Conclusion
The term “Enterprise 2.0” (E2.0) describes a collection of organizational and information technology (IT) constructs that enable more flexible work models, knowledge sharing, and community building. E2.0 is not something totally new—rather, it represents the evolution and maturation of best practices for collaboration and knowledge management (KM). The meme is useful, though, to help reinvigorate business and IT focus on these strategic topics. A “rebirth” in terms of rethinking fundamentals, understanding past success/failures, and examining evolving cultural situations can profoundly alter past assumptions regarding collaboration and KM efforts—leading to novel approaches in light of today's organizational challenges.
Publishing Information

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Synopsis

Enterprise strategists have long been aware that the “informal organization” has tremendous influence on business success or failure. A vibrant culture with a strong sense of community and cross-functional network of employee relationships can significantly augment traditional management methods and processes structures. Hierarchy and formal controls can inadvertently result in compliance policies, decision-making roles, and work handing rules that constrain the ability of people to effectively communicate, share information, and collaborate. In many cases, these “gating mechanisms” are necessary business constructs that serve valid purposes (e.g., security), but they have unintended consequences: Communication may not be timely, relevant knowledge might not be shared, and collaboration may not occur across departmental boundaries. Breakdowns in information sharing and collaboration and a poor sense of community within an enterprise can impact a worker's willingness to share insight and pass along experiences. Catalyzing the informal organization is becoming a more complex challenge for business and information technology (IT) strategists as shifting employee demographics crystallize concerns regarding aging workforce trends and expectations of younger employees (e.g., new work models).

Recent market trends and media coverage have triggered a renaissance of sorts concerning collaboration and knowledge management (KM). The term “Enterprise 2.0” (E2.0) describes a collection of organizational and IT practices that help organizations establish flexible work models, visible knowledge-sharing practices, and higher levels of community participation. Improved employee engagement, in turn, helps organizations reap productivity and performance benefits that assist in attaining strategic goals. The justification for E2.0, therefore, is largely being driven by:

• Innovation and growth strategies that require improvements to organizational productivity and performance
• A multi-generational workforce that is causing employers to invest in programs to improve their human resources (HR) and employee relations (e.g., strategic talent management)

“E2.0” as a catch phrase has merit and deserves attention from business and IT strategists. Beyond the meme, however, E2.0 represents new packaging for strategic collaboration and KM. Organizations often rely on collaboration and KM initiatives to attain innovation, growth, productivity, and performance goals. Collaboration and KM efforts can also help address needs of the informal organization when these efforts are properly linked to human capital management programs that improve HR and employee talent strategies.
Analysis

The term “Enterprise 2.0” (E2.0) is becoming more widely used to describe a collection of organizational and information technology (IT) constructs that help strategists better engage employees by enabling flexible work models, knowledge sharing, and community building. In turn, organizations reap productivity and performance benefits that assist in attaining growth and innovation goals. In many ways, strategists should view E2.0 as an opportunity to reinvigorate longstanding collaboration and knowledge management (KM) efforts. Over the past decade, enterprises have often pursued efforts to improve worker productivity, process performance, and community building—goals now being associated with E2.0 initiatives.

Historically, however, collaboration and KM strategies have not always aligned with human capital management (HCM) plans. Collaboration and KM projects are likely driven by line of business (LOB) and IT management, whereas human resources (HR) departments guide HCM plans. Interest in E2.0 affords organizations the opportunity to holistically address collaboration, KM, and HCM needs.

A Perfect Storm Is Happening Now

A confluence of market, economic, societal, organizational, and technological trends are coming together in an unprecedented manner. Note that:

- Executive teams are focused on enhancing growth and innovation capabilities
- LOB managers are concentrating on attaining higher productivity and performance levels
- HR strategists are concerned about ways to best address shifting employee demographics
- Management teams overall perceive improved employee relations as a key factor in supporting growth and innovation objectives
- Decision makers involved in recruitment and IT directions feel challenged to address younger workers’ expectations of the workplace and technology
- IT organizations are being stretched to react to technology innovation in the consumer market and its impact on enterprise applications
- Organizations are shifting away from cost reduction and cost avoidance as primary business drivers

The following paragraphs expand on some of the critical trends that are making E2.0 a relevant topic for business and IT strategists.

Innovation = Survival

Senior executives now equate the very survival of an enterprise with its ability to innovate. Innovation enables organizations to be more resilient to societal changes, market shifts, economic transitions, and industry disruptions that might alter customer segments, competitive landscapes, and market structures. Many organizations are no longer wedded to innovation as a concept that only occurs internally or one that always rests on a new invention. Organizations are discovering that they can innovate and create value along a multitude of dimensions to deliver products, services, or delivery models that satisfy customer expectations and reinforce brand affinity. Innovation is also something that increasingly involves external relationships across customers, partners, suppliers, and even alumni of the organization. It is not uncommon to find strategists exploring ways to tap into an organization’s network of social and business relationships to create cooperative environments for pooling resources and jointly leveraging the intellectual capabilities of that community.

Growth Requires Productivity and Performance Gains
Simultaneously, senior executives are shifting business priorities away from the cost reduction/avoidance tactics adopted so stringently a few years ago and toward strategies that drive business growth. Programs and IT investments that support the following goals are now the main concern:

- Increasing sales and revenue
- Reaching new customers
- Improving customer service and retention
- Enlarging market share
- Selling more to existing customers

Such objectives are encouraging organizations to revamp processes, information management strategies, and a wide range of IT systems related to e-commerce, customer relationship management (automation of sales, marketing, and customer service activities), enterprise resource planning (ERP), supply chain management (inventory, warehouse, and shipping logistics), and business analytics. Spending on functional and operational areas, however, will not sufficiently address growth and innovation objectives. Improving collaboration and KM capabilities are other areas where Burton Group expects significant activities to occur. Market trends already reveal surging interest in Microsoft Office SharePoint Server 2007 and strategic exploration of social computing platforms (such as IBM Lotus Connections).

Globalization, workplace virtualization (e.g., fewer fixed facilities, increased remote and mobile staff), and specialization of knowledge-based work requires employees to become much better at communication, information sharing, and cooperating across functional areas. Indeed, collaboration is now often viewed as a critical organizational competency. Nearly 80% of senior executives in a 2005 industry survey identified effective coordination across product, functional, and geographic lines as crucial for growth, yet only 25% described their organizations as effective at sharing knowledge across boundaries.¹

Still Relevant: Knowledge and Human Capital Management (HCM)

While innovation strategies are top of mind for senior management teams, so are concerns regarding HR and strategic talent initiatives arising from:

- **The changing nature of work:** Successful endeavors are increasingly the result of leveraging relationships and expertise across those involved
- **Shifting employee demographics:** Aging workforce pressures are raising concerns regarding loss of experience, talent, knowledge, and competencies
- **New work models:** To attract and retain younger workers, a more flexible and supportive workplace environment might be necessary

A study by *McKinsey Quarterly* noted that work is becoming more interaction centric, requiring more tacit knowledge to effectively exploit organizational relationships. In *McKinsey's view*, certain types of business activities are becoming more “artful.”² Burton Group agrees with this assessment. It also believes this trend acknowledges the important role social dynamics have in determining how work really gets done (i.e., through the informal organization).

Such a renewed focus on the value of human capital in contributing toward growth and innovation goals differs markedly from actions organizations have adopted in the past (where attention was focused on process re-engineering and quality improvement programs). This broader view does not mean abandonment of streamlining efforts; rather, it identifies the need to augment efficiency efforts that improve formal work structures with programs to improve the effectiveness of HR that need to excel within those structures. It also calls out the need for organizations to establish more comprehensive HCM programs. To meet growth and innovation objectives, an organization needs to ensure that its workforce is motivated and engaged in ways that promote knowledge sharing and community building.
Numerous statistics on workforce trends have been published over the past several years. Certain industry categories (e.g., government, oil, and energy) are often cited as examples of segments that will experience high employee loss rates due to retiring workers. The difference now is that market, economic, and business trends—coupled with shifting employee demographics that lessen availability of resources to replace older workers—are reaching a point of clear business risk. Adapting strategies to improve HR and employee relations do not occur overnight. In a survey conducted by Saugatuck Technology and BusinessWeek Research Services, the issue still ranked tenth in terms of senior executive 2007 priorities but was the biggest single-year issue mover from 2006 priorities (refer to the “Influence of HR and Employee Relations” section of this report). A socialization process regarding culture and change management can take years to achieve. Short-sighted organizations that ask a retiring worker to do a “brain dump” a week or two before retirement will miss many subtleties that made that employee successful over the years.

Comprehensive employee engagement programs often rely on senior leadership, open communication channels, and HCM strategies. Efforts encompass salary, benefit, professional development, succession planning, and even community outreach aspects that appeal to workers' sense of community and good feelings about the company they work for. Signs are emerging that corporate social responsibility initiatives, for instance, help with enterprise efforts to attract talent and build higher levels of employee morale. A leading clothing firm publishes a social responsibility report that outlines its efforts involving fair labor practices with its overseas suppliers. Such efforts improve public brand value, and in addition, many HR strategists believe that social responsibility efforts positively impact internal brand perception (and loyalty) of employees.

Traditional IT approaches to improve productivity and performance often concentrate on functional and structural improvements in processes and information management. Results from these tactics are frequently mixed because technology alone cannot guarantee changes in worker behavior to exploit new work models. A combination of communication and social incentives are necessary to influence behavior change. Sustaining change also may rely on community-building tactics that encourage grass-roots ownership of the work practice. Without a sense of community ownership, workers will view the desired behavior transition as a management edict.

Why Enterprise 2.0?

Virtually all organizations can cite examples where collaboration and KM efforts were defeated because strategists and sponsors failed to appreciate the complex influence of informal work practices, hidden employee attitudes, untapped community participation, and opaque social relationships that connected people within and across boundaries. The result has been unfortunate. For instance, “KM” has become a tainted term in most organizations. Many champions now keep KM efforts in the background rather than leading with them when gaining project approval. It is common to find KM positioned as a secondary focus area that supports a broader initiative (e.g., customer relationship management [CRM]), or exists as a transitory activity to improve certain functional capabilities, or is being applied as a tactic to improve certain process activities (e.g., a product knowledge base for customer support teams).

