Measuring Community Success: One Size Does Not Fit All

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ABSTRACT
We look at self-forming communities on one company's externally-facing business networking tool to better understand factors contributing to the success of a community. We propose that there is no single measure of success of a community; success of different kinds of communities depends on a variety of factors, including the perspective of the stakeholders and the type of community established.

Author Keywords
Communities, social software, social computing, web 2.0, social media, collaboration, collaborative environments

ACM Classification Keywords
H.1.2 [Models and Principles]: User/Machine Systems—Human factors, Human information processing, Software psychology; H.5.3 [Information Interfaces and Presentation (e.g., HCI)]: Group and Organization Interfaces—Asynchronous interaction, Collaborative computing, Computer-supported cooperative work, evaluation/methodology, web-based interaction

INTRODUCTION
In this position paper, we discuss an evaluation of self-forming communities – assembled for a variety of purposes – on one company's externally-facing business networking tool. Based on this evaluation, we take a closer look at what makes a community successful. We define community, loosely, as a self-forming group of people with a shared goal, connection, or interest. In [10], Wenger et al. classify communities as either natural (e.g., a grassroots effort or a network) or intentional (e.g., a task-specific team or a community of practice), We have discovered that there are different kinds of communities forming, there are a variety of different factors that might make a community successful, and that measurements of success are dependent on the type of community established – among other factors. In other words, success means something different within different contexts.

There is a considerable amount of published literature on communities and success factors. Most of the research and empirical studies focus on communities of practice, asserting that a successful community must have a common goal and a facilitator [4, 5, 7, 8, 9]. However, most studies show that there is no single quantitative measurement that can be used to determine a community's success [6]. Although many of the typical quantitative measurements can provide useful information on the activity of a community, none of these is necessarily a true measurement of success [3]. Success also depends highly on perspective – the perspective of the community owners, facilitators (if any), and community members, as well as other stakeholders in the community. Communities form for many reasons, but even communities established for similar purposes may have different ways of evaluating their own success [6].

BACKGROUND AND MOTIVATING PROBLEM
The MITRE Corporation is a not-for-profit organization with expertise in systems engineering, information technology, operational concepts, and enterprise modernization. In addition to managing several Federally Funded Research and Development Centers, MITRE supports its own independent technology research and application development for solving sponsors' near-term and future problems. MITRE has approximately seven thousand scientists, engineers and support specialists distributed across many locations and working on hundreds of different projects in numerous domains.

For solving problems, staff is expected to seek out and rely on the expertise and knowledge of technical and domain experts distributed across the company. As a result, the corporation places a high value on sharing knowledge across individuals, projects, and business units. Information has historically been shared through the use of ListServs, technical exchange meetings, internal wikis, and Microsoft Sharepoint.

For communicating and collaborating with our *external* partners, MITRE has traditionally relied on email, telephone, and face-to-face meetings. MITRE has an external Sharepoint site for secure collaboration with partners, but the strict authentication requirements and the lack of lightweight functionality make it difficult for infrequent and untrained people to use this tool.

CASE STUDY

Through MITRE's research program, a team developed and launched Handshake, a business networking prototype based on Elgg, an open source platform [2]. The Handshake prototype provides a MITRE-owned space for connecting, collaborating, and networking with both internal and external partners in a trusted environment as well as a research platform for exploring the value of social media in the enterprise.

Handshake is open to all MITRE employees. Members can connect with each other, create a profile, and establish groups for any purpose. MITRE staff must explicitly invite external participants to join Handshake, but these external partners can, in turn, establish connections with other Handshake members and join groups.

Groups may be open to all members of Handshake, limited to MITRE employees, or restricted to a named subset of members. Groups with moderated access require approval for members to join; in open groups, members can self join. Available group tools include a discussion forum, a file repository, wiki-like "pages," blogs, photo albums, and a message board. Each piece of content within a group inherits the corresponding group permission but may also be restricted further (e.g., MITRE members of the group).

A group owner may appoint one or more co-owners to have group administration rights. Owners and co-owners can add or remove members from the group, change the group access controls, edit group metadata (e.g., tags, related URLs, description, title), or delete any inappropriate content.

