

Exploration of Community (or "Social") Functions, Definitions, & Components in the Context of a Very Large Company

This exploration was by a small team within The Boeing Company about the factors we might need to consider when creating "social networking" (in this context read "professional") tools within the company. Our company has:

- *170,000 employees*
- *In 48 U.S. states and 70 countries*
- *Customers in 145 countries*
- *6,000 Suppliers in more than 100 countries*
- *Research, design and technology development centers, and programs in multiple countries*
- *Manufacturing, services and technology partnerships with companies around the world*
- *Rigorous security, export control and records retention demands*

Our company is actively exploring the potential for 'social' tools within the enterprise, with goals such as increasing collaboration, sharing of information, knowledge capture and transfer, and ease of finding expertise. These efforts are well underway for the internal Boeing population. We anticipate such possibilities will eventually expand to include our extended enterprise (customers, partners, suppliers, retirees, public).

We did not finish nor polish this content; some topics are more thoroughly described than others. We do not suggest this is the optimal way to organize it, nor that all of these topics are necessarily 'social'. I merely hope to give visibility to the complexity of such considerations within a very large company. – Ann Bassetti

Identity

Identity organization, representation and management is fundamental to any enterprise solution environment and providing a consistent, uniform and comprehensive identity implementation is critical to the success of a community strategy as it evolves to engage other enterprise solutions and services. The identity context in the community strategy describes the representation of community members and their roles, affiliations, groups, responsibilities, attributes, etc. and seeks to provide a transparent and uniform experience as community members traverse the fabric of the corporate community landscape.

It is anticipated that there will be many identity representations for individuals, groups, applications, etc. that engage communities at the contributor, member, owner/manager or other participant level. Provisioning, registration, identification, verification and management of a diverse identity collection will be a primary challenge in the enterprise community strategy and will require engagement of other enterprise services.

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Notes and questions:

- A community is not considered the primary provider in the identity processes. What is the community role in the enterprise identity management processes?
- Is there some secondary identity management process in the community strategy?
- How does identity manifest in the community context, what constitutes identity, how is it applied?
- What types of identity are applicable to the community context?
- What roles will identities need and use in a community and when will these roles be applied?
- What personal and professional attributes will be available to identities?
- How when and where do affinities get described? Are there existing affinity declarations (distribution lists, etc.)? Are there implied or implicit affinities (organization, business unit, etc.)?
- How, when and where do identities get provisioned and how does the community context engage the enterprise identity infrastructure?
- What repositories are available for identity profile attributes? Are more required?

In a community, one manages their own personal identity and how one can be identified as a member of a community (through distribution lists, etc). Personalization components like profile picture, resume, HR job title, directory information, group membership(s). Groups can have identities as well (such as group distribution lists, logos, templates, virtual team rooms, handshakes, slogans, purpose, definition, other things that establish cohesion within the group such as common history, common stories, common goals.)

Other components of the community concept are based upon what's established in the identity information.

- **Types**
 - **Fundamental Identity**
Every community participant must possess a fundamental identity which is issued by the corporate Identity Authority. The fundamental identity is irrefutable, traceable, verifiable and forms the trunk of the "identity DNA" for a community participant.
 - **Acquired Identity**
Acquired identities are pseudo- identities which can be attached to the identity tree of a community participant. Acquired identities are issued by the corporate Identity Authority and should be traceable through the identity DNA to a fundamental identity.
 - **Delegated Identity**
Delegated identities are pseudo-impersonation identities which are used in service operations to provide a mechanism for a user to assume the delegated authority of

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another identity. Delegation is a controlled process and must be established and managed by authorized persons. In the community context a delegated identity might be authorized to assume a role for the community moderator, asset owner or other elevated privilege.

