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# Developing an Enterprise Social Computing Strategy

Intel IT is implementing an enterprise-wide social computing platform that combines professional networking tools with social media such as wikis and blogs, and integrates with existing enterprise software. Our goal is to transform collaboration across Intel, addressing top business challenges such as helping employees to find relevant information and expertise more quickly, breaking down silos; attracting and retaining new employees; and capturing the tacit knowledge of mature employees.

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# Executive Summary

Intel IT is implementing an enterprise-wide social computing strategy with the goal of transforming collaboration across Intel and addressing key business challenges.

Our architecture combines professional networking with social media tools such as wikis and blogs. This provides employees with the tools to share information as well as to make connections. To provide maximum value and make it easier for employees to adopt the technology, our social computing tools will integrate with existing enterprise software.

We found that social computing could address many challenges, such as helping employees to find relevant information and expertise more quickly; increasing interactive collaboration across the enterprise, breaking down silos; spurring radical innovation; attracting and retaining employees; and capturing the tacit knowledge of existing employees. Additionally, if Intel IT does not provide a social computing platform, use of fragmented internal tools and insecure external tools will continue to grow.

To develop our strategy, we:

- Collaborated with Human Resources and Information Security to develop a usage policy with governance, legal, and security considerations at the forefront.

- Performed extensive exploration, including defining usage models to identify the needs of individual users.

- Performed proof of concept (PoC) tests to evaluate business value and user acceptance of different products.

- Defined an architecture and an approach to phased implementation.

We deployed the first phase of our platform, which includes improved blogging and forum capabilities along with limited professional networking, in early 2009. This release met with moderate success, with early indications that we had improved the dissemination of information and provided innovative ideas. However, we quickly realized the importance of implementing the full capabilities defined by our architecture in order to maximize business value. We plan to add those capabilities in 2009 and 2010.

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# Background

The consumer-oriented technologies categorized as social media and social networking are transforming the way that people communicate and accelerating the spread of information. This technology category includes social networks, wikis, blogs, discussion forums, streaming media, and microblogs.

These technologies have the potential to transform the way employees collaborate within Intel—and address some of our top enterprise-wide business challenges.

- **Sharing information.** Intel business groups are demanding better ways to find relevant information and expertise, increase interactive collaboration, and break down knowledge silos within their organizations.

- **Fostering innovation.** Intel relies on innovation and the sharing of new ideas across the company in order to stay competitive. Intel's culture includes the core values that are essential for innovation, such as questioning and risk-taking, but organizational silos can get in the way of ideas. Social technologies can unleash those ideas.

- **Cultivating a world-class workforce.** Our workforce is changing. As older employees leave, they take with them valuable knowledge accumulated over years of experience. At the same time, we need to find better ways to attract and retain the next-generation workforce that will replace them. Social technologies can address both these challenges. They can capture the tacit knowledge of older employees. They can also help attract new employees by providing tools that resemble the appealing consumer technologies these employees use outside work.

- **Facilitating learning.** Today, knowledge changes rapidly and new discoveries invalidate old truths every week. As a result, learning is a key part of employees' jobs, and it often occurs informally as people work with each other and gather information. Social computing enables this type of learning; it changes the way companies collect, organize, and disseminate information across the enterprise.

- **Providing leadership.** IT is at a leadership inflection point. In recent years, different groups within Intel have deployed several niche social computing tools. Of these, Intel IT supports blogs and forums. However, there are many other tools in use, including about 200 wikis. These tools are typically standalone and many of them are largely unmanageable. In addition, some employees began using externally hosted, unsecured tools to communicate. Without action by Intel IT, business groups and individuals would continue to expand their use of these fragmented and unsecured tools.

- **Protecting intellectual property.** The introduction of social technologies within the enterprise must include efforts to protect intellectual property and other information assets. We needed to define appropriately balanced security measures and controls and updated use policies, and make sure all employees know how to use these technologies appropriately.

