider embedded building intelligence that can control everything, from wireless screen projecting to automatically setting up a meeting or providing location-based services. Due to the inevitable crossover between facilities and IT, an ideal workplace transformation strategy is to have those responsible for both to combine their talents and work together.
Intel is using this triumvirate strategy to implement change across culture, IT, and facilities. And for the social, mobile, and analytics components of the SMAC stack—as well as for facilities—Intel IT took a proactive, phased approach to enabling capabilities.

Social by Default

Social efforts at Intel started with simple content sharing and instant messaging but quickly evolved as employees became more mobile. Soon, unified messaging and videoconferencing supported collaboration for employees that are distributed across cities and countries. Today’s social capabilities include:

- Support for a fully interactive collaboration experience, including unified messaging and soft phone capabilities with audio- and videoconferencing—making use of built-in dual-array microphones and high-definition cameras.
- Expansion of a social platform for collaboration and document sharing as well as Expert Finder, a global resource for finding, discovering, and sharing information with colleagues.
- Exploring the expansion of interactive electronic whiteboard capabilities, virtual workspaces with full HD audio/visual capabilities, and a mail cloud to simplify and consolidate e-mail access on any device. Also exploring crowdsourcing and gamification for future efforts.

Happier Employees

As Intel has grown its social computing capabilities, employee satisfaction has increased. Employees report that seeing their colleagues’ faces and interacting in real time not only increases productivity, but also makes their jobs more enjoyable.

Intel IT: An Inside Look
A Mobile Standard

Intel took a proactive approach to establishing a mobile compute foundation early on, starting about 17 years ago. Today, Intel IT supports 90K employees at 143 sites in 62 countries, so mobility and collaboration have become an integral part of the workday. Mobile capabilities include:

- Enabling every employee to be mobile with laptops, wireless network access, and a smart phone
- Offering choice to employees based on finding the right tool for the job, with support for lighter, more capable mobile devices with longer battery life, the Windows* 8 operating system, and touch capabilities
- Implementation of a trusted applications portal for multiplatform apps that meet Intel IT’s quality standards for security, innovation, and ease-of-use requirements

**Our Journey Mobile Solutions and Devices**

**Phase 1**
- Laptops, WLAN, and smart phones for every employee
- New devices via BYOD
- Greater device choice via CYOD

**Phase 2**
- Lighter, more-capable touch-based clients
- Trusted apps portal
- "Five-star apps" for multiple platforms increase security and ease of use

**Phase 3**
- Abundance of "five-star apps"
- Support for multiple browsers and operating systems
- Support for touch, gesture, and voice
- Context-aware apps

Enabling Flexibility with Optimum Mobility and a Better User Experience
Analytics for Shared Data

Intel IT started its analytics capabilities with a solid foundation for data management and business intelligence. From there, capabilities have evolved to include unstructured data, machine learning, and data visualization. Advanced analytics capabilities include:

- Support for advanced predictive analytics and machine learning to increase quality control across the business, including streamlining the supply chain by speeding customer response times and optimizing inventory
- Continuing to expand predictive analytics opportunities for factory, sales, and design operations
- Expanding support for the democratization of self-service, advanced analytics to ensure that real-time business insights are available to everyone across the business

Facilities Strategy in Action

For Intel, the impetus for facilities innovation was the realization that cubicle space simply wasn't being used. Employees were congregating in meeting rooms and working in groups, while the cubicles were largely empty. To guide the changes needed, Intel Corporate Services created a program called The Way We Work. The program is based on a set of guiding principles designed to address work style, preferences, company identity, and effective use of space.

- **Work style** – Design spaces that are open and optimized for collaboration, teamwork, and problem solving. These spaces also facilitate the needs of a mobile workforce by letting employees move around easily with their work, with private phone-booth rooms where employees can create a virtual office with network connectivity and HD audio and video.

- **A place you want to be** – Create a modern, inviting place so that employees will prefer to come to the office. The space will capture the look and feel of the future, which will help Intel attract and retain the brightest employees.

- **Identity** – Retain and display the company identity and culture, and create spaces that showcase Intel innovation and technologies.

- **Space efficiency** – Make optimal use of real estate, including repurposing existing square footage to help offset costs.
Intel is applying its guiding principles for facilities to its work groups, or “communities.” Each community is assessed to determine particular needs for individual work areas, team areas, collaboration rooms, and private phone-booth spaces. Signifying the end of a one-size-fits-all approach to workspace planning, this optimizes planning around the needs of the individuals who use the space.

Our Journey  Communities Renew and Refresh

**Then:** Restrictive, isolating cubicles

**Now:** Open, collaborative work spaces and team areas

Creating Team Hub/Collaboration Areas from Underutilized Individual Spaces

Looking Forward

Intel’s vision for transforming the workplace is rooted in experience and backed by industry-leading technology innovation that continually focuses on the future. By applying Intel’s principles of workplace transformation within your own organization, you can address the challenges of a changing workplace with the latest tools and technologies to gain a competitive edge.

Together with its ecosystem partners, Intel will continue to explore and expand new ways of working within the evolving enterprise—from advanced collaboration, productivity, and integrated workspaces to the ongoing recognition that people are the ultimate source of innovation.
Additional Resources

What's Next: The Near Future of Work

Watch this video to see the latest technologies in action, from wireless capabilities and touch screen collaboration to a digital assistant and facial recognition.


Digital Personal Assistant for the Enterprise

Find out how Virtual Assistant gives employees the power to automate routine tasks and stay focused on the task at hand.


Planning Guide: Modern Collaborative Technologies

Prepare to integrate modern collaborative technologies into your organization, whether workers are in or outside of the office.

intel.com/content/www/us/en/collaboration/workplace-collaboration-planning-guide.html

Evaluating Intel® Pro Wireless Display for Enterprise Use

Learn more about how Intel® Pro Wireless Display can improve the overall user experience and help facilitate collaboration in common areas.


*Gartner Says the Nexus of Forces Will Drive More Than 26 Percent of Total Enterprise Software Market Revenue by 2017.* Gartner (December 2013).
gartner.com/newsroom/id/2636116

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