- **Group Identity**
Group identities describe a collection of individuals (or other groups) that establish an affinity based on attributes such as organizational unit, business unit, subject matter interest, academic affiliation, professional status, skills, hobbies, interests, etc.
 - **Community Identity**
Communities will need an identity that provides association with a profile, mission/charter, owner, content repository etc. Community identities can also be used in credentialed intra-community interactions or interactions with other services.
 - **Identity owner**
Every identity must have an owner responsible as a focal point for identity maintenance and compliance operations.
 - **Identity user**
Identity users are individuals or groups that have been granted documented permissions by the identity owner to engage in operations using the identity.
 - **Application Identity**
Application identities are used by system level consumer functions to facilitate programmatic operations.
 - **Service Identity**
Service identities represent system level producer services and functions.
 - **Device Identity**
- **Roles (Identify Role(s))**
Roles are assigned to community users, groups or other identities and convey a set of permissible operations and responsibilities. Responsibility, Accountability Authority (RAA) should be considered.
 - **Individual**
 - **Owner/manager**
The community owner/manager role is assigned to the asset owner of the community or his/her delegate. The owner role provides responsibility for all community operations including compliance with applicable policies. The owner/manager role would also be provided the capability to remedy inappropriate behavior by community participants.
 - **Moderator**
The moderator role provides the ability for user identities in the community to engage in a workflow style approval operation for content generated in the community. The moderator role would review and

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approve content pending community publication and either accept or reject the content. The moderator role would also be provided the capability to remedy inappropriate behavior by community participants.

- **Contributor**

The contributor role is the most common role in the community and is assigned to every community participant that requires the capability to contribute content to the community repository.

- **Reader**

The reader role is a "read-only" role that constrains user identities to the ability to view community content but not contribute or engage in commentary.

- **Anonymous**

The anonymous role provides a read-only capability to user identities without requiring identification or verification. The anonymous role must be controlled and maybe dis-allowed.

- **Group**

- **Application**

- **Device**

- **Profile**

Profiles describe a collection of attributes that associated with an identity and provide a level of customization to the identity owner. Profile attributes are stored in a repository and some attributes are pre-populated from the authoritative corporate identity service (e.g., org #, boss' name, job code, cube #, etc.) while other attributes (e.g., nickname, skills, interests, photo, expertise, etc.) provide the identity with a measure of self-directed individual personalization.

- **Individual Attributes**

- **Identification**

Identification attributes such as name, e-mail, org, location, phone, etc. are synchronized with information from the corporate identity service.

Identity attributes can be changed or updated using appropriate processes from the authoritative services.

- **Personalization**

Personalization attributes provide the identity an ability to add self-created and maintained information such as nicknames, biography, skills, interests, photos, academic affiliation, etc. which add personal richness to the identity.

- **Professional**

Professional attributes provide the identity an ability to describe professional affiliations, projects, processes, etc. that add professional richness to the identity.

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- **Group Attributes**
 - **Personalization/Profile**
 - **Define Expertise/Skills**
 - **Repository**
 - **Interoperability**
 - **APIs**
- **Operations**
 - **Management**
 - **Provisioning**
 - **Assurance: Verification/Validation**
 - **Revocation**
- **Personally Identifiable Information (PII)**
- **Repositories/Services**
 - **Active Directory**
 - **Corporate Electronic Directory**
 - **Local**
 - **NT/Domain**
 - **Web Single Sign On (WSSO) system**
 - **Secure badge, Personal Cert**
 - ...

Social-Professional Networking

The social-professional networking features in the enterprise community strategy describe the ability to find 'like' people, expertise, skills, knowledge and the ability to make connections with people or groups that you share something with (affinity). Examples of these shared identity variables might be hobbies, college, work group, professional interest, areas of expertise, research interests, certifications, desired skills, etc. The social-professional networking features would also describe the ability to ask questions within the system, generate discussion, and share things with others.

Social-professional networking features could include:

1. **Social/network analysis:** The ability to find intersections and find relationships based upon network connections. This would also include the ability to analyze discussions to identify expertise based upon real interactions. If a given individual is consistently answering questions on a certain topic, the system would be able to identify that individual's expertise in that area.
2. **Wisdom of the crowd:** The ability to use input from the crowd to glean new perspectives. Several examples include: Delicious (social bookmarking website-<http://www.delicious.com/>), Wikipedia (online encyclopedia that can be edited by