Despite the negative perception of the term, the principles behind KM remain very much applicable to today's business environment. The continued pursuit of collaboration and KM goals has led many forward-looking business strategists and emerging technology teams to monitor consumer market trends. These strategists and teams are seriously examining popular social websites (such as those listed below) as templates that can be replicated within the enterprise to improve how people work together:

- **Bloglines**: An online service for news feeds (e.g., Really Simple Syndication [RSS])
- **del.icio.us**: A social bookmarking website
- **Digg**: A social news site where users vote on content
- **Facebook**: A social network site that was originally intended for college and high school students but that has opened up to older age groups
- **LinkedIn**: An online network used to maintain professional networks
- **TypePad**: A blogging service
- **MySpace**: An online community and social network site
• Wikipedia: A free content encyclopedia project where articles are collaboratively authored by volunteers in a community

• WordPress: An open source blogging platform that also offers hosting services

These consumer-oriented sites have successfully established credible levels of membership and community resulting in large amounts of user-generated content, while delivering an immersive user experience. Users tend to stay on these sites for long time periods and tend to visit them on a daily or weekly basis. The simplified scenario below outlines a typical sequence of events and flows:

• People begin to use socially oriented sites for their own purposes
• After joining, they discover they can share content more easily with friends and family
• Along the way, they also realize they can find interesting information and activities more rapidly within the community
• By participating to a greater degree, they expand their connections with other site members, forming relationships and communities
• Value from social interaction persuades them to create, customize, and extend their own involvement
• They are encouraged to reciprocate to the broader community, adding value back across their associated networks and groups

In the consumer market, certain technologies (e.g., Ajax, mashups), coupled with data centralization and adoption of social software tools (e.g., blogs, wikis, social bookmarks, Extensible Markup Language [XML] feeds, and social networking), have been associated with the term “Web 2.0.” A leap-of-faith argument states that Web 2.0 systems and resulting levels of consumer participation are transferable to an enterprise environment. The parallel application of this consumer-centric phenomenon in a business context has been labeled “Enterprise 2.0” (E2.0), although a decade ago, “KM” was the more popular term.

Assessing Enterprise 2.0

Industry focus on E2.0 surged in 2007 after Professor Andrew McAfee of Harvard Business School published an article on emergent collaboration in the spring 2006 edition of MIT Sloan Management Review. McAfee has since been largely credited with creating the concepts and definition behind E2.0 that are most often cited in the market (for additional information, refer to the “Origins of Enterprise 2.0” section of this report). He argues that current knowledge worker technology can be divided into two groups:

• Channels: Technologies such as e-mail and instant messaging (IM) that are easy tools for people to generate information but have low visibility to other knowledge workers (i.e., the information is only viewable to those who can access the communication and tool used to send/receive that information)
• Platforms: Technologies such as portals where information is broadly visible but is typically generated by a smaller group of knowledge workers, so the overall volume of information critical to knowledge workers is smaller than that contained within channels

McAfee also cites research that outlines well-known problems associated with e-mail, as well as the failure of efforts to effectively capture, share, and apply knowledge to knowledge work. The gap, McAfee points out, is that current tools do a poor job of capturing the practices and output of knowledge workers in a platform manner that is broadly visible. According to McAfee, “Enterprise 2.0 is the use of emergent social software platforms within companies, or between companies and their partners or customers.”

A new E2.0 platform approach, McAfee asserts, should mimic what is happening on the Internet (e.g., “Web 2.0”). McAfee also positions E2.0 as a technology paradigm that includes additional components. These E2.0 components are referred to by the acronym “SLATES,” which McAfee defines as:

• Search: Supplies advanced query mechanisms to discover content
• Links: Enables knowledge workers to create link associations between artifacts themselves as part of their work practices and knowledge output
• **Authoring**: Provides broader participation levels by enabling knowledge workers to easily contribute as individuals (via blogs) or collectively (via wikis)
• **Tags**: Allows knowledge workers to define their own categorization of web content
• **Extensions**: Enables automation features that improve categorization and pattern matching
• **Signals**: Provides alerts and notifications of new content relevant to a user's interest areas and activities (e.g., RSS)

Proponents argue that E2.0's organizational and technology constructs represent a new approach toward improving productivity and performance, which in turn can significantly influence how well organizations satisfy growth and innovation objectives set forth by senior management. The knowledge-sharing aspects of E2.0, supporters argue, can be viewed as a credible solution to address concerns about shifting employee demographics and the aging workforce. In this regard, E2.0 has synergies with the prioritization of HCM and strategic talent initiatives by executive teams as well.

At a high level, these positions and supporting arguments are mostly correct. Channels are indeed an ineffective method of collaboration. Platforms (i.e., workspaces) are a far more effective method for people to coordinate and share information as part of joint work activities. But areas clearly exist where past tools have not done an adequate job. Most enterprise content is still locked up in file-based containers. Workspaces are often not as visible and transparent as they could be (often due to security concerns), and some forms of communication (e.g., blogs and tag and social bookmark systems) are better implemented in a broadcast-like manner than transmitted via point-to-point (P2P) tools such as e-mail.

It is also true that many KM efforts failed because the methods, practices, and supporting technologies were immature or not effectively applied, not because the KM principles driving the effort were incorrect. In many instances, KM efforts collapsed because too much faith was put in technology as a panacea. A market parallel between KM and E2.0 can reasonably be drawn, given the level of “irrational exuberance” in the media that emphasizes the technologies associated with the term (e.g., blogs, wikis, and social networks).

Where Burton Group differs from the viewpoint adopted by E2.0 enthusiasts is that the constructs comprising E2.0 are something **new**. Burton Group believes that E2.0 represents the evolution and maturation of best practices for improving collaboration and KM. A new meme is helpful, however, to reinvigorate business and IT focus on these strategic topics. A “rebirth” in terms of rethinking fundamentals, understanding past successes and failures, and examining evolving cultural situations can profoundly alter past assumptions regarding collaboration and KM efforts—leading to novel approaches in light of today's business and organizational challenges.

The analysis below highlights areas of agreement and disagreement with industry use of E2.0. The definition involves three concepts that warrant closer examination:

• Social software and emergence
• Platform environments
• “SLATES” (Search, Links, Authoring, Tags, Extensions, and Signals)

### Social Software and Emergence

McAfee's definition of E2.0 unfortunately points to [Wikipedia's definition of social software](https://en.wikipedia.org/wiki/Social_software). Wikipedia's entry reflects confusion that exists in the industry at large (i.e., social software as a category overlaps with definitions related to online communities and collaboration). The result is that virtually any type of communication, collaboration, and information-sharing tool can be arguably part of E2.0. No design or other criteria exist for how social software tools satisfy an E2.0 context and under what circumstances tools (or their use) are considered outside the scope of E2.0. Absence of even a modest set of guidelines has confused the market to such a degree that the term “E2.0” is widely used to describe any new software product or service released over the past two years. This is reminiscent of the KM hype that confused the market in the late 1990's. Burton Group believes that the following behaviors are important to deliver by social software within the context of E2.0 (for more information, refer to the [Collaboration and Content Strategies overview](#), “Trends in Social Software”):
• Personal value:
  ○ The system provides value to the individual user regardless of any broader participation

• Multiple personas:
  ○ The system enables users to take on different “characters”

• Informal interactions:
  ○ The system is egalitarian and serendipitous, supporting emergent behavior

• Self-organizing participation:
  ○ The system enables participants to become aware of situations in the network and synchronize actions based on community relations

• Self-determined connectivity:
  ○ The system does not assign associations between people but can suggest associations—individuals elect to be connected based on relationship, information, and activity affinities

• Collective user experience:
  ○ The system is designed with feedback loops that signal actions taken by others in the system

• Community-determined credibility:
  ○ The system does not assign expertise or reputation based on formal sources but instead provides methods where expertise and reputation are the result of other member or network endorsements

• Community-influenced “findability”:
  ○ The system is not a replacement for formal enterprise discovery tools but enables contacts and information sources to be discovered by relying on other members as search and connection filters

• Recombinant:
  ○ The system supports user-driven creation and extension of platform capabilities (e.g., mashups)

• Blending work style with lifestyle:
  ○ The system provides a sense of personal ownership with appropriate interfaces to external services (e.g., federation with public IM networks)

While McAfee's definition also says “use of emergent social software,” Burton Group interprets this as “emergent use of social software,” given that social software itself is not emergent. Emergence is enabled by the manner in which users interact, behave, and apply capabilities mediated by social software. In this sense (“emergent use of social software”), Burton Group agrees with this aspect of McAfee's definition.

**Platform Environments**

According to the definition, E2.0 leverages a platform environment to make user contributions and interactions visible and persistent over time. A platform approach also makes the patterns and structure inherent in people's interactions observable (an important aspect of supporting emergence and network effects in an E2.0 context). Burton Group essentially agrees with this portion of the definition as well. McAfee identifies the gaps in using channels (e.g., e-mail and IM) for collaboration. Burton Group makes a distinction between spaces for collaboration versus a platform, but the essence of the E2.0 definition reflects a position held by Burton Group since 2005 (refer to the Reference Architecture Template, “Communication, Collaboration, and Content Model,” and the Collaboration and Content Strategies Root Document, “Communication, Collaboration, and Content: Compelling Convergence”).

**SLATES**

The SLATES model offers to fulfill the need for a conceptual representation that helps people understand underlying E2.0 constructs. While it is adequate as a bridging framework to ideas embodied in Web 2.0 and its applicability to the enterprise, it falls short in several areas:
• The Search and Links components are intrinsic to the Web as a hypertext platform, and many intranets already have search engines deployed. While some users may be dissatisfied with search technology, it continues to improve.
• Automation services within search engines are also getting better. This continuing trend actually reduces the significance of Extensions as a distinct E2.0 component.
• The Authoring component of SLATES is equated to blogs and wikis. While it is not incorrect to associate blogs to an Authoring component, the context associates blogs as a publishing activity. Burton Group believes it is more valuable to categorize blogs as a communication vehicle representing a “voice of the employee.” Associating an Authoring component to wikis, while not incorrect, could be improved. The collaborative nature of wikis shifts distinction of authorship to the background. While the content is a key focus, it is actually the community interaction and consensus occurring around that content (mediated by the wiki) that provides the primary value proposition in an E2.0 context.

There are two helpful components, however, within SLATES. Tags and Signals are critical concepts to articulate and build upon. The uniqueness of user-generated metadata applied in a freeform manner makes Tags a significant E2.0 component. A Signals component that helps with tracking and alerting needs is also valid, but it is made more descriptive by decomposing signals into those that are feed oriented (where users subscribe to state changes in a particular information source that interests them) and signals that are networks oriented (where signals are mediated through social connections).

**Fine-Tuning E2.0 and SLATES**

Overall, E2.0 remains an abstract concept (as does KM, for that matter). To help guide discussions, a visual illustration of E2.0 can be valuable as a reference point when debate becomes philosophical or dives into specific technologies. Often, an illustration (and supporting component definitions) can simplify a complex concept. A model need not be entirely precise (e.g., mapped one to one with certain management practices or technologies), but can help people understand, envision, or otherwise interpret the relationships between various building blocks associated with E2.0. In the case of E2.0, Burton Group presents the following visual conceptual model (see Figure 1) that refines and augments SLATES:

![Figure 1: A Model for Shared Awareness and Group Engagement ("SAGE")](image)

**Figure 1:** *A Model for Shared Awareness and Group Engagement ("SAGE")*
**Persona:** A Persona component is intended to put a “human face” on people who might otherwise only be known solely within an organization by their digital communication (e.g., e-mail), writings, or contact information in an employee directory entry (i.e., name, title, phone, department).