Awareness of activity on Handshake is provided through activity streams and customizable email alerts. Email alerts provide profile information on the creator of the content, the content itself, and quick links into Handshake.

At the time of the study, Handshake had been available for just over one year. There were approximately 3300 registered members, including 800 external participants, and 300 established groups. MITRE use of Handshake was voluntary, as was the creation of each of the groups.

APPROACH

For this study, we looked at 243 groups that had been created within a one-year period. Most of the groups were still in the growth stage [1] and had not yet reached maturity. We did not look at newly created groups because they were too new to have established regular usage patterns. We also omitted test groups and hidden groups that had no members.

Most of the groups examined were moderated and restricted to group members. On average, MITRE employees represented 87% of group membership although 12% of those groups had less than 50% MITRE employees as members with a few of them almost exclusively made up of external partners. Some groups had up to 6 co-owners, but the median was just one per group. The median size of each group was 11, with 977 members belonging to the largest group (open to All MITRE).

We created a short survey that was distributed to 222 owners and co-owners of the 243 groups. We asked 6 questions about the purpose/goal/objective of the group, how they would categorize their group, whether there was a designated facilitator, how they rated the success of their group on a 5-point Likert scale, what factors they considered in evaluating the success, and what other tools they used to support this group. We gave the participants 3 days to respond to the survey. At the end of the second day, we sent a reminder to those who had not yet responded.

We had 81 participants respond with their input on 128 groups (108 unique groups). For those groups with multiple respondents, we combined their responses and resolved minor conflicts by averaging scores and making judgment calls on group category. Some survey recipients chose not to participant but indicated to us that their groups had not been successful.

The categories used in the survey (see Table 1) had been pre-created by classifying each group based on its description. These categories map closely to the corporate categories used for the internal Sharepoint site although, for this survey, we added Community of Interest and Affiliation, types of communities not found on the Sharepoint site.

In addition to survey results, we collected data from the Handshake database and performed some basic calculations (see Table 2). Examining the group activity by month over time, we then classified the activity as consistent (moderated to high), consistent (low), and little to no activity.

INITIAL RESULTS AND DISCUSSION

Over half the groups established on Handshake were either Projects (both internal and cross-organizational) or Communities of Practice (COP). See Figure 1.

Some types of groups were more likely to be rated as successful than other types of groups (Figure 2). One possible explanation for these results is that success is dependent on the clarity of the community's mission or goal. Projects and Conferences have clear goals and objectives whereas Programs, Organizations, and Affiliations typically do not have stated tasks or objectives. The goals of COPs or COIs may be fuzzier than the goals of Projects but more clear than that of Organizations.

Fewer groups had designated facilitators, but having a facilitator did not appear to be a factor of community success (see Figure 3).

The overall level of group activity appears to predict the community's success (Figure 4). Groups with a consistent level of moderate to high activity were more likely to be rated as successful. This finding also holds true across types of content in groups; successful communities were engaged

in more discussions, contributed more files, and created more pages than unsuccessful ones (Figure 5). Indeed, success criteria enumerated by survey participants typically included generation of artifacts, amount of shared content, quality of conversations, and ongoing activity.

Category	Definition
Community of Practice (COP)	A group of people who share a common domain, field, or profession
Community of Interest (COI)	A group of people who share a common interest or passion, not directly related to their work
Project	A team of individuals collaborating on a funded project with a MITRE project number, or a work team for an assigned group project
Program	People comprising an area of work that encompasses different projects
Council	A task or advisory-level group of people chartered at the corporate, center, or enterprise-level, usually cross-organizational
Organization	A MITRE organizational unit; e.g., a department or division
Affiliation	A group of people who share a common past or present association with an organization such as a university, company, or professional association
Conference / TEM	A group of people attending a specific event (may be a recurring event)
Other	(Survey participant as asked to define)

Table 1 Group Categories

However, the type of activity a community engaged in differed across group category (Figure 6). Comparing the four most frequently occurring categories: Projects, COPs, COIs, and Organizations, we see that

- Projects were more likely to create/edit pages. This is consistent with the observation that project groups work collaboratively around an artifact.
- COPs and Projects were equally likely to upload files and much more likely to do so than COIs or Organizations.
- COIs and COPs were equally likely to post discussion topics and much more likely to do so than Projects or Organizations. However, the depth of discussions in COIs is greater than in COPs.