To transform collaboration and address these challenges, we set out to develop an enterprise social computing strategy and deliver an enterprise-wide platform.

# Goals and Initial Steps

Our overarching vision is to transform the way Intel employees collaborate.

Our goals include:

- Transform and improve the sharing, discovery, and aggregation of information.
- Improve collaboration between multiple authors and across different regions.
- Help employees find experts fast.
- Share innovative ideas.
- Build community inside Intel.
- Capture the experience of the workforce.
- Attract and retain the next-generation workforce.

To do this, we realized that we need a broad strategy and architecture that integrate various social media tools together with professional networking. Social media, such as wikis and blogs, provide tools that enable a user to generate content and communicate it to many other people. Professional networks identify pools of expertise, create persistent, mappable networks of people, and allow any-to-any communication. We need both. A key difference between enterprise and consumer requirements is that the purpose of connecting people is to get work done, not to make friends. To achieve this goal, we need to provide employees with the tools to share knowledge as well as make connections

## Governance and High-level Backing

A shift to social computing requires enterprise-wide changes in the way people work. Driving this kind of change requires high-level support within the organization. Social computing also overlaps with areas traditionally considered the domain of human resources—including workplace issues and behavior, personal data, and privacy.

High-level backing from both our chief information officer (CIO) and our head of Human Resources helped ensure that our initiative had the support needed to move ahead. We found that governance is key to making sure that use of social computing aligns to corporate guidelines. We chose to align social computing with our current code of conduct covering communication via Internet, phone, and e-mail. Though we did not create special rules for the use of social computing, we did realize that we needed to increase training to reinforce to employees that the rules of behavior have not changed just because there is a new communication medium.

## Risk Assessment

We encountered the concern that social computing may introduce new security risks in areas such as the exposure of Intel intellectual property or employees' personal information.

Together with our Information Security team, we performed a risk assessment. We found that social computing did not introduce new risks; however, it could increase some existing risks because of the one-to-many nature of the medium. As an example, if an employee includes personal information in an e-mail message sent to one other person, there is a risk of identity theft. Posting the same information in a social computing tool such as a blog may increase that risk, because the information is immediately exposed to many people instead of just one.

Our assessment showed that the risk of using internal social computing tools is much less than the risk of using external tools. Internal tools are hosted on servers inside Intel's firewall, so we know that communications are limited to Intel's internal environment and we can limit access to appropriate groups. In contrast, if employees use an external blogging or microblogging site to communicate, their posts may be read by anyone, anywhere. A further risk is that some of these sites have privacy policies that effectively require users to give up their right to privacy; the sites may claim ownership of all content posted on the site in perpetuity, including the right to share the information with third parties.

Given the reality that many employees will use social media with or without support from Intel IT, we realized that we could mitigate the risks by providing them with internal social computing tools and by guiding their use of external tools.

An example of the risks associated with the use of external tools occurred recently as our chief executive officer (CEO) readied an internal Webcast regarding Intel's earnings report. An employee using an external microblogging site encouraged others to "live chat" during the CEO's Webcast. This increased the security threat to Intel confidential information. In response, our CIO and our vice president of Human Resources sent an e-mail to all employees warning them about the privacy policies of external sites and reminding them that they have promised to protect Intel confidential information. This includes a commitment never to post or share confidential information outside of Intel without express authorization.

The e-mail also urged employees to err on the side of caution when using social media. New Web-based services emerge so quickly that it is impossible to provide specific guidelines for every external tool, so we decided that best security approach was to provide employees with guidelines for self-policing their activities.

# Social Computing Approach

We performed an extensive exploration to understand the current challenges that business groups and teams encounter in the areas of collaboration and communication.

We formed relationships with business groups and focused on understanding how their users currently collaborate and what their problems are. We identified a number of common pain points (see sidebar). Studies have shown that the most compelling systems achieve the balanced integration of three perspectives: technology, business need, and the requirements of individual users.