**“Voice”:** A Voice component provides people with an egalitarian opportunity to share observations or provide feedback on some topic or activity. From a business perspective, the notion of voice as an E2.0 component does for employees what organizations have done for many years in efforts to capture the “voice of the customer.” In broadcast media, the phrase “the voice of the people” is used to describe informal, spontaneous opinions captured in chance encounters.

**Groups:** A Groups component is one of the key areas that distinguishes an enterprise from the external world. Within an organization, people work together, often in teams or community of practice (CoP) structures, when contributing to business activities. Group formation is heavily influenced, and sometimes explicitly determined, by management. Typically, recognized teams and communities exist based on some level of management endorsement. E2.0 should enable an environment where group formation is emergent (i.e., self-organized and self-directed) and groups are recognized primarily for their responsiveness and outcomes. A Groups component must also address the means by which an organization's environment and culture attains a sense of community (i.e., membership, influence, integration and fulfillment of needs, and shared emotional connection). Community strongly influences an employee's level of engagement in work-related activities and reciprocation toward others.

**Tags:** A Tags component enables users to create their own cognitive map of information and other resources, structured and related as they see fit. A tag may mean virtually anything and can be used in a variety of contexts because each tag reflects a different level of meaning to that particular user. Sharing tags (and related structures) is a way for people to gain consensus and understanding on common interests or activities.

**Feeds:** A Feeds component enables users to subscribe to signals from a variety of information, application, and social sources. A feed allows users to define and set criteria for how they want signals to be communicated to them, as well as the manner in which they are delivered (e.g., e-mail, IM, website, and dedicated application). A feed allows people to tap into a stream or flow to capture and amplify signals that they are explicitly interested in, or signals that a system infers are relevant to a user.

**Networks:** A Networks component enables workers to exploit signals in a different manner than Feeds. Networks focus on the myriad interactions, conversations, and associations that people have within and outside of the workplace. Social structures make up a vast array of network types. Some networks may be personal (based on friendship). Others may be professional (mentoring or career support). Networks may be visible (a CoP is a cohesive network structure) or they may be opaque (where participants only know their immediate contacts but not those that are a “friend of a friend of a friend”). Networks can provide users with tremendous value (e.g., introductions, recommendations, and information filtering) and can sometimes turn around requests faster than the time it would take for a worker to go through formal channels.

The interaction patterns, behavior changes, contribution traits, and collective participation levels that are attainable through effective adoption of Burton Group's “fine-tuned” E2.0 model (i.e., SAGE) and components, as described above, have long been coveted by strategists involved in collaboration and KM initiatives.

While attention is not a distinct component, the challenge of managing attention creates a natural tension between individuals and the enterprise. Effective attention management techniques are critical services that not only need to calibrate services within Feeds and Networks but also need to provide necessary sensors and throttles within other components. For additional information on this topic, refer to the Collaboration and Content Strategies overview, “Techniques to Address Attention Fatigue and Info-Stress in the Too-Much-Information Age.”

**The Social Experience of E2.0**

When creating E2.0 social applications, designers should strive for the following four qualities: The user experience should have personal value, and it should be emergent, communal, and platform centric.

**Personal Value**

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To some extent, people have selfish reasons for participating in social applications. The system should reciprocate by delivering some degree of personal value back to that individual. Blogs enable people to establish their own voice. Wikis enable people to contribute content. Social bookmark systems make it easy for users to assign their own meaning (via tags) to information, categorize information in a manner that makes sense to them as an individual, and find the information again later. Without this type of quid pro quo inherent in the user experience, users may not become engaged enough to participate to any great degree. Two key user experience design points are:

- **Informal**: Participation is optional and contributions are volunteered.
- **Expedient**: The returns from what is contributed must be relatively quick (not necessarily immediate, but rapid) to maintain interest.

**Emergent**

While some scenarios for social software are goal oriented, a great deal of serendipity lies in how a social system is actually used by its participants. Blogs may be intended to capture comments and observations related to a project or work process, but they can also easily be extended by authors to discuss other concerns. Wikis might be intended to act as a formal reference site (e.g., an internal Wikipedia), but the same wiki can just as easily be extended to act as a place where communities of practice coordinate activities, share information, and make informal notes on best practices that augment pages devoted to formal definitions. XML syndication platforms might allow users to save feed items into folders that can be republished as feeds in their own right. This type of remixing can blend information from multiple sources into a highly refined channel to which any other number of employees might subscribe without any formal knowledge from content publishers and website owners. Social network sites may become a critical pipeline for an employee to discover which coworkers, alumni, or partners might know a particular customer so the employee can gain a warm introduction (versus a “cold call”). Two key user experience design points are:

- **Freeform**: The system should impose few rules and preconceived roles. It should support methods for system participants to improvise by adding plug-ins to augment functionality or easily invite other people to participate.
- **Network effects**: The system should support low barriers to membership in the system as well as multiple methods of communication and collaboration that result in exponential value generated by the system as the number of participants grows.

**Communal**

The system should support ways for participants to establish a sense of community that helps promote multiple levels of joint ownership, information sharing, relationship building, and mutual trust. A wiki, for instance, becomes a more credible resource if it has passionate contributors and editors. A blog becomes more than a personal soapbox when it becomes interconnected with other blogs and evolves into a mesh of distributed conversations. As more users participate in a social bookmark system in a public manner, the clustering of tags acts as a mediation vehicle between people and information sources. User profile pages that reveal more about an individual's past experiences, personal interests, and membership in professional associations creates engagement points for other employees. Two key user experience design points are:

- **Self-organizing**: In general, organizations cannot command that users form a community, nor can they control a social network. These structures are far more effective and sustainable over time when they are allowed to self-organize with the minimal amount of formality necessary to satisfy any enterprise requirement (e.g., security, identity, and compliance).
• **Collective experience:** The system must capture and share data about what goes on within the community or network and make various combinations of that data available to participants in the context of certain activities. For instance, when someone tags an information source, the system should display data about that tag in terms of its community-wide use. When an XML feed is subscribed to, or a feed item read, the system should display community information about the feed or item (e.g., number of subscribers, types of subscribers, and comments on an item). This type of sensory feedback helps influence participation as users obtain some level of peripheral vision related to the interaction patterns of other members.

**Platform Centric**

Fragmentation of social applications across disconnected infrastructure results in stovepipes that limit enterprise-wide value from social software (e.g., integration, overlap, and conflicting tools or incompatible plug-ins). While this does not necessitate using a single platform/vendor, it does imply that fewer are better. Design constructs implemented in a platform-centric manner exploit centralization of data and metadata and analysis of that information (e.g., social network relationships). A platform-centric mindset is better able to provide a public space for social interaction and user-generated contributions that also includes multiple types of applications. A platform design can correlate all information housed within the system to deliver more intelligent and contextual features (e.g., attention management, personalization, and recommendations). Two key design points are:

- **Transparency:** While it's valid to have “walled gardens” within an enterprise for security or compliance reasons, most organizations are riddled with inappropriate blocking issues due to politics. A platform design should allow for definition of appropriate participation barriers based on business requirements (e.g., security, identity). Artificial barriers should be avoided (i.e., those that prevent information from being shared across applications within approved permission models). The system design should also provide delegation of permission policies within valid walled gardens to member participants.

- **Persistency:** History is important. The system should track individual interactions and contributions at a granular level (e.g., reading data, comment data, and tagging data), make that information visible to other participants (controlled by permission capabilities delegated to that individual), and retain the information based on enterprise policies.

**Market Impact**

The term “Enterprise 2.0” has gained broad media popularity and brought forth a multitude of prognostications from industry and academic experts alike. This section examines E2.0-related market trends involving collaboration and social software technologies.

**Evolution, Not Revolution**

Media focus on E2.0 surged in 2007 after Professor McAfee published an article in the spring 2006 edition of *MIT Sloan Management Review*. Since then, the term “E2.0” has been widely used to describe virtually any enterprise software product or service released within the past few years. Predominately, however, several technologies are strongly and repeatedly associated with E2.0:

- Blogs
- Tag and social bookmark systems
- Wikis
- XML syndication (e.g., RSS, Atom)
- Social networking
Inclusion of these tools in E2.0 is not an incorrect association, but it is a limiting one. A more effective approach is to map tools to a conceptual model, and into the underlying components of that model, based on their support of certain criteria. The market is amiss by defining tools as E2.0 simply because they are deemed to be “new” or “better than” other technologies. For instance, blogs are a viable way to provide workers with an E2.0 Voice component. Social bookmark systems implement capabilities that support a Tags component. The open nature of wikis is well aligned with an E2.0 Community component. XML syndication satisfies signaling needs related to an E2.0 Feeds component. Social networking tools help people connect via common relationships, information interests, or activities—an approach that is very much aligned with an E2.0 Networks component.

Put another way, blogs, tags, wikis, RSS, and social networking are not the only E2.0 tools available. Any tool that satisfies the criteria outlined and fine-tuned in this report should be considered under the umbrella term “E2.0” if its use is also coupled with management methods and organizational practices aimed at employee engagement.

**Understanding History Rather Than Rewriting It**

E2.0 proponents have reacted as if certain technologies (e.g., blogs, wikis, tag and social bookmark systems, XML syndication, and social networking) have just emerged. These enthusiasts often go on to prognosticate that such tools are part of a disruptive technology wave that will impact traditional collaboration, communication, and content management solutions. This is wishful thinking on the part of E2.0 idealists. The modern concept of blogs emerged in the late 1990’s. Social networking technologies can trace their roots to expertise location tools (e.g., Tacit Software) that also emerged in the 1990’s. Wikis date back to the 1990’s, as do XML feed tools (e.g., RSS). Even the notion of tagging is not an entirely new concept. Author-supplied tags (i.e., keywords) have been a feature of office productivity tools and document management systems for many years.

Collaboration and communication technologies have been around for over 20 years. Excitement about the current collection of social software tools is the result of the continued evolution and cumulative maturation of the industry and specifically, the collaboration and communication markets. The “discovery” of tools that have actually been around for some time merely indicates that certain societal, economic, market, organizational, and technological circumstances have established some level of critical mass that enables a collection of products and services to gain attention and become hotly pursued.
Thinking in terms of “attention waves” versus specific time periods helps delineate some of the trends affecting E2.0 technology. The first wave of technologies related to collaboration and communication that caught the attention of many enterprises was mostly channel centric, providing all workers with basic tools such as e-mail, telephone, and audio/video conferencing. While some collaboration-centric technologies helped with file sharing, discussions, and coordination (e.g., calendaring software and group scheduling), many of these solutions were limited by the immaturity of scalable infrastructure and networks. When groupware applications emerged, some products contained their own infrastructure and networking services (e.g., Lotus Notes), allowing them to effectively scale across the enterprise.