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- anyone- http://en.wikipedia.org/wiki/Main_Page), multi-voting, futures markets, rating of posts (e.g., "Likes", or being able to see how many 'views' a video has had), ...
3. **Discover people, expertise, skills:** The ability to search for people, a certain expertise, or a given skill.
 4. **Establish professional/personal network:** The ability to connect or "friend" colleagues. Need both symmetrical (2-way) connecting and asymmetrical (1-way) following.
 5. **View relationships:** The ability to view relationships in the system that are:
 1. Between individuals (e.g., see who is "connected" to whom in a social / professional network)
 2. Between organizations (e.g., see an org chart)
 3. Between individuals and groups (e.g., see who is in which groups)
 4. Would be great to see which groups relate to each other
 6. **Analyze/visualize relationships and networks:** Via social network analysis tools
 7. **Use crowd-sourcing techniques:** To develop content or ideas
 8. **Conduct conversations (discussions/chat):**
 1. within your network
 2. within a group
 3. with others that you have discovered via social / professional network tool(s) (e.g., you ask a question, many people respond, a discussion thread gets going; perhaps you decide to conduct a telephone call on the subject of the discussion thread)
 9. **Create groups:** Sub-communities; could be a Community of Practice, a Center of Excellence, factory shop floor group, sponsored communities, special interest communities,
 1. ability to share information only to your group, or with the entire larger community
 10. **Bulletin board:** The ability to share information across the community that is of interest, such as social events, lunch and learns, new guidelines, etc.

Communities

What is the reason for existence of the community? What are the community goals & objectives (may overlap with group identity, above). How the community functions and how the members function within it. What are the rules of order, the community norms (e.g., how is the leader chosen (if there is a leader)? voting? attendance?). Mechanics of communities; how do you find them? What separates a community from an association? What are the variables that contribute to a sense of community rather than a random group of people?

- List communities
- Create a new community
- Find communities

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- Search for communities based on an attribute (e.g., keyword, organizational alignment, membership, metrics based - most recent, most active)
- See tag cloud of words commonly used in postings from a community? (gives a quick impression of what that community is about)
- Join / un-join communities
- Manage the communities to which you belong
- Rate communities
- Close a community (What about preserving any content that has been created? Distribution lists? ... anything that was created within the community)
- Contribute to a community
 - Ask a question, share information, participate in discussion
- ... something about how communities are used to follow processes. .more or less formal...

Knowledge Management

Definitions: **Knowledge** has to do with expertise and information in peoples' heads (tacit information) and content is more information that is explicit (textbook, document, things that are repeatable). **Content** is knowledge that people that find without needing a person's information. There is a spectrum that goes data, information, knowledge, wisdom. **Data** is sets of raw numbers, information is organizing and grouping those numbers, knowledge is understanding the meaning of the numbers, and **wisdom** is understanding the value of what you just learned.

- **Search Knowledge Base**
- **Share Knowledge (Contribute)**
- **Knowledge Mapping (Topical)**
- **Learning/Training**
- **Accumulate references** (e.g., Delicious (shared bookmarks); wikis)
 - enables many to contribute
 - makes visible the collected 'wisdom of the crowd' (e.g., a site bookmarked by 500 people is likely more useful than a site bookmarked by only 1 person; voting 'with your feet')
 - may enable actual voting or rating or ranking
- ...

Content Management

- **Metadata Management**
 - **Tagging**
 - **Folksonomy/Taxonomy**
 - **Media Management**
 - **Semantic**
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Global Attributes

Global attributes describe a collection of common features, functions and/or operational community requirements which are uniform across all community object types whether they are content objects, identity objects, community parameter objects, etc. Examples: regulations, governance, making sure the information is relevant, up-to-date, usable (lifecycle), accessible regardless of disability or language, accessible via mobile devices; security; ...

Community global attributes must be aligned with enterprise requirements for content repositories and interactions. Global attributes should also align with industry standard content practices.

Questions:

- How do communities which may be *ad-hoc* or loosely coupled demonstrate and/or document compliance with corporate information protection and computing security compliance?
- How will communities utilize micro-content publishing which is viewed as critical to the penetration of social content interaction?
- How will information protection compliance be implemented where communities cross international or corporate boundaries?
- How will communities ensure that their live content, discussions, etc. remains relevant and timely?
- For communities that are more *ad-hoc* or loosely coupled, how will they determine traceability to a consistent responsible asset owner?
- Community interactions are expected to be profuse, diverse, timely, sometimes *ad-hoc*, etc. How can the corporate community landscape correlate and synthesize all of these interactions into real business intelligence?
- How will communities surface the social content experience to drive business intelligence? What capabilities, standards, protocols, tools, etc. will be required?