Understanding the user's desired experience is particularly important with social computing because, unlike some IT tools, users are not required to use social computing. If they don't find social computing tools compelling, they will not use them.

To better understand user requirements, we developed usage models based on specific classes of user (personas). We then conducted proof of concept tests (PoC) with a small number of products, performing engineering and human-factors evaluations to select the best solution and verify the expected business value.

## Personas

We developed a series of usage models based on personas—hypothetical archetypes based on data gathered from real users. These help precisely define what users need and what they want to accomplish—which in turn helps define what the tools need to provide. Examples are described below.

### Design Engineer

**Background.** Experienced design engineer with extensive knowledge of tools and processes. The engineer must collaborate across organizations and regions. The engineer's challenges lie in knowledge sharing and workflow management.

**Environment.** Works in a cube alongside other members of his team but also works from home frequently because he collaborates with team members in other time zones. He uses a whiteboard daily as well as other physical and online collaboration tools.

**Work.** Works with dispersed team to design. This requires constant coordination with engineers working across multiple time zones, which is challenging. Everyone works locally before sharing globally; sometimes workflow is recreated multiple times. There are also cultural differences in attitudes toward work and communication styles.

**Value of social computing.** Enables him to find information faster (wikis, blogs, really simple syndication [RSS]); reduce redundancy (wikis, blogs); and connect to others in the organization (find expertise using professional networking tool, network analysis).

### Sales Engineer

**Background.** Seasoned sales engineer with extensive knowledge of his customers' product lines and their needs. His job is very fast-paced and he needs to find the right information quickly. He needs content that is tailored to him; he doesn't have time to sift through data he doesn't need.

**Environment.** He spends most of his time on the road visiting customers and is much more likely to be in a car, hotel, customer's office, or an airport than in his cube. He is often listening to or viewing content, entering data, and running applications on a handheld device.

**Work.** He is responsible for customer account management. His job involves solving his customers' issues and making sure they are satisfied. In order to meet their needs, he needs quick and efficient access to the right information and the right people. He also needs to stay on top of local news that affects his customers' business. Outside work, he spends a lot of time keeping up with other professionals in his network, discussing hot issues and sharing best practices. He is an active user of networking Web sites and subscribes to several RSS feeds.

**Value of social computing.** Enables him to find information faster (wikis, blogs, RSS); reduces time to find people with the right expertise (professional networking); and reduces information overload (RSS, integration of information, content delivery to mobile devices).

## Proof of Concept Tests

We conducted several PoCs using different tools. Each PoC was relatively small, involving fewer than 100 users. This enabled us to determine the business value and user experience delivered by each product. We learned from our PoC experiences that even if a product appears to have excellent features, it will be rejected by users if it does not provide a good user experience.

## Employee Pain Points

- **Intel employees can spend several hours a week finding the people and information they need to do their jobs.** Enterprise-wide, this adds up to a large impact on productivity.

- **Many employees work in globally dispersed teams and find it challenging to accomplish their work.** Due to time zone differences, there may be as few as two hours per day during which team members can communicate with each other in real time. As a result, collaboration on documents is often handled by e-mail, with the potential for confusion and crossed messages. Task hand-off between teams in different geographies can also be problematic.

- **New employees want to integrate into Intel faster.** Social computing could help new employees quickly learn about the company and discover which colleagues they need to connect with. This would improve the integration experience, leading to faster engagement and happier workers who become productive more quickly.

- **Employees want to put a face to a name.** Employees may work closely with people worldwide, but in many cases wouldn't recognize team members if they passed in the hall.

- **Some employees feel isolated.** Intel has restructured and reduced its workforce in recent years. This process can leave employees feeling isolated and disengaged. Social computing could reinforce a sense of community, giving employees a voice and making Intel feel like a smaller, more welcoming place.

## Architecture

We developed an architecture that combines social media and professional networking tools into an integrated social computing platform. The platform is enterprise-wide, so that employees can cross organizational boundaries rather than being constrained within them. If we apply social tools within silos, we simply perpetuate the silos.