Infrastructure and network platforms continued to evolve and mature, however, thus unleashing attention on a second wave of collaboration and communication tools based on Internet standards and a web architecture. The transition led to a flurry of vendors entering the market with products and services that exploited Internet and web capabilities. Enterprise IT organizations were very focused on technologies delivered by smaller vendors that were considered best of breed. However, while these vendors were able to gain a first-mover advantage and deliver some new or unique features, they often did not deliver the complete solution expected by enterprise organizations (e.g., security, identity, and back-end integration). As first-mover advantages evaporated over time, established vendors delivered extensions to existing products and services that made them compatible with Internet standards and web architectures while they re-engineered those platforms to natively exploit that more mature infrastructure and network.

When IT strategists look at the market today, they see that many first-mover vendors of the 1980's and 1990's that at one time were considered market leaders have disappeared as independent players. Lotus, a leading groupware vendor, was acquired by IBM. eRoom, a leading virtual workspace vendor, was acquired by Documentum (which in turn was acquired by EMC). Plumtree Software, a leading portal provider, was acquired by BEA Systems. Groove, a leading P2P vendor, was acquired by Microsoft. In some cases, these companies dissolved due to a poor business model and/or market execution (e.g., Netscape). But in many cases, the disappearance of these vendors can be attributed to structural changes in the market that caused a technology domain to inevitably become a functional component within a more generalized superplatform market.

**Figure 2: “Waves of Attention” Puts E2.0 in Context**

<table>
<thead>
<tr>
<th>1st wave</th>
<th>2nd wave</th>
<th>3rd wave (Enterprise 2.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Mail</td>
<td>Virtual workspaces</td>
<td>Blogs</td>
</tr>
<tr>
<td>Calendar</td>
<td>Enterprise portals</td>
<td>Wikis</td>
</tr>
<tr>
<td>Group scheduling</td>
<td>Instant messaging</td>
<td>XML syndication (RSS, Atom)</td>
</tr>
<tr>
<td>Network file shares</td>
<td>Presence</td>
<td>Tag and social bookmark</td>
</tr>
<tr>
<td>Discussion forums</td>
<td>Web conferencing</td>
<td>Social networking</td>
</tr>
<tr>
<td>“Groupware”</td>
<td>P2P systems</td>
<td>Social filtering (i.e., Digg)</td>
</tr>
<tr>
<td>Telephone</td>
<td>Expertise automation</td>
<td></td>
</tr>
<tr>
<td>Audio conferencing</td>
<td>Unified communications platforms</td>
<td></td>
</tr>
<tr>
<td>Videoconferencing</td>
<td>Converged collaboration and content platforms</td>
<td></td>
</tr>
</tbody>
</table>

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Converged Collaboration and Content Platforms

This consolidation phenomenon occurs continuously. Markets that were once identified as distinct segments (e.g., calendar/group scheduling, discussion forums, portal, and virtual workspaces) have all collapsed into a platform-centric model dominated by IBM and Microsoft, with Oracle as a contender. Indeed, the enterprise content management market is undergoing such a transition today. It is no coincidence that it involves these same three vendors. To excel, vendors need to build out complex channels and partner ecosystems as well as invest in research and development (R&D) activities. It is an expensive proposition. The consolidation of formerly distinct market domains into a generalized collaboration platform model has provided IBM, Microsoft, and Oracle with enough market inertia to now subsume capabilities once associated with a distinct enterprise content management domain (e.g., document management, web content management, records management, and enterprise search).

Unified Communications Platforms

A similar convergence pattern is also occurring between the collaboration and communication markets. Historical market evolution in the collaboration and communication markets has established three technology domains: unified messaging (e.g., e-mail, voicemail, and fax), real-time collaboration (e.g., IM, presence, and web conferencing), and real-time communications (e.g., Internet Protocol [IP] telephony, audio conferencing, and videoconferencing). Consolidation trends that influenced the convergence of collaboration and content markets are also driving consolidation of these three technology domains into a generalized platform model referred to as “unified communications” (UC). IBM and Microsoft are entering the UC market from a position of strength in the collaboration market, while vendors such as Avaya, Cisco Systems, Nortel Networks, and Siemens are entering the UC market from a position of strength in communications. Cisco, IBM, and Microsoft are attempting to span both the collaboration and communication technology domains to differing degrees (refer to the Collaboration and Content Strategies reports, “IBM Sametime 7.5: Just-in-Time Rediscovery of Real-Time Collaboration” and “Office Communications Server 2007: A Pivotal Enterprise Decision”).

Common Integration, Infrastructure, and Networking Services

Compared to a decade ago, the IT industry has also progressed significantly in terms of the following offerings:

• Database systems that now handle unstructured data and are getting better at handling rich media
• Network services that enable global connectivity with much better support for mobile computing scenarios
• Security, identity, and directory services that remove the need for applications themselves to duplicate this type of infrastructure
• Lightweight programming models that can be used to construct loosely coupled systems (e.g., Representational State Transfer [REST])
• Rich Internet applications (RIAs, often based on Ajax) and offline web applications that free users from fat clients that need to be installed beforehand
• Software as a service (SaaS) that delivers near-instantaneous provisioning
• Web services, XML, and service oriented architecture (SOA) models that provide discoverable, programmable, and extensible integration services (e.g., mashups)
• Composite applications that interweave rich media content with more traditional application components
• A convergence of structured and unstructured data that enables greater centralization of information

While much attention is being paid to this third wave of technologies, the roots of these solutions are reflected in the evolution of standards and the broader availability of generalized platform services. It is this overall maturation of technology that has established a richer foundation for delivery of social applications than was possible years ago.

E2.0 Tools Emerging on All Fronts
As in previous market transitions, a comparable sequence of events concerning technologies labeled as “E2.0” is occurring in the market:

- Specialized vendors and open source projects deliver E2.0 technologies
- Traditional enterprise vendors deliver an initial response
- Specialized vendors and open source projects continue to iterate
- Traditional enterprise vendors deliver best-of-breed capabilities within a platform model
- Market consolidation begins

The initial market response to E2.0 by a superplatform vendor often results in a solution that is not as good as that delivered by a specialized vendor. However, what the superplatform vendor does deliver often leverages that particular vendor’s platform as well as other generalized infrastructure and networking services in ways that satisfy enterprise requirements. Specialized vendors typically update their tools more rapidly to keep pace with market expectations, resulting in feature sets that often satisfy or exceed the requirements and organizational value associated with E2.0.

This creates quite the market paradox. Companies generally prefer, and feel more comfortable with, solutions delivered by larger vendors with whom they already have a relationship. However, that market option may not deliver the business value sought by those drawn to the E2.0 concept in the first place. Specialized vendors might satisfy the value proposition represented by E2.0 extraordinarily well but may not have the underlying robustness that enables its solution to satisfy broader demands (e.g., identity, security, and compliance). The dilemma represents a classic time-to-market/time-to-value benefit that can favor specialized vendors versus the reduced complexity (e.g., integration and eventual technology overlap) and total cost of ownership argument that favors superplatform vendors. Large vendors will likely make acquisition moves in this market over the next one to two years (especially in the area of XML syndication).

<table>
<thead>
<tr>
<th>Category</th>
<th>Enterprise option (specialist or open source)</th>
<th>Enterprise option (superplatform)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blog</td>
<td>Drupal, Six Apart, Tracioni Software, WordPress…</td>
<td>BEA, IBM, Microsoft, Oracle</td>
</tr>
<tr>
<td>Wiki</td>
<td>Atlassian, MindTouch, Socialtext …</td>
<td>BEA, IBM, Microsoft, Oracle</td>
</tr>
<tr>
<td>XML syndication</td>
<td>Attensa, KnowNow, NewsGator…</td>
<td>?</td>
</tr>
<tr>
<td>Tag and social bookmark</td>
<td>Connectbeam, Cogenz, Jive Software Scuttle</td>
<td>BEA, IBM</td>
</tr>
<tr>
<td>Social networking</td>
<td>Contact Networks, Tacit, Visible Path Awareness, SelectMinds, HiveLive</td>
<td>BEA, IBM, Microsoft</td>
</tr>
<tr>
<td>Social filtering</td>
<td>Pli gg (open source)</td>
<td>?</td>
</tr>
</tbody>
</table>

**Figure 3: E2.0 Technology Snapshot (Illustrative List)**

**Inevitable Consolidation**
The market is, in fact, acting just as it is supposed to. New entrants emerge, existing vendors respond, and competition ensues. Historically, the market has frequently taken specialized software that is application centric and commoditized it into generalized software that is infrastructure centric. When put in this context, there is nothing different in the tools associated with E2.0. Consolidation is almost a guaranteed transition when software can be applied across many different application scenarios, and when demand causes the software to become attractive to large platform vendors. These attributes are applicable to E2.0 software, which is being viewed as reusable and shareable components by vendors such as IBM, Microsoft, and Oracle.

There is, however, a critical difference between what happened during prior transition periods and what is happening with E2.0 tools. The time period that awarded some first-mover protection to specialized vendors has become much smaller in certain E2.0 tool categories (i.e., blogs and wikis). This implies that all vendors are benefiting from overall maturation of integration, infrastructure, and networking services. First-mover advantages that might have lasted 18 to 24 months can sometimes last only several months before a comparable offering is available from entrenched vendors.

Such a change in market dynamics, however, does not imply that the faster response from larger vendors equates to competitive products or services:

- **Behind the curve:** Microsoft's blog and wiki implementations are not as complete as similar hypertext capabilities available from specialized vendors (e.g., Traction Software)
- **Missing pieces:** IBM Lotus Connections (positioned as a social computing platform for the enterprise) is missing some platform components (e.g., wiki, XML feed management)
- **Old baggage:** BEA's social bookmark system has some prerequisites that require pieces of its AquaLogic portal and collaboration technology

Still, the overall market trend is undeniable. Superplatform vendors react more quickly today to market and technology transitions than they have in the past. As a result, specialized vendors have a shorter first-mover advantage.

**A Window of Opportunity**

Despite market consolidation trends, specialized vendors can survive and even thrive in a platform-centric market dominated by a few large vendors. Specialized vendors need to:

- Excel at solutions they deliver and maintain a superior lead in terms of social software features
- Identify vertical scenarios where specialized solutions continue to dominate
- Plan for integration and alignment with superplatform vendors over time

Such a strategy would likely result in credible solutions from specialized vendors that extend the E2.0 capabilities of a superplatform, or act as an alternative module to an E2.0 component from that superplatform vendor.

Examples of the first approach are illustrated by Socialtext, with its SocialPoint solution that loosely integrates its wiki with Microsoft's SharePoint Products and Technologies. NewsGator is working on a similar solution called “Social Sites,” which integrates its XML syndication platform with SharePoint. IBM could adopt the second approach, choosing to establish a partner ecosystem around its Lotus Connections platform where customers could configure the platform to work with other blog, wiki, and “E2.0” components provided by specialized vendors.
Consolidation also does not mean that IT organizations should dismiss solutions from specialized vendors and assume that “good enough” E2.0 tools from larger vendors will necessarily improve within a reasonable timeframe. For instance, little evidence exists that superplatform vendors will deliver XML syndication platforms in the short run (12 to 18 months) that are similar to the feed client, aggregation, and management solutions offered by Attensa, KnowNow, and NewsGator. In the case of Microsoft, it is unlikely that customers should expect any significant social software upgrade prior to the second half of 2009 or early 2010. The 2007 commercial release of Office SharePoint Server was a major upgrade to its strategic collaboration and content platform, and there are no indications that another significant release will follow soon. Depending on the technology category of tools related to E2.0, specialized vendors likely have a one- to two-year period before superplatform vendors deliver robust and comprehensive alternatives.