- **Quality Assurance**
 - **Lifecycle**

Lifecycle management describes functionality which is aligned with corporate policies for content management, identity management, records retention, etc. Lifecycle management should be an integral component of all aspects of communities and provisioned using automated processes which are uniform, systematic and transparent.
 - **Community**

Community lifecycle describes processes that address communities which have become inactive, been abandoned or have otherwise become stagnant or no longer relevant.

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- **Content**

Content lifecycle describes processes which address content objects in the community repository which have past their useful life, become inaccurate or irrelevant or have no longer been accessed by the community population. Content lifecycle should be aligned with appropriate corporate policies for records retention.
- **Identity**

Identity lifecycle describes processes which address community identities which are no longer used or have become inactive. It would appear that identity management processes would be aligned with existing enterprise access authorization services and Human Resources processes.
- **Relevance**

Relevance of communities and content repositories describes attributes of objects that relate to age, accuracy, appropriateness, rating, etc. Relevance management processes for content and other community objects will ensure the communities stay up to date, with fresh information that tracks with the evolution of the community.
- **Accuracy**

Accuracy of content objects provided in the community experience must be verified, maintained and managed by the community population or moderators. Accuracy expectations for information provided in the community experience should be articulated in the community conduct guidelines.
- **Availability**

Collaborative environments in the enterprise have become critical to business processes no matter how informal they appear or were originally intended. It will be necessary to provide availability of community experiences and manage the expectations for geographically diverse community populations.
- **Moderation**

There will be requirements for stricter control and management of content that is surfaced in the community experience. Moderation describes processes that establish an approval workflow for aspects of the community and provides a measure of control over the community interaction.
- **Governance**
 - **Information Protection**

All appropriate information protection policies must be implemented, enforced and documented for all community objects. It would appear that Access Control Policies (ACPs) would be required for all communities or content repositories documenting traceability of policy compliance to the community content repository asset owners.
 - **Personally Identifiable Information (PII)**

Identity profile information and other related identity parameters and objects must

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be considered Personally Identifiable Information (PII) and evaluated for special handling per applicable corporate policies for PII.

- **Access Control**

Access controls are expected to be available to provide capabilities for open or private communities or communities which provide access to sensitive content. Access controls must be related to the Identity function of the community strategy and provide compliance with applicable Computing Security policies.
 - **Enhanced Controls**

It is anticipated that there exists a need for communities and related content repositories which contain or provide access to information requiring enhanced controls. This will drive the need for documented ACPs for communities and content repositories.
 - **Export Control**

As communities begin to grow and engage identities beyond traditional international boundaries there will be a strong requirement to document compliance with applicable Export Control requirements.
 - **Community Conduct**

Each community should provide documented expectations for the conduct of its participants. This conduct expectation may derive from established corporate policies and should be accessible for easy review.

 - **Charter**

Communities should provide easily accessible documentation describing their mission, objectives and references to overall corporate policies and business unit practices.
 - **Practices**

Communities should provide accessible documentation describing the expected practices and behaviors of their participant population.
 - **Policies**

Communities will need to identify, and communicate to their participants, applicable information protection and computing security policies. Communities may also require community-level policies which would be documented and agreed by the community population.
 - **Responsibilities**

Communities should provide accessible documentation describing the expected responsibilities of their participant population.
 - **Asset Owner**

Communities will need to identify some individual or group of individuals as the responsible sponsor or owner of the community. The asset owner will be responsible for all compliance verification processes regarding their communities.
 - **Content Classification** (including aggregated content)

The appropriate classification level of content in the community repository must be maintained throughout the lifecycle of the content object. It will be important
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to identify and maintain classification levels as content becomes reused, re-purposed, aggregated or assembled into other representations.

- **Metrics**

Robust data and event driven metrics will be fundamental to measuring and demonstrating the value and effectiveness of communities and the community experience with respect to decision making processes.