Key elements of the architecture include unified capabilities available across all the tools. The fragmented, standalone social tools that have been used previously each include separate user profiles, tagging, and search structures. This defeats the goal of increasing information sharing and collaboration across the enterprise. In our architecture, all content is integrated with the enterprise search engine, enabling users to search for all related information wherever it resides, and each user has a single profile.

Our social computing tools need to integrate with existing enterprise tools and workflow. Employees will not simply abandon their existing tools and completely change the way they work, so we need to provide a path from the current environment to social tools. For example, social computing profiles become the corporate directory, and wikis become part of team workspaces.

We developed a set of guiding principles to direct the execution of the strategy.

- All capabilities must easily integrate into our enterprise search engine.
- All capabilities must integrate into work processes and standard office computing productivity tools.
- All capabilities must integrate across the social computing stack.
- All capabilities must be simple to use.
- Our goal is to minimize the number of individual infrastructures.
- All capabilities must support content syndication.
- We must design a platform that can be built upon in the future.
- Capabilities must allow unification of a person's profile, tagging, and search structure.

Our conceptual architecture is shown in Figure 1.

## Technology Implementation

We are constructing our platform from third-party tools that we assess through our PoCs. We are delivering the technology in phases so that we can provide some capabilities to employees more quickly and build on this
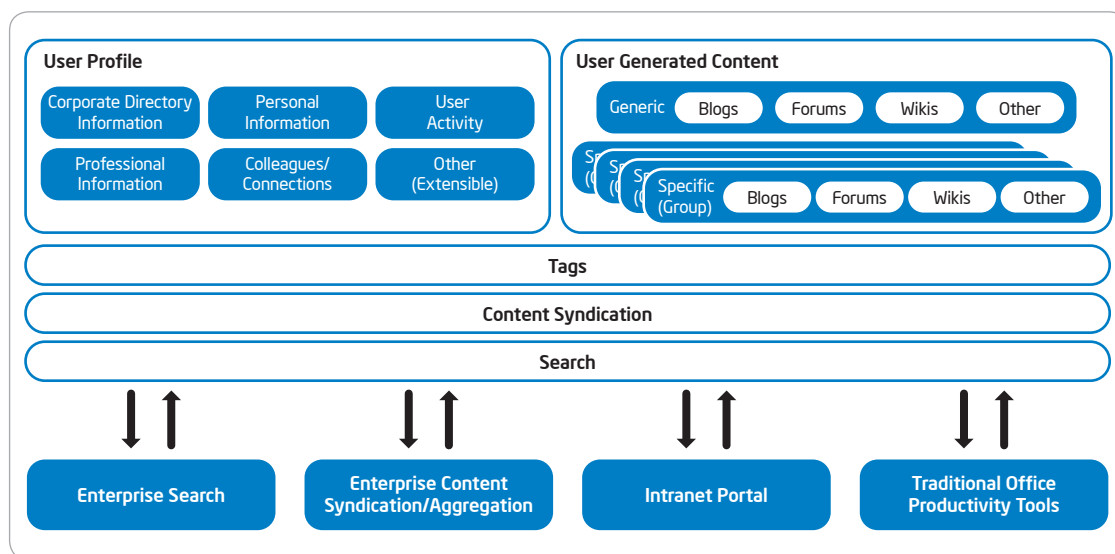


**Figure 1. Social computing architecture.**

over time. The screenshots in Figure 2 show many of the features we will implement.

## Phase 1. Enhance Current Tools

We designed phase 1, launched in the first quarter of 2009, to deliver part of a solid foundational base. It included improved versions of some existing capabilities such as blogs and forums. We began adding new capabilities such as professional networking. We also added network analytics.

## Phase 2. Remove Unmanaged Niche Solutions

Scheduled for summer 2009, phase 2 includes a pilot release of our new enterprise wiki. This pilot will allow early adopters to begin using the wiki and also to start

testing migration of over 200 existing standalone wikis. We plan a full wiki release by the end of 2009.

