Building communities of practice seems like a smart way to encourage collaboration across organizational lines. But, what happens when you need to show proof that the communities are working and are worth the investment? The framework presented in this article should help. Richard McDermott, community of practice expert, explains how to make sense of a chain of community activities, outcomes and value in the language of the business.

MEASURING THE IMPACT OF COMMUNITIES

How to draw meaning from measures of communities of practice

By Richard McDermott, McDermott Consulting

Corbet Consulting, a large information-systems consulting company, learned the hard way how important it is to assess value. When the company began its KM effort, the president, Mr. Corbet, strongly endorsed it. He felt that communities of practice should be at the heart of the company's KM effort, so he appointed a KM support group, funded collaborative software and personally invited talented consultants to assume community leadership. As the communities developed, the support team considered measuring their value, but decided against it. The communities were very successful. With strong management support and many demands on the support team's time, there seemed little reason to devote scarce resources to developing measures.

Two years later, Mr. Corbet handed daily operations to his CFO who was less willing to accept the value of the communities on faith. He insisted on documenting their value, as he did for most things. As the support team began collecting information on community value, they found that sharing ideas and insights had become so common that it was hard for people to attribute it specifically to the communities. Even though the support team was convinced that KM had a dramatic impact on the organization, they weren't able to demonstrate it.

As communities become integrated into organizations, they usually need to demonstrate measurable value. Community development, like other KM efforts, often starts with a gut-level conviction in its value. But to become more than an initiative, KM efforts need to operate within the language of the business.

A framework for assessing impact

Because so many factors influence business performance, it's hard to identify the impact of communities on business metrics such as costs or product-development cycle time.The framework in Figure 1, page 27, makes the connection in a way that's rigorous enough to be useful and convincing to most managers. This section outlines the key areas: activities, outcomes, value and business results.

Activities: People often begin assessing the value of communities by measuring activities, i.e. Web site hits, number of responses to a request for help or attndance at meetings. These activities are easy to measure, can be helpful in understanding the level of community activity and give some indication of its health. In one community, questions posted on the community's Web site received an average of 4.5 responses within the first 48 hours – a good indication that the community members were responsive to each other. But, these measures do little to demonstrate the contribution of the community to its members or the organization. They need to fit with some other elements to be meaningful.

Outcomes: Community activities typically result in improvements to the following three areas[1]:

1. *Personal Knowledge*: When community members share ideas or help each other, they increase the personal knowledge of other community members.
2. *Strength of Relationships:* When people participate in a community, they get to know who knows what, and often develop trusting and comfortable relationships because of their interactions.
3. *Access to Information*: Communities frequently commission members to create tools, guidelines, procedures or databases and increase members' access to the documents and information already created by other members.

The most common way to assess these outcomes is to interview or survey members about how the community has contributed to their personal knowledge, their connections to others and the accessibility of information. Comparing before and after pictures of these outputs for a business unit or organization is a good way to assess the immediate effect of a community.

Value: But increases in these three elements still don't tell you what value communities have created for the organization. Communities typically provide value on three different levels: individual, team/business unit and organization. Individual community members are the most immediate beneficiaries of communities. Knowing whom to contact or using community documents often saves community members time. As one community member said, "I might have gotten this information in the end, but it would have taken a lot longer. The community saved me three months of work." Members also realize less tangible benefits. As companies shift personnel between locations, reorganize divisions or place technical people on cross-functional teams, communities can provide a point of stability in a changing world, increasing employees' satisfaction. One community member noted that however his role in the organization changes, he knows he will stay connected to the same set of peers, regardless of location, sharing ideas, thinking together and feeling a common bond.

Teams or business units are the most direct organizational beneficiaries of communities. Teams frequently save cycle time when community members learn about new tools and ideas. A geologist in Shell, for example, realized that if he could speed up his analysis by several months, he could use a drilling rig that was already in the area. With a little help from his community, he saved deployment costs of several million. By developing a training schedule that minimally interfered with operations, a safety community helped improve facility uptime by 1 percent, saving US $150,000 per day. Sometimes communities provide more subtle value to teams and business units. One global company which operates with many local partnerships reported that community members could approach partners with more confidence. As one engineer said, "Yesterday, we were trying to convince our partner to use a new technology. We used lots of material and documentation from the community. Now we have the entire weight of the organization behind us and that makes a big difference."