Gazing into the E2.0 Crystal Ball

The term “Enterprise 2.0” will probably linger on for the next two years. Like the term “knowledge management” before it, E2.0 will represent a combination of management methods, organizational practices, and enabling technologies geared to improve the way people communicate, share information, and collaborate. As such, the two technology dynamics described below can be expected.

Consumer Market as Incubation Lab

The sustainable difference that E2.0 will bring from a technology perspective will be the continued focus on the social aspects of work, involving people's relationships, communities, and networks. There is no better environment for IT strategists to observe than the consumer market in this regard. Some examples include:

- **Digg** represents a collective decision-making system designed around predicting, voting, and social filtering, where information or other activities can rise to a point where they become visible as a “hot item.”
- **Facebook** and other social network sites in some ways resemble a portal-like platform that provides people with a wide range of interaction and connection methods, as well as a plug-in model for applications.
- **Twitter** represents an intriguing evolution of multi-channel presence and communication delivered in a persistent and transparent manner.

Innovation by Enterprise Software Vendors

While much of the credit for innovation in the social software space is properly attributed to the consumer market and specialized vendors in the enterprise software space, traditional software vendors are also engaged in some creative research and implementation:

- IBM has been conducting research for quite some time regarding **activity-centric computing**. The technology makes its first credible debut in Lotus Connections. The “Activities” component is a platform approach that centralizes units of work hidden within a variety of productivity tools. Uniting interaction and task fragments into a visible structure (i.e., an “activity thread”) to form a collective work pattern is well aligned with E2.0.
- BEA has implemented an interesting algorithm called “**ActivityRank**” into its AquaLogic Pathways product that analyzes multiple factors depending on whether the object being ranked is an item (such as a document) or a person.

Oracle (e.g., the [Oracle AppsLab](https://www.oracle.com/apps/)) group and Microsoft (e.g., the [Community Technologies Team](https://www.microsoft.com/communitytechnologies/)) are active in the area of social applications. Experience gained from these efforts will benefit how each vendor integrates E2.0 capabilities into their respective platforms.

Post-Hype Recovery Efforts
As organizations introduce and gain broader adoption of social applications, their focus will shift to improving infrastructure services necessary for such tools to become industrial strength:

- **Identity:** Social networking applications are building out rich user profile capabilities, but the functionality is not always well linked with identity management infrastructure. Multiple products often require users to create multiple profiles that are separate, and there is no effective way to federate internal and external social network sites and related profiles.
- **Security:** The nature of social applications is to make most changes visible and transparent throughout the system. This capability can create security concerns related to privacy, confidentiality, identity theft/impersonation, and so on.
- **Records management:** Social applications often provide different methods of communication that may fall under compliance and other regulatory policies that make audit and records management a required function.
- **Content and data unification:** Advancements in XML and database systems will continue to drive consolidation of unstructured and structured data. Social applications and supporting platforms will be impacted by standards related to XML Query (XQuery) and related repository transformations. For more information, refer to the *Collaboration and Content Strategies* report, “XQuery and Its Implications for Content and Data Management.”
- **Analytics:** Social applications often require a deep understanding of user activities across a large set of participants that may or may not reside on the same platform. The ability to perpetually analyze minute fragments of attention, interaction, and relationship activities from a multitude of sources and correlate that data to support features within social applications will demand a much higher prioritization of analytical infrastructure. It is likely that the market will deliver some type of relationship connectivity service (to assess strength/weakness of connections) and social context engine (to derive patterns from user behaviors and augment that information for the benefit of other system participants).

Another long-term trend related to E2.0 will be continued externalization of these systems in ways that balance on-premises and SaaS configurations. To be credible in this market, any provider of social applications, products, or services will need to support a hybrid model.

**Market Alignment with IT Architecture**

The majority of technology associated with E2.0 fits well into existing enterprise architectural domains. Technologies such as XML syndication, blogs, and social bookmark systems map well to a communication domain. These tools are more channel based (i.e., XML syndication) or implement a communication-post pattern such as blogs and social bookmark systems (refer to the Reference Architecture Technical Positions, “Blog Technology Within The Enterprise” and “Tag and Social Bookmark Systems Within the Enterprise”). Technologies such as wikis map well into a collaboration domain because they continue the “spaces for joint work” collaboration model that has been espoused by Burton Group for some time. Figure 4 depicts a simple illustration of a communication, collaboration, and enterprise content management domain.
Figure 4: Before E2.0

Architecture teams should expect some change from E2.0 market trends to impact traditional domains. A community and networking component could very well emerge over the next few years as a category that provides common services to communication, collaboration, or content domains but that is different enough to warrant a specific focus (see Figure 5).
Recommendations

Social applications will continue to emerge and flourish over the next several years as strategists and IT decision makers realize that a focus solely on transactional efficiencies and functional effectiveness will not achieve growth and innovation objectives. As in historical renaissance periods, E2.0 is a cultural movement that exploits a timely maturation of social software to satisfy business imperatives concerning growth, innovation, and employee demographics. Below are several recommendations for how organizations can approach E2.0.

Understand the Business Value (or Not) of a Social Enterprise

Future productivity and performance gains will be increasingly influenced by how well an enterprise understands and is able to leverage its social systems—not only those enabled by technology, but also the relationships and community aspects that sustain an organization's culture. Social systems augment management hierarchy and formal processes by enabling workers to exploit informal work structures or improvise as needed. Informal work practices will be largely driven by community relationships and social networks that cross organizational boundaries (internal and external). Management's lack of ability to easily control such work practices will become a major policy challenge over the next several years.

Such HR challenges transcend E2.0 technology as business leaders address aging workforce pressures and the complexity of replacing those workers with younger employees. New work models and broader employee engagement programs, coupled with traditional governance policies and security/compliance controls, will largely determine the degree to which an enterprise can manage the organizational and technological risks associated with a more social and transparent workplace environment.
Finally, it is important that strategists also comprehend how their core business model, market objectives, customer priorities, management style, and internal cultural factors either support or act as a social barrier. Understanding the value gained from a more social enterprise requires strategists to gauge where E2.0 concepts are applicable, where the concepts are dependent on certain organization transformations, and where the concepts may not be limited in some fashion:

• Not all organizations are focused on improving employee engagement. Enterprises that remain driven to slash operating costs (e.g., through layoffs), reduce benefit programs (e.g., health and retirement), and abruptly restructure business units (e.g., via sudden decisions to outsource) may be acting prudently, but they are not candidates for successful E2.0 programs.

• Some organizations cherish individual talent and performance to such an extent that compensation programs encourage hoarding of information and expertise. Such environments are not conducive to the community-building and social networking aspects of E2.0.

• Specialized knowledge (requiring certification) may limit information sharing or relationships with coworkers due to “walled gardens.” Security, compliance, and other constraints do not necessarily cause E2.0 to be dismissed, but supporters need to recognize the value of improving productivity and performance within compliance structures and security perimeters that the organization needs to define based on circumstances that it cannot control (e.g., industry regulations).

Focus on HCM

Enterprises with supportive cultures that value collaborative and cross-boundary networking are, in many cases, better positioned for growth and innovation than competitors. Such enterprises are already well positioned to catalyze employee know-how and relationships across customers, partners, suppliers, and alumni. They are likely able to attract and retain talent across multiple demographic categories (e.g., young/old, male/female). In many ways, such organizations form an archetype for implementing E2.0 concepts. Unfortunately, most organizations are not at that level of maturity. Many organizations are struggling to address aging workforce pressures and position themselves properly to attract and retain younger workers (e.g., “Gen Y”). Therefore, organizations should consider implementing a multi-generational workforce management program that includes:

• Assessment of employee demographic and aging workforce trends to identify impact areas
• Evaluation of job categories, descriptions, salaries, and benefits, as well as succession planning and professional development programs
• Defining appropriate HR remediation tactics based on comparing the organization's needs for skills, competencies, and talent over the next few years to the replacement capabilities it expects from new workforce entrants
• Implementing leadership, outreach, and community-building programs to establish cultural support systems that enable knowledge transfer
• Adoption of flexible work models to attract new job candidates and retain current workers

Update and Refine Knowledge Management Efforts

Despite the screams that would arise from E2.0 purists, it's true that much of E2.0's community-building and social networking aspects are long-held goals of those involved in organizational learning and knowledge management (KM). The mistakes of past KM initiatives should not be forgotten (e.g., a technocentric focus), but neither should organizations walk away from those methods that have enjoyed success over the years. Certain KM best practices, especially those tied to program governance, should be adopted as part of E2.0 efforts:

• Define what E2.0 means to the organization. Don't rely on vague industry definitions and media hype.
• Assume that E2.0 is a program, not a project. The E2.0 journey will last for some time, comprising multiple initiatives.
• Support the business model. Some walled gardens are necessary to satisfy security needs. Compliance needs can require “ethical walls” (e.g., separation of duties between people in different roles or groups). Both requirements limit collaboration and network effects in valid ways.
• Garner executive support, but thrive on grass-roots ownership.
• Design end-to-end value (e.g., to growth and innovation goals) rather than functional gains.
• Align with HR programs to address multi-generational workplace needs.
• Define “program” metrics. While a formal return on investment (ROI) may not be possible in all cases, there should be some agreement on success, failure, progress, and completion of the effort.
• Enable E2.0 around a technology ecosystem, not a particular product set of vendors or products.
• Include methods to communicate success and failures (lessons learned) across the organization.

Understand That Not All Collaboration Is E2.0 Collaboration

E2.0, as defined by McAfee, primarily focuses on emergent collaborative interactions that are egalitarian in nature (suggesting a degree of volunteerism) and enabled by social software. This definition leaves open other categories of collaboration that are not emergent, where participation is directed (e.g., by a workflow) or conscripted (e.g., by a user's role). McAfee does not provide details on how E2.0 applies in these more formal and structured use case scenarios. The implication to strategists is that they should not equate E2.0 simply to deployment of the tools themselves (e.g., blogs, wikis). It is entirely possible to use social software as a means to improve productivity without that solution being de facto classified as E2.0.

Such a situation is actually a beneficial state of affairs since it removes the false-positive mindset that technology deployment alone qualifies an organization as having done something related to E2.0. Nonetheless, leveraging a platform-centric approach that sets the stage for subsequent emergent collaboration patterns is a valuable step in the right direction. Adopting social software within more formal and structured work activities allows an organization to catalyze the type of E2.0 interactions associated with McAfee's research (when coupled with HCM practices that might need to occur in parallel).