- **Metrics Hierarchy**

- **Community**

Community level metrics should include activity, population, threads, discussions, community dynamics (population evolution), etc.

- **Identity**

Identity level metrics should include population (overall), last access, community memberships, last contribution, followers, affinity circle, etc.

- **Content**

Content level metrics should include last modification date/time, creation date/time, community affiliation, last user, last access (view), etc.

- **Social Analytics**

Data-driven analysis of discussions, events, trends, etc. in the social community experience will drive into the business process value decision stream. Graphical, modular analytic data representation capabilities will be available to the business process owner for rendering in dashboard/mash-up.

- **Activity Stream**

Activity streams are not generally considered metrics but there will be some need to derive event-driven activity at both the community and identity level into presentation layer representations and other reporting scenarios.

- **Ranking**

Ranking should be considered as a special representation of data and event-driven metrics and will be used in decision processes for value mapping, member recruiting, searching, etc.

- **Reporting**

The consumer-level representation of data and event-driven metrics will be critical to their usability and effectiveness.

- **Affiliation**

Metrics will also drive supporting data and event-driven reporting into the decision processes for service management, identity management, lifecycle management, usability and accessibility.

- **Usage Modality**

- **Accessibility**

Communities must meet appropriate ADA and W3C accessibility standards.

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- **Usability**

Communities must address the usability of their content experiences with respect to things such as coloration, navigation, branding, etc.
- **Internationalization**

Communities are expected to extend beyond traditional international boundaries and it is anticipated that the need for multi-language support will become greater as communities emerge and evolve to include participant populations where English is not the native language. It is also anticipated that communities will emerge where English is not used at all and there may be a need for translation services.
- **Delivery Channels**
 - **Mobile, Small Form Factor**

Mobile access is critical to the success of collaborative communities. Communities should provide content and experience representations which are uniform across all expected usage modes and are transparently delivered to the different usage modes of their community population.
 - **Rich Client**

Rich client delivery would seek to off-load some of the texture processing of the social content experience to the desktop application environment and provide abilities to engage other user controlled content sources.
 - **Browser-based**

The browser-based web content delivery channel would be the default point on user interaction in the social content experience.
 - **Teleconference, Video, Telephony**

The real-time delivery channel seeks to provide a social content community experience via telepresence, web presence and telephone. This traditional community delivery channel poses some challenges for capturing content and discussions in the community repository.
- **Application Level**
 - **Content data model standards and attributes**

It is anticipated that a common, standard data specification in the ONE Community strategy will provide the greatest opportunity for interoperability. Content and other community objects should define a set of standard schemas and object attributes such that application level operations can be developed.
 - **Application Programming Interfaces (APIs)**

APIs are essential to the interoperability across the community landscape and should engage common standard methods and solutions.
 - **Mobile Apps**

It is anticipated that communities will rely more on developing and engaging mobile or small-form-factor applications for delivery of the social content experience.

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- **Micro-content publishing**
Short-message micro-content delivery is critical to providing community participants the ability to quickly and easily share information and ideas and more rapidly engage individuals or communities in social content interaction across the community landscape.
- **RSS**
The interchange of social content will drive the effectiveness of communities to engage in a collective social content experience while driving business intelligence. RSS is fundamentally essential in the interchange of content in the social content experience.
- **Rich Media**
Video, audio and other rich content will continue be important in the community strategy and enriching the social content experience. Communities will need to provision capabilities and resources to address rich media content.
- **Presence**
Presence awareness for communities is critical to the usability and penetration of the social content experience.
- **Transient, ad-hoc, virtual communities**
- **Real-Time**
Data, content and communications arrival order and timing

- **Search: Ask, Find, Share**
 - **Search**
 - **Notification**
 - **Content, Semantic**
 - **Relevance**
 - **Affinity/Correlation**
As communities emerge and their memberships begin to provide information and engage in discussions there will be a need to correlate content and topical discussions horizontally across the community landscape. Presently this type of topical correlation uses the primitive track-back mechanism which emerged in the blog space but is now common in other environments.
 - **Social Search**
 - **Result Sentiment (Rate, Vote, Share)**
 - **Secure Search**