## Phase 3. Add New Capabilities

We plan to begin implementing phase 3 in late 2009 and will add full professional networking features, an internal on-demand video capability, and initial integration of the social computing stack with existing, traditional applications such as enterprise search, office productivity tools, and phonebook.

Our phased deployment will continue into 2010, when we plan to enable a widget library, recommendation engine, organizational network analysis, ideation tool, and mashups—and to extend applications to mobile devices.



**Figure 2. Intel's social computing platform provides our employees with the tools they need to collaborate with colleagues across the enterprise.**

# Key Learnings

We learned many valuable lessons as we developed our strategy and deployed our architecture. These include:

- **Consider the cost of inaction.** Consumer-based social technology is cheap and accessible; employees can begin hosting a standalone application with a few dollars and a server under their desks. If IT organizations do not act quickly, then users will begin downloading and hosting software or—worse yet—start using external unsecured applications.

- **Secure the environment.** Assess information risk from the start, don't discount regulatory issues, and ensure information security and protection permeates every step. Carefully balance the benefits of openness versus locking down the environment.

- **Identify opportunities where it is easiest to add business value.** For example, increasing productivity of business processes that are closely connected to revenue generation (such as sales and product engineering) enables us to show that we are delivering quantitative value back to the organization.[1]

- **Shop for a suite of tools, not disparate solutions.** Islands of social tools can add to users' frustration as they try to locate information. Integrating social media tools such as wikis and blogs with professional networking is critical in a business environment. This provides users with the tools to get work done—to share and discuss information once they are connected.

- **Integrate tools into business processes.** Make it easier for employees to adopt social computing. Change management is one of the biggest hurdles.

- **Define a governance model in advance, in partnership with Human Resources.** Document a use policy that aligns with the current code of conduct.

- **Emphasize real-world benefits to users.** Users need to see that there is personal value for them before they will change their behavior to take advantage of the technology. Training that includes scenarios can facilitate the changes in behavior needed for collaboration and valuable use of these tools.

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1  See the Intel Press publication *Managing IT Innovation for Business Value: Practical Strategies for IT and Business Managers* by Esther Baldwin and Martin Curley.

# Conclusion

Our social computing strategy is designed to address key enterprise goals such as improving collaboration and innovation. Our experience is that initial efforts to anticipate and shape approaches to legal, human-resources and governance issues can help ensure that the new collaborative technologies will provide effective channels for communication, collaboration, teamwork, networking, and innovation.

The deployment of our first phase has yielded moderate success in these areas to date. Early findings indicate improvements in the dissemination of information and innovative ideas. For example, a recent employee blog post asking for ideas to help Intel save money quickly generated an overwhelming response, including practical ideas that could contribute directly to Intel shareholder values.

However, we also found that a small subset of social technologies provides limited value, and we quickly realized the importance of rapidly deploying the full social computing stack. Accelerating this process will allow us to realize greater value from social computing—and mitigate the risks associated with unmanaged use of niche or external tools. Moving faster also requires

careful consideration of how to manage employees' transition to social computing. Training and community champions can guide employees about how to think differently about the way they work. This helps ensure that social computing complements their current workflow, rather than adding to their workload.

Implementing social computing involves challenges such as security risks and managing the transition to a new set of technologies. However, inaction carries much greater risks: that the enterprise will not realize the benefits that social computing can deliver, and that employees will increasingly turn to external, unsecured tools for communication.
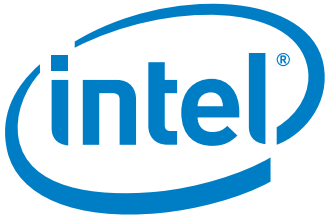
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## Acronyms

| | | | |
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| CEO | chief executive officer | PoC | proof of concept |
| CIO | chief information officer | RSS | really simple syndication |
| HR | human resources | | |