Re-Examine Collaboration Technology Strategies

Organizations that are already effective at using channels for communication and workspaces for collaboration may wonder what all the fuss is all about concerning E2.0 and social software. Companies falling into this category should make sure that ongoing collaboration strategies and supporting tools accommodate business and organizational requirements highlighted in this report (related to growth, innovation, and employee engagement). Because many enterprises are still grappling with aging workforce pressures and shifting employee demographics (e.g., younger workers), an IT organization could very well obtain new requirements that trigger closer examination of consumer technology related to blogs, wikis, tag and social bookmark systems, XML syndication, and social networking. Often these written requirements will incorporate metaphors in which business representatives indicate that they want internal versions of popular consumer sites such as del.icio.us, Wikipedia, and Facebook. If such a situation arises, IT strategists should consider the enabling technology aspects of E2.0 as efforts that supplement ongoing investments (assuming that the organization is already somewhat mature in its implementation and adoption of collaboration tools). Architecture groups should:

• Map social software into existing communication, content, and collaboration domains (as stated in the “Market Alignment with IT Architecture” section of this report).
• Adjust collaboration and content architectural domains, given technology direction concerning social networking and community services.
• Critically assess existing “favored vendors” (e.g., IBM and Microsoft), ranking the level of their respective social software implementations.
• Perform gap analysis on existing standard vendors, including a date where the organization believes that preferred vendors will close those gaps and where specialized vendors should be identified as tactical or strategic options.
• Once specialized vendors are evaluated, revisit their positioning as standard based on progression of platform vendors. In some cases, specialized vendors will remain strategic for some time.

One of the added benefits of the platform approach advocated by E2.0 concepts is the establishment of an environment where the interactions and contributions of people participating in social applications become visible and persistent over time. A platform approach provides a more cohesive environment that enables patterns and structures to be observable by other participants, assisting with network effects and supporting the overall notion of emergence within an E2.0 context.

**Selling E2.0**

Organizations that do not consider themselves very far along a maturity curve in terms of collaboration strategies face the prerequisite of establishing a business case for E2.0. One approach is to identify productivity pain points and illustrate how social software tools can alleviate those problems:

• Blogs can help capture information in an informal manner that otherwise might never be collected or that might end up in already overflowing e-mail systems (e.g., shift notes, meeting minutes, or grapevine news on competitive and market activity).
• Wikis can improve peer review and consensus activities as teams collaboratively author content.
• XML syndication can make workers more productive, because information they are interested in tracking is delivered to them through a subscription model; they don't have to visit multiple intranet sources and determined what has changed.
• Tag and social bookmark systems can provide a better means of openly sharing interesting information, perhaps reducing e-mail volumes that only contain links to suggested sites.
• Social networking tools implemented as part of professional support networks can help with community-building efforts. For instance, organizations that have implemented professional support networks might realize increased promotion rates or increased retention levels for certain categories of employees.

Ultimately, selling E2.0 should be grounded in the growth, innovation, and HCM needs outlined in this report.

**Leverage a “Fine Tuned” E2.0 Conceptual Model**

While Burton Group generally agrees with the E2.0 definition offered by Professor McAfee, it recommends that organizations refine the original E2.0 concepts and SLATES components based on assessments provided in this report, including the SAGE model.

Transitioning to a revised set of E2.0 components from concept to adoption requires management methods and community practices that improve an organization's HR and employee relations, coupled with tools that help catalyze the informal structures, network relationships, and other social aspects of work.

Persona provides the social information that helps other employees build out their own mental model about a certain coworker and help lower connection barriers as people informally discover that the person is credible, that they have shared interests, and they perhaps have common connections through other employees. A Persona component can often be delivered as part of a superplatform that delivers E2.0 capabilities (e.g., IBM and Microsoft) or by tools from specialized vendors.

Voice enables employees to have a communication channel available to them to express their opinion and observations in an informal manner. This helps with efforts to provide tools that assist workers with storytelling and other forms of anecdotal narratives under the banner of knowledge sharing. Blogs are a good approach toward instantiating this component.
Groups enable employees to form their own associations and relationships in order to self-synchronize individual work with a team or community effort. Groups also ensure that everyone in the self-directed collective is situationally aware of each other's activities. This allows workers to gain a degree of shared decision rights by providing a means to jointly own and contribute to an objective, obtain group consensus, and establish varied levels of trust. In many ways, Groups are about flattening hierarchies, avoiding dependencies on “push” information, and prioritizing community participation that democratizes the workplace. Such traits often will support knowledge and HCM goals. Wikis can be leveraged for this component.

Tags enable people to organize collections of resources in a way that makes sense to them, but in doing so, tags and tagging patterns of people are made visible to everyone else in the system. As these patterns and structures emerge, opportunities arise for community building as people discover shared interests, relationships, or activities. A social bookmark system is a credible solution for enabling a Tags component.

Feeds provide a signaling mechanism to the individual worker, but the analytical data made visible to users who participate within a feed system can help transition individual participation to community interaction as people discover (through signals sent through a feed) that they have shared interests, relationships, or activities. XML syndication tools satisfy many of the objectives related to this component.

Networks are another type of signaling system, but one that is anchored around informal connections between people based on shared interests, relationships, and activities. The “grapevine” is one example often cited as being a more trusted source of information (and one where information is disseminated more rapidly) than formal communication channels. A Networks component can often be delivered as part of a superplatform or by tools from specialized vendors (e.g., Awareness, HiveLive, Leverage Software, and SelectMinds).

Explore, Learn, and Adapt

A focus on adoption is critical when pursuing organizational goals related to E2.0. Typically, IT organizations drop out of the process after tools are deployed. With E2.0, it is important that IT strategists stay engaged and focus on the adoption aspects of social applications. This helps clarify the importance and value of understanding E2.0 requirements that are “soft” when compared to business needs and technology solutions that target automation of certain functional activities.

E2.0 does not necessarily mean other tools are no longer used or are diminished in some way. Many technologies related to E2.0 augment other tools, such as virtual workspaces, portals, and search engines. Indeed, IT analysts might see how to bridge older tools with those that are more socially designed. For instance, rather than using e-mail distribution lists to broadcast information, an analyst could map an e-mail address to an XML feed, which would distribute the information to all subscribers. The alleged conflict between “old tools” and “new tools” is also somewhat linked to a multi-generational workplace. Older workers who have used e-mail for many years will likely resist attempts to change their behavior in favor of blogs or social bookmark systems to communicate or wikis to collaborate. For older workers, social networking may be much more of a face-to-face experience than it is for more technology-savvy, younger workers, who might be considered “the Facebook generation.” Technology can help in some cases (e.g., XML feeds sent to e-mail clients or word processing tools that publish to a blog). Overall, however, behavior change will require a blend of mentoring, peer support, and training.

For global organizations, certain nuances relate to language and cultural differences. Users in the United States may tag webpages using grammar and spelling that is different from that of employees located in Europe or Australia. Workers in Asia may use tools that are highly mobile-centric, requiring different levels of functionality than workers in other parts of the world. Language translation also comes into play as a requirement for social applications.

These factors call out the need to pilot, observe, gather feedback, and iterate rapidly. Social applications will likely require more fine-tuning and continual adjustments, given their level of intimacy and alignment with user behavior, than will other applications that are focused on automating less volatile transactional or functional capabilities.
The Details

The sections that follow provide additional information about:

- Growth and innovation trends
- Multi-generational workforce trends
- The origins of Enterprise 2.0
- A conceptual model for Enterprise 2.0

Growth and Innovation Trends

While there is no indication of a return to the late 1990’s spending boom, there are signs that organizations are shifting their mindset away from a focus on information technology (IT) cost reduction/avoidance (i.e., operational efficiency) and toward technology investments that support business growth and innovation objectives.


Opportunities and challenges brought about by globalization, structural changes in markets, more aggressive and/or disruptive competitors, transformation of product and service delivery models, and pressure to improve on customer acquisition and retention are encouraging senior executives to position “innovation” as the most credible strategy to pursue. Sustaining high levels of innovation will ensure business resiliency, agility, and adaptation over time. Indeed, in some C-level surveys, innovation is equated with actual survival of the firm.
The shift toward growth and innovation strategies has changed the priorities of many C-level teams, according to a recent study by Saugatuck Technology. The top business imperatives are:

- Grow sales/revenue
- Reach new customers
- Improve customer service/retention
- Increase market share
- Sell more to existing customers

Influence of HR and Employee Relations

Interestingly, the study also revealed a significant leap in the priority of human resources (HR) and employee relations. While “improve HR and employee relations” is rated as the 10th most important item, it was the largest single mover in terms of position (from 15th in 2006 to 10th in 2007). Burton Group attributes this jump to two primary factors—the need for innovation (which is often linked to improving employee engagement) and concerns over aging workforce trends. An aging workforce can create significant exposure through the loss of critical organizational talent and knowledge as experienced staff retires.

<table>
<thead>
<tr>
<th>Priority</th>
<th>2006</th>
<th>2007</th>
<th>Delta change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales/revenue growth</td>
<td>3</td>
<td>1</td>
<td>+2</td>
</tr>
<tr>
<td>Reach new customers</td>
<td>2</td>
<td>2</td>
<td>none</td>
</tr>
<tr>
<td>Improve customer service/retention</td>
<td>1</td>
<td>3</td>
<td>-2</td>
</tr>
</tbody>
</table>
Table 1: Business Priorities of Senior Executives (Source: Saugatuck Technology and BusinessWeek Research Services C-Team Study [Dec. 2006]. Sample Size: N=443, All C-Level [CEOs, COOs, CFOs, CIOs, and CMOs from Large Companies with Greater Than $1 Billion in Revenue—Worldwide Distribution])

Another influencing factor could be management recognition that the very nature of many existing and future information-centric and knowledge-centric jobs is changing (or will be changing) at a fundamental level. Anticipated skills and competency needs could also cause renewed focus on HR and employee relations, as indicated by a McKinsey Quarterly study. Addressing the social aspects of work often requires that organizations focus on HR and employee relationships.

Figure 8: New Work Models Are More Art Than Science (Source: “Competitive Advantage From Better Interactions,” McKinsey Quarterly, 2006, Number 2)

Multi-Generational Workforce Trends
As important as growth and innovation strategies are to business strategists, so are tactics necessary to address shifting employee demographics and aging workforce trends. The challenges are not new—issues and concerns related to retiring workers and associated loss of experience have been used repeatedly to justify deployment of portal, collaboration, search, and enterprise content management technologies. Such efforts have often been pursued under the guise of knowledge management (KM) projects. A key difference in 2007 is the overwhelming amount of data that makes the risk more expansive and predictable, impacting virtually all private and public sector organizations. Enacting policies and tactics that enhance productivity and performance levels across a multi-generational workforce while alleviating aging workforce pressures has become a strategic imperative for the majority of C-level executives.

Generations at Work

The modern-day workplace is a complex environment that supports multiple age brackets, or generations, according to a report published by The Center on Aging & Work/Workplace Flexibility at Boston College:

- **Traditionalists**: Workers between the ages of 62 and 77
- **Baby Boomers**: Workers between the ages of 43 and 61
- **Generation X**: Workers between the ages of 27 and 42
- **Millenials/Generation Y**: Workers 26 and under

The rapid pace of demographic change over the past decade is such that the Bureau of Labor Statistics expects that greater than half of the U.S. workforce will be over the age of 40 by 2008.