From a separate interview study, we learned that lurking (not actively contributing to group content) may actually be an active behavior, and that lurkers may highly value a community because of what they learn. Larger communities have more lurkers than smaller ones but have a higher number of contributions per member. Unfortunately, we could not adequately measure the activity of lurkers; while we have access to logins and page views, we have no way of knowing if group members were reading and forwarding the Handshake-generated email alerts. Were they engaged? Were they reading but not contributing? Were they creating conversations around group content outside the group space?

Metrics & Calculations	Notes
Group membership model	e.g., open/moderated
Group permissions	e.g., All Handshake, All MITRE, Group only, My Connections
Group creation date / # days in existence	
# owners/co-owners	
# members	This final number was pulled only at the time of the study. We were unable to ascertain member join date or whether people had joined and then left.
% MITRE members	
# & type of group content	e.g., discussion topics, blog posts, files, pages, albums
# comments on each type of content	
Median/max thread depth	
% contributors	Those who contributed original content and may also have made comments
% commenters	Those who commented but did not contribute original content
% lurkers	Those who did not participate in any group activity
Group activity by month	Based on amount of content & comments

Table 2 Handshake Data Used in Study

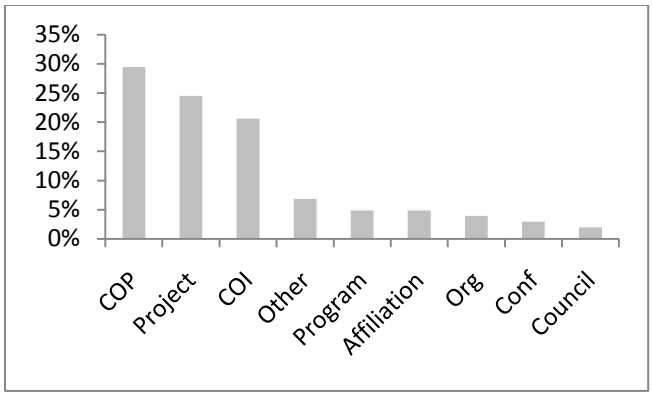

Figure 1 Percentage of Handshake Groups by Category

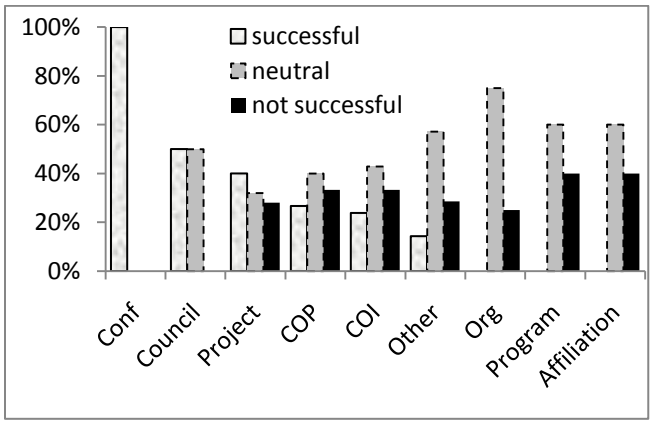

Figure 2 Success Ratings Based on Group Category. Bars show the percentage of groups within each category that were rated as successful, neutral, or not successful.

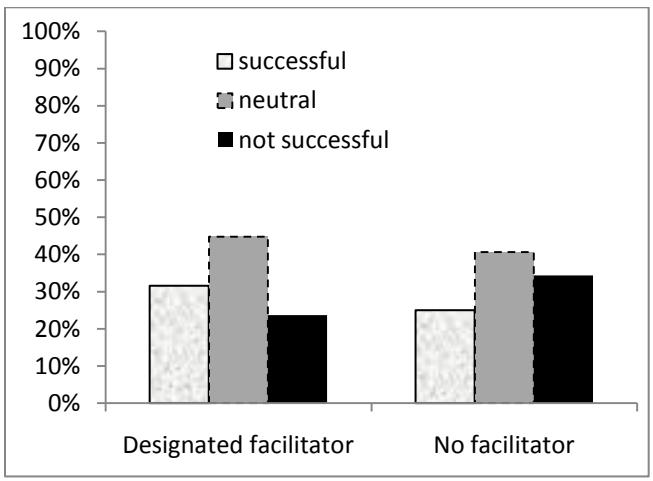

Figure 3 Success Ratings Based on Having Designated Facilitator. Bars show the percentage of facilitated or non-facilitated groups that were rated as successful, neutral, or non-successful.

