COLLABORATION CONTINUUM

Project Overview:

The purpose of this project is to look in depth at knowledge collaboration within organizations and its role in driving productivity and innovation. The project will look at how multiple different forms of knowledge collaboration facilitate innovation and productivity while highlighting the salient cultural and technological factors that enable vs. impede interpersonal collaboration networks. We are focused on analyzing social networking and other Enterprise 2.0 software (e.g. wikis, blogs, forums, etc…) as the primary technological enabler. These E2.0 systems create complex socio-technical environments which are potentially game-changing in their impact on organizational knowledge sharing and