By 2012, the percentage of older workers will increase dramatically, challenging management teams to compile human capital management strategies that deal with growing age-related workforce diversity. Such programs will be far reaching, spanning processes that include recruitment, talent management, succession planning, professional development, salary, and related incentive practices, as well as alumni/retiree relations.
Given the loss in experience and accumulated know-how, business strategists will likely rekindle KM practices, as well as revamp procedures that focus on employee relations, communication methods, leadership programs, and cultural dynamics.

Unfortunately, data in Figure 11 suggests that not all organizations have analyzed the workforce demographics.

Loss of experienced staff can lead to shortages in key competency areas within organizations (e.g., management, critical decision-making, supervisory, knowledge transfer, teaming, and morale-building skills). Efforts to recruit and retain workers with critically needed skills are much more difficult for management to address when workforce analytics are not available that provide insight into demographic trends.

As new workers enter the workplace and older workers prepare to retire, there are tremendous opportunities for knowledge transfer to occur. How well employees build community, share information, and form a variety of personal and professional networks depends on the cultural environment of the organization. Garnering employee participation in programs that management may utilize requires that workers be aware of such programs and feel that the organization is not trying to exploit them. Improving employee engagement occurs at multiple levels (e.g., management, community leaders, and respected peers).
Research suggests that management teams recognize the need to examine broad workplace issues related to salary and benefits, as well as public perceptions and community outreach efforts (e.g., corporate giving and citizenship efforts). These macro-level issues affect employee perception regarding the type of company they work for and the type of culture the company seeks to influence. At the business unit level, organizations are becoming more aware that aging workforce trends impact the success of recruitment and retention efforts. Research indicates that leading organizations are reviewing policies related to professional development and flexible work options as well as relationships between front-line management and workers. Figure 12 also suggests that employees now expect to have a greater role in decisions that affect them and their work activities.

![Figure 12: Organizations Expect a More Participatory Workforce](http://agingandwork.bc.edu/documents/RH04_NationalStudy_03-07_002.pdf)

A well-engaged workforce that participates within a supportive culture has a positive impact on management's ability to establish a workplace environment where community, information sharing, and personal/professional networking can thrive. Figure 13 suggests that this type of atmosphere can be critical, because different generations possess different business-related attributes depending on where they are in their professional career paths.

![Figure 13: Generations Leverage Networks Differently](http://agingandwork.bc.edu/documents/RH04_NationalStudy_03-07_002.pdf)

The idea that networking (personal, professional, and client) is an important means to socialize relationships, build community, and share information is reinforced by a recent survey by SelectMinds. The study found that over three-quarters (77%) of workers ages 20 to 29 and over 60% of older employees (ages 40 to 65) believe that the social aspects of work improve their overall sense of workplace satisfaction.
The survey also identified the importance of networking as a critical aspect of job transition. Forging relationships with colleagues and supervisors was rated as the biggest challenge by 46% of younger respondents (ages 20 to 29). This hurdle is considered higher than learning new job responsibilities or adapting to the company's culture.

Networking also extends beyond job “onboarding” to helping new workers discover information and expertise. The study found that 86% of younger workers are more likely to listen to information and recommendations provided to them by someone they trust.

Other findings reported in the SelectMinds survey include:

• Nearly half (46%) of younger workers (ages 20 to 29) rate the availability of support/networking programs for employees with common interests as a very important factor in their decision to join and/or remain with an employer, compared with 36% of their peers
• Of all the groups surveyed, young workers are the most likely to see professional networks as beneficial to their career development, with 72% of younger workers (ages 20 to 29) citing such networks as very important, compared with 66% of workers ages 30 to 39 and 61% of workers age 40+
• More than three-quarters (78%) of all workers, and 81% of younger workers, feel somewhat or very disconnected from the information flow, politics, and career opportunities across their organization
• More than one in four (28%) of younger workers report leaving a job because they felt disconnected from the organization, compared with 21% of workers ages 30 and above
• Approximately 48% of younger workers say they have switched jobs because of poor relationships with coworkers, compared with 14% of their older colleagues

The Origins of Enterprise 2.0

The spring 2006 edition of MIT Sloan Management Review included an article by Professor Andrew McAfee titled, “Enterprise 2.0: The Dawn of Emergent Collaboration.” In the article, McAfee posited that a particular collection of technologies was noteworthy because the technologies appeared to address many of the shortcomings of traditional knowledge worker tools used for communication, information sharing, and collaboration. These new technologies (e.g., blogs and wikis) are more platform centric and are widely available on the Internet. McAfee coined the term “Enterprise 2.0” (E2.0) to call attention to social software and platforms that organizations might deploy to improve the productivity or performance of their knowledge workers.

McAfee also argues that E2.0 tools make it easier for knowledge workers to author, link, and tag information without imposing preconceived constructs on those users in terms of formal categorization or structure. The notions of “emergence,” freeform use, and network effects are critical underpinnings of the E2.0 paradigm outlined in the MIT Sloan Management Review article. McAfee goes on to state that these new E2.0 tools augment existing communication, information sharing, and collaboration platforms.

The article does not focus only on the technology aspects of E2.0. The need to address cultural dynamics is acknowledged, as is the need to alleviate “walled gardens” created in a political or unilateral manner by management (versus valid barriers erected to support security, identity, compliance, and other business requirements).

A Refinement

In May 2006, McAfee published a modified version of his E2.0 definition. The exact quote is as follows:

*Enterprise 2.0 is the use of emergent social software platforms within companies, or between companies and their partners or customers.*

*Social software enables people to rendezvous, connect or collaborate through computer-mediated communication and to form online communities. (Wikipedia's definition.)*

*Platforms are digital environments in which contributions and interactions are globally visible and persistent*
Emergent means that the software is freeform, and that it contains mechanisms to let the patterns and structure inherent in people's interactions become visible over time.

Freeform means that the software is most or all of the following:

• Optional
• Free of up-front workflow
• Egalitarian, or indifferent to formal organizational identities
• Accepting of many types of data

E2.0 Technology Manifest

When E2.0 is aligned with product categories, the core list includes:

• Blogs
• Search
• Social filtering (illustrated by sites such as Digg)
• Social networking (illustrated by sites such as Facebook)
• Tag and social bookmark systems
• Wikis
• Extensible Markup Language (XML) syndication systems (e.g., Really Simple Syndication [RSS])

No clear criteria exist, however, for determining what products are or are not considered E2.0 or what changes are necessary in products and services in order for them to be compliant with E2.0 concepts.

Wikipedia Confusion

In August 2006, work began on a Wikipedia definition of E2.0. After much debate within the community of contributors and Wikipedia editors, the term “Enterprise 2.0” still does not have its own page per se, but is discussed as part of the terminology associated with “Enterprise social software.” For purposes of this report, the revised definition supplied by McAfee will be used as the authoritative definition. Endless debates on the part of Wikipedia editors that cite other use of the term obfuscate mainstream use and its association with the continued research of McAfee.

Relation to Web 2.0

E2.0 parallels and builds on another term commonly being used in the industry—“Web 2.0.” The original discussion on Web 2.0 is best represented by this September 2005 article by Tim O'Reilly. Four key principles from the Web 2.0 paradigm are important when assessing E2.0:

Web as platform: Over the past decade, a variety of infrastructure and application services have matured. Emergence of various security, directory, and integration services, as well as lightweight programming models (e.g., Representational State Transfer [REST]), have made it less complicated for developers to construct systems rapidly and at a higher level of abstraction. The Web itself can now be thought of as a programmable hypertext platform where pages are no longer static but can be dynamically composed from multiple resources (e.g., content, rich media, scripts, and applications). For additional information, refer to the Collaboration and Content Strategies overview, “Hypertext and Compound/Interactive Document Models: Collaboration and Content Management Implications.”
Richer user experience: More advanced presentation models (often based on Ajax or Adobe Flash), which come closer to user interface capabilities found in traditional desktop applications, provide people with more immersive and interactive content, as well as applications that are more contextually aware. The emergence of mashups represents a more freeform delivery model, where content and application components include interfaces that enable them to be manipulated, co-mingled, and extended in unplanned ways to form a unique iteration of those content and application resources (sometimes involving multiple website, content, and application providers). For more information, refer to the Application Platform Strategies overview, “Web Application Frameworks: Evolving to Support the Interactive Web.”

Data centralization: Websites designed to consolidate, aggregate, and correlate data and metadata (including user-generated data and metadata) enable platforms to continually analyze information and user interaction patterns. The output of this analysis becomes a critical aspect of social applications and the surrounding user experience. Analytics helps platforms improve capabilities involving personalization, recommendations, voting, ratings, popularity statistics, and community actions (e.g., what's been read, what's been commented on, and what's been tagged). These data results can be contextually displayed to users, providing a collective feedback mechanism. For more information, refer to the Collaboration and Content Strategies overview, “Content Analytics: Assessing the Value of Corporate Content.”

Architecture of Participation (AoP): From a Web 2.0 perspective, an AoP requires designers and developers to have an understanding of the cultural dynamics in order to provide technology capabilities to mediate that social interaction. The cultural aspects focus on establishing an environment, or a set of community ethics, that encourages levels of open cooperation. Some cooperation might be explicit (e.g., members helping other members within a community), while other actions might be informal (e.g., members making their tags and bookmarks public). Voluntary contributions in terms of content generation (e.g., blog posts and wiki page edits) and user-defined metadata (e.g., tags and bookmarks) are intrinsic elements to successful AoP efforts. Even if those contributions are made for selfish reasons but shared nonetheless, participation in and of itself adds value. From a technology perspective, user involvement should not include burdensome participation barriers. The system should be designed to enable participants to extend the environment through their own individual actions as well as collectively by the community itself. When combined with other key Web 2.0 principles, network effects are more likely to occur.

A Conceptual Model for Enterprise 2.0

This report examines E2.0 concepts and their implications for organizations (i.e., HR, employee relations, and technology) using the following conceptual model and components to augment the Search, Links, Authoring, Tags, Extensions, and Signals (SLATES) model:

- Persona
- Voice
- Groups
- Tags
- Feeds
- Networks
Conceptually, a persona can have multiple facets, or segmentations, based on permissions and other access/privacy controls. A common baseline may be formed from authoritative information but a persona should have flexibility in terms of how a user wants to reveal certain layers of informal information on top of that baseline, depending on the relationship that user has with a particular community or social network.

For purposes of this report, “Persona” refers to:

- The profile users create to describe themselves (e.g., role, projects, and experience)
- The augmentation of that profile with authoritative enterprise information added to satisfy management requirements (e.g., identity)
- The narrative information that users add to help other people form a particular social perception of them (e.g., hobbies and interests)
- Other underlying resource data aggregated from other systems (e.g., course and professional development information added by learning management and HR systems) that may someday include external enterprise sources.