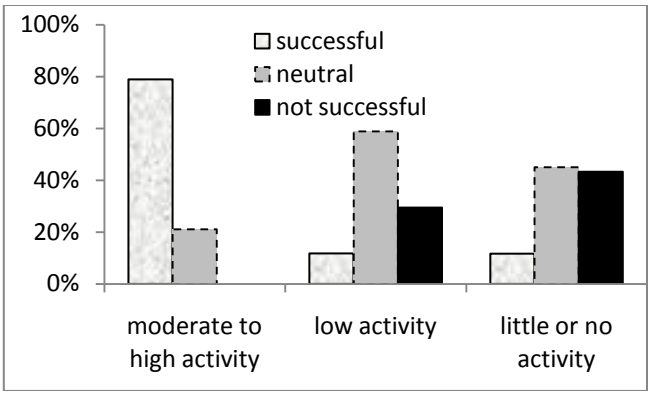

Figure 4 Success Ratings Based on Level of Activity. For each of 3 levels of activity, bars show the percentage of groups that were rated as successful, neutral, or not successful.

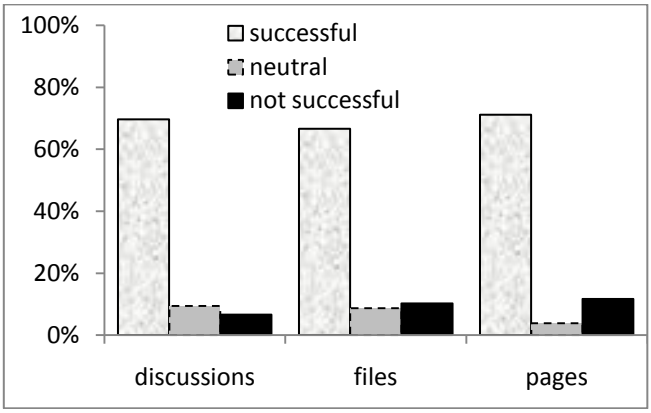

Figure 5 Success Ratings Based on Content Type. Bars show the percentage of contributed content by type for groups rated successful, neutral, or not successful.

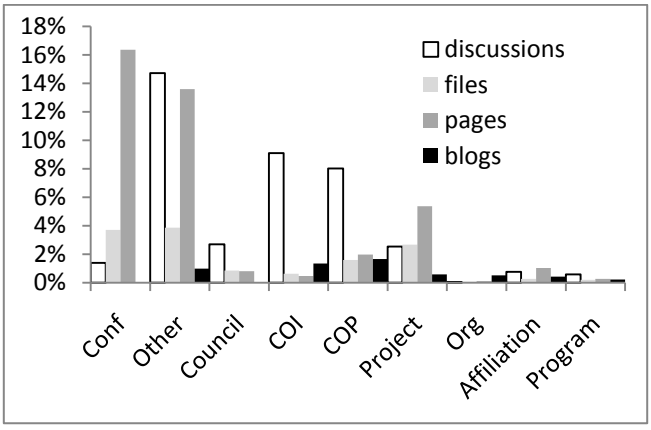

Figure 6 Content Type by Group Category. This graph shows average distributions of content type across group categories.

CONCLUSIONS

The initial results of our study have proved interesting, and we would like to continue observing the activity of Handshake groups over a longer period of time. We have seen that not all measurements of success apply to each kind of community; group category and type of content are distinguishing factors. The size of a community is not necessarily a measure of success. Our data also indicates that having a group facilitator does not always ensure success, and not all groups require a facilitator to achieve success.

Finally, we would like to explore lurker behavior in a follow-on study. We believe that the percentage of contributing members of a community is not in itself a measure of success; lurkers may be contributing to the success of a community although this is more difficult to measure.

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