The greatest value of communities is often less tangible and more important than cost savings – communities build organizational capability. Montgomery Watson Harza, a global water, environment and infrastructure engineering firm, sees its ability to manage large design-build projects as a distinctive capability. Communities in key areas such as project management and design-build are stewards of these capabilities. The design-build community, for example, collaboratively develops bids, creates guidelines and supports smaller offices in executing design-build projects.

Value is difficult to measure directly because

KEYPOINTS

- To get a full picture of the impact of communities of practice, look at activity, outcome and value measurements.
- Communities help individuals, teams or business units and build organizational capability.
- Communities must meet business objectives to be taken seriously.
- Interviewing community members can draw out the causal relationships that help determine the relationships between community activities and business results.
- When calculating the ROI of a community, overestimate the costs and underestimate the value to make the result believable to management.
- Collect and tell good stories that prove value. Stories help illustrate the linkages between quantitative and qualitative measures of success.

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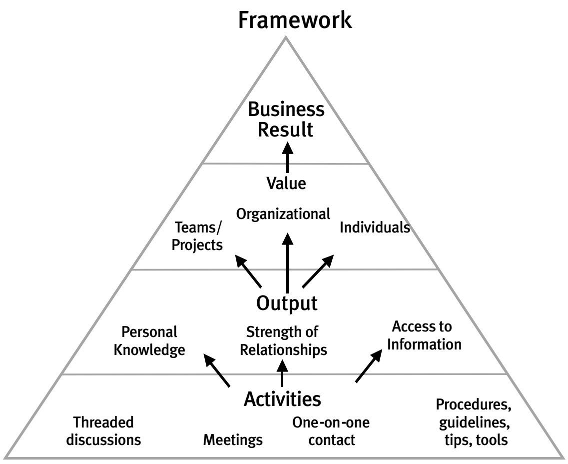
Figure 1: Community of practice measurement framework



value is always for someone and varies for different stakeholders. Regular (six month or annual) interviews or surveys with community members can identify the community's value for individual members and their work teams. Surveys of business units and senior staff can identify how strong each unit is in a particular capability. BP, for example, uses such a survey to identify gaps between current and desired performance on several dimensions of business unit capability. By comparing survey results over time, the company can determine the impact of a community on building capabilities within specific business units.

Business results: Of course, the ultimate test of community value is the degree to which communities contribute to overall business performance, such as reducing operating costs, shortening product development time or increasing market penetration. Most companies already have metrics for business performance, so the question is not how to collect these metrics, but how to link community performance to them.

Making sense of measures

Many things exist in this chain that you can measure. Assessing how communities contribute to an organization is as much sense-making as data collection, understanding how community activities lead to outcomes that are valuable to individuals or business units – and ultimately how they contribute to important business results. This makes the logic of community contribution visible. By focusing on quantitative elements of this chain, we can draw conclusions in the language of the business. To make sense of a community's contribution:

1. identify stakeholder needs;
2. develop a measurement strategy;
3. collect data;
4. calculate the value or ROI of the community;
5. construct and tell stories about the community's value.

Identify stakeholder needs: Different stakeholders are interested in different aspects of the community. Senior managers need to know the contribution of the community to long-term and short-term business performance. Community leaders need to know the value of individual community activities so they can be good stewards, changing the activities that are less useful. Team leaders need to know the return for the time their staff spends participating. Potential members need to know what commitment and value they can expect from the community. To understand a community's real contribution, it's helpful to think through who you're collecting information for and what they'll do with it.

Develop a measurement strategy: Stakeholder needs define the measurement strategy. Measuring community contribution doesn't need to be a comprehensive evaluation. It does, however, need to tell the stakeholders what they need to know. Typically it involves collecting information on community activities and outcomes and interviewing community members on the value they received. Sometimes it also includes conducting a survey on capabilities. Communities often need to think through how they'll communicate their assessment and what they expect as a result. This should also be part of the planning since it helps determine what information to collect.

Collect data: Since community members don't normally calculate the value of an idea or even remember where they got it, interviews are often the only way to surface it. See sidebox, left, for interview questions that will get you started. The interviews jog members' memories by asking about problems they encountered, hot topics the community discussed or meetings that occurred. Discussing what they would have done without the community's input often helps them identify the value of these activities. To jog community members' memories, the interviewer needs to know about community events and the topics discussed. Community leaders are ideally suited for this role, since they're typically part of the initiating issue discussions as well as the follow-up on them.