**Figure 14: A Model for Shared Awareness and Group Engagement (“SAGE”)**
Voice

While many technologists might equate voice with human speech or telephony, the metaphorical context within E2.0 is similar to definitions from dictionary.com and The American Heritage Dictionary: “the person or other agency through which something is expressed or revealed” and “a medium or agency of expression,” respectively. From a technology perspective, this might be made available in the form of blogs or social filtering applications (e.g., Digg, which enables people to vote on topics or content). A Voice example that relies on a blog is the ITProjects Newspage screen shot in Figure 16. This blog provides a platform for multiple people to share notes about project activities. For more information on blogs, refer to the Collaboration and Content Strategies report, “Blogs, Wikis, and Beyond: New Alternatives for Communication and Collaboration.”
Figure 16: Voice Includes Direct User-Generated Communication (Source: Traction Software)

corank (similar to Digg) provides a feedback loop through the “like minded” feature, which identifies people “most like you” based on voting patterns.
Groups

Typically, when strategists talk about groups and their formation, the discussion focuses on the structure teams and communities and the interrelationships between these two types of structures. While these topics are important, it is also critical to understand the social experience and psychology that permeates group formation and how groups can be better leveraged without dependency on formal sanction and reliance on management direction. Enterprises typically consist of multiple groups (large and small) that can overlap with each other and support cultural variations based on the dynamics that bind the groups together in the first place (e.g., goals and interests). A sense of community that is workplace-wide may develop, as well as a sense of community within other groups (e.g., teams) as communities form across structural and relationship boundaries but remain interconnected by various social networks.

Collaborative authoring of content using wikis is one example of how this component could be instantiated while supporting these four elements. The series of screen shots below illustrates how a collection of communities involved in the recovery effort of New Orleans after Hurricane Katrina is using a wiki to communicate, share information, coordinate, and collaborate around various activities. The site imbues an overall sense of community but enables members to create distinct sub-areas within the wiki that have relevance to groups focused on particular aspects or locations of the recovery effort. There are low barriers to participation, there is a great degree of openness concerning who can contribute and edit what content, the materials act as a linking mechanism to face-to-face encounters, and the site is not dependent on the formal, top-down control structures often found in traditional management methods and work processes. While the wiki content is important, it is clear that the real value is found in the community interactions, relationships, and activities around the content.

Figure 17: Voice Includes User-Generated Voting (Source: http://www.readwriteweb.com/archives/corank_relaunches.php)
Figure 18: A Workspace for Bringing People Together (Adapted from: http://thinknola.com/wiki/New_Orleans_Wiki)

An example of where a wiki can be used as a workspace (for the New Orleans recovery) but also as a part of community outreach and community building.
Figure 19: Local Control, Community Value (Adapted from: http://thinknola.com/wiki/Neighborhood_Meetups)
Tags

As user-generated metadata, tags are almost always freeform and are emergent in the sense that they are created and assigned by users to some information object. A user may tag something in an ad hoc or purposeful manner. Tags are also shareable with others, who benefit as the collection of tags increases over time. Users can also tag information sources multiple times using multiple tags. For instance, a user may tag a webpage as “Project ABC” so they can view all pages relevant to those activities whenever needed. Or, a user may tag a page as “Enterprise 2.0” to create a more specific label that categorizes a collection of information that the individual wishes to be associated with a particular term. When a tag is clicked, any information source tagged in that manner by any user is typically displayed. As more people participate in the tagging platform, often implemented via a social bookmark system (refer to the Reference Architecture Technical Position, “Tag and Social Bookmark Systems Within the Enterprise”), network effects occur.

Figure 20: Local Coordination but Global Transparency (Adapted from: http://thinknola.com/wiki/Unified_New_Orleans_Plan)

For more information on the democratization aspects of Wikis, refer to the Collaboration and Content Strategies report, “Wikis in the Enterprise: Democratizing and Directing Collaboration and Content Management.”
As an E2.0 component, Tags have a valuable role. Tags are identified with the person who applied the metadata. Tags are also identified to an information resource. The triad of people, information artifact, and tag creates multiple ways for people to build connections. Participants in the tag and social bookmark system can discover information they might not otherwise have found based on the tags of coworkers. Additionally, tags can function as a type of connector between people who share similar information interests. As the screen shots below illustrate, an employee might transition from clicking on a tag to viewing an information source to then looking at the profile of the person who tagged that item. Over time, those who share similar interests may elect to contact each other and perhaps establish some type of work-related relationship or community of interest.

Figure 21: Communicating with Tags and Bookmarks (Source: Connectbeam)
Figure 22: The Persona Behind the Tags (Source: Connectbeam)

Feeds
The concept of feed as a coupling device to receive transmissions from some type of distribution network is not new. Other industries (e.g., broadcast media) have adopted this concept to deliver information to a large number of receivers used by audiences to “tune in.” Feeds enable users to select and subscribe to channels that winnow the mass volume of information and communication available to them. Add to this concept the notion of “subscriptions” and the component becomes compelling from an E2.0 perspective. The act of subscribing to a feed establishes an inferred association to other people who also subscribe to that feed (establishing a base for subsequent community-building and social networking efforts). By subscribing in an opt-in manner, users receive periodic updates to whatever information they are tracking and want to be notified about, represented by the feed. Feeds are often associated with XML syndication (e.g., RSS). XML feeds are one technology example to instantiate this component (for more information, refer to the Collaboration and Content Strategies overview, “Transforming Communication Channels: RSS Within the Enterprise”).

![Diagram of feed channels and topics](image)

**Figure 23: Community Building via XML Feed Channels and Topics**

But people also leverage a Feed model when they add someone to their instant messaging (IM) buddy list. In essence, they are subscribing to a presence feed where status updates are transmitted by a system agent (or watcher) to the IM/presence platform and that then broadcasts the update to all receivers. A Feeds component does not map one-to-one with XML syndication technology.

Feeds enable users to create their own collection of channels for how they want certain types of information to be communicated to them—a type of self-empowerment that supports many underlying tenets of E2.0. Concerning XML feeds, users can export their subscription lists from XML feed clients into a format called Outline Processor Markup Language (OPML), which can be shared and imported by other users into their own readers.

The screen shot in Figure 24 shows a collection of feeds that are organized into different folders. Each feed is optionally subscribed to with options to view the entire feed item (i.e., post) or display only a summary or headline. Information within the folder can be sorted in a variety of manners. Feeds can be included in a variety of applications (e.g., e-mail, IM, web browsers, and portals).
Networks

Management methods and practices have long discussed aspects of “the informal organization” that cut across formal work structures and reporting hierarchies. While formal structures and formal decision-making processes are critical to how organizations operate, they are augmented by a myriad of social networks that exist and function often without any direct management knowledge, control, or influence. Understanding the value of social networks is critical when addressing strategies related to HR and employee engagement. These networks often provide workers with a range of capabilities and resources that help people with a variety of needs, such as:

- **Filtering**: Who and what is credible
- **Sense-making**: Awareness (e.g., did you know) and synchronization (e.g., what does this mean)
- **Connection**: Information sharing, “who knows who,” or “who knows what”

Networks, in the context of this report, reflect the social structures that connect people based on relationship, activity, or information associations. Networks can be explicit (declared in some manner), inferred (derived indirectly by analysis of various artifacts such as documents, communications, contacts, memberships, and other shared circumstance), or organic. Organic networks are serendipitous in that users elect to be associated with each other for reasons that cannot be intelligently automated.

A Networks component within an E2.0 technology context leverages a profile along with methods of “contactivity” (a term some attribute to Ton Zijlstra in a [blog post](#) following the Reboot 8 conference):

- **Methods of contactivity**: Communication options
• **Methods of participation:** Tools that enable users to contribute, share, and exchange information or collaborate within a community or network

• **Methods of social presence:** Methods that enable users to understand how their profile is represented; relationship permissions and privacy controls

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**Figure 25: Illustrative Flow Within a Social Network Site**

The screen shot in Figure 26 illustrates how a profile page is a key enabling component for implementing a social network site. The profile contains a variety of user-generated and system-generated information. The “human face” is extended by including snippets from recent blog posts and a list of groups that the user is a member of. The system also generated a summary of items that the page visitor has in common with that user.
User Experience Design Goals

Design is a critical E2.0 aspect that is not well formalized. While the definition offered by Professor McAfee mentions some specifics (e.g., emergent, freeform, and platform centric), much of the industry’s discussion focuses far too much on the use of specific products, primarily the following:

- Blogs
- Social network sites
- Tag and social bookmark systems
- Wikis
- XML feeds
Without a cohesive set of design criteria for E2.0 applications, decision makers are exposed to an ever-expanding list of technologies that are being associated with the E2.0 meme. Indeed, virtually any new product or service delivered to the market over the past couple of years is now being labeled as “Enterprise 2.0” or “Web 2.0” (e.g., IM, presence, office productivity tools, Voice over Internet Protocol [VoIP], telepresence systems, video, and mobile technologies). Business and IT strategists are justifiably confused when attempting to distinguish tools that support the concepts behind E2.0 in conjunction with the organizational implications in terms of HR and employee relations. The market has not reached a point where a common set of criteria exists that maturity model strategists can reference to determine if they are “E2.0 compliant” (although Burton Group offers guidelines on social software design in the “Social Software and Emergence” section of this report). Much of the technology associated with E2.0 falls into the category of social software. In the Collaboration and Content Strategies overview, “Trends in Social Software,” Burton Group offers insight on the design criteria that strategists should consider when designing applications that are socially oriented.
Conclusion

The term “Enterprise 2.0” (E2.0) describes a collection of organizational and information technology (IT) constructs that enable more flexible work models, knowledge sharing, and community building. E2.0 is not something totally new—rather, it represents the evolution and maturation of best practices for collaboration and knowledge management (KM). The meme is useful, though, to help reinvigorate business and IT focus on these strategic topics. A “rebirth” in terms of rethinking fundamentals, understanding past success/failures, and examining evolving cultural situations can profoundly alter past assumptions regarding collaboration and KM efforts—leading to novel approaches in light of today's organizational challenges.
Notes


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**Emphasis:** Real-time collaboration (presence, IM, web conferencing) and its intersection with unified communications, XML Syndication (RSS, Atom, OPML) and social software (blogs, tags, social bookmarks, social networking). Organizational strategies related to improving collaboration.

**Background:** Over 25 years of experience in the IT industry. Research agenda focused on real-time collaboration, XML syndication, community-building and social networking. Over ten years of experience as an IT analyst advising Global 2000 organizations on best practices related to collaboration and knowledge management. Held a variety of positions at Aetna (enterprise technology services, application architecture, emerging technology, product management, application development) prior to becoming an IT analyst.

**Primary Distinctions:** Frequent speaker at industry events and often quoted by media sources. Recognized expert in the field of collaboration having published hundreds of articles related to collaboration, social computing, learning and knowledge management. Avid blogger: [http://mikeg.typepad.com](http://mikeg.typepad.com).