Getting people to put a numeric value on the outcomes of their participation is often difficult. A well engineer at first said he didn't really know the value of some less expensive test equipment he learned about from the community. But when asked about how many times he would be able to use the

Interview Questions

Community assessment interviews should provoke discussion. Questions often include probing follow-ups and memory jogs. These can get you started:

- What has the overall value of the community been to you and your team?
- Remember when the community discussed "topic x," what specific knowledge, information and/or data did you use?
- What was the value of that for you as an individual? Can you express that in numeric terms, such as time saved?
- Can you estimate the value of that knowledge to your business unit in cost savings, reduced cycle time, increased quality of decision-making or reduced risk?
- What percentage of that value came directly from the community? What are the chances you would have learned it without the community?
- How certain are you of the above estimate?
- Who else used this information?

equipment over the next year, he was able to estimate the total cost savings. Because it's often difficult for community members to quantify savings, interviews typically involve a great deal of probing. Matching up a community leader with a skilled interviewer can surface these subtleties. Once members have been interviewed a few times, they're usually better able to make the estimates needed to calculate value. The interviews raise their awareness so they can make sense of the connection between community activities and value.

Calculate value: Senior managers and team leaders sometimes want a direct calculation of the community's return on investment (ROI). By underestimating the value and overestimating the costs, we're able to make this a conservative calculation. When the people we interview estimate the numeric value, like time or cost saved, we ask how much of those savings they can attribute directly to their participation in the community. This is an estimate of the chances that they would have found out about it anyway. Then we ask how certain they are about that number, asking for a percentage. When reporting these results, we multiply the savings by the percentage attributable to the community. Then we multiply that result by their percentage of certainty:

Estimated savings x percent attributable to the community x the degree of certainty = Reported savings

When calculating the costs of the community we take all direct costs and combine them with an estimate of average indirect costs, such as the time the leader and core members spend working on community projects. We are generous in our cost estimates, though less rigorous in our calculations. This approach gives a more realistic estimate of the value of the community independent of other channels of information flow. See sidebox, above, for an example.

Even when we're only calculating value, rather than ROI, building in a factor to make the estimate conservative helps. Although it relies on the individual's judgment in estimating the community's value, it makes the estimate conservative enough to create a plausible story. Because communities often achieve great cost savings, a few conservative examples are usually enough to meet stakeholder needs.

Construct and tell the stories: Making conservative estimates is only part of creating a believable demonstration of community value. Telling the story makes the logic of the connections between activities, outcomes, value and business results visible. A good story begins with a specific person or group, describes the predicament they face, how they used the community, the outcome and the value of that knowledge. It embodies the meaning of the measures: how a community contributes to individuals and the organization. Once the story is constructed, following the strategy for communicating it completes the process.

Calculating return on investment in one community at Shell

Oil exploration often involves extrapolating from sketchy data and comparing exploration sites to known ones (analogues). Analogues help geoscientists decide if enough reserves exist on a site to make developing it worthwhile. For example, one site contained layers of oil-bearing sand that were less than an inch think. A Shell exploration team had to decide if thin sand beds could extend over a large enough area for the oil in them to be efficiently pumped out. This usually involves drilling and testing a number of exploratory wells. So, the team asked Shell's Turbodude community, a group of geoscientists from different disciplines, for help. By comparing this site to others, the community helped the team hone their analysis of where to drill more accurately, resulting in fewer exploratory wells. Community members estimated that the discussions of analogues enabled them to drill and test three fewer wells a year, saving $20m of drilling and $20m of testing costs for each well – $120m annually. It's possible they would have found other ways to access these alternate interpretations, but the leader estimated that the community could claim 25% of the savings and was 80% sure of their estimate. So $125*.80*.25 meant that the community saved $24m annually. Since it cost $300-$400k annually to run the community, this represented an annual return of 40 times the investment. This wasn't the only value, but was enough to satisfy management's need to know the community was worth the investment.

Measurement and change

Today communities of practice are often seen as different from the rest of the corporation – more organic, more democratic and a forebearer of the organization to come. But it's unlikely they will be able to change organizations if they remain marginal initiatives. To become agents of organizational change, they will need to become a respected part of organizations and – in the language of the business – demonstrate the value this new form of organization brings.

Note:

1. In the literature on intellectual capital, these three elements are referred to respectively as human, social and structural capital. Together with customer capital, they form the knowledge capital of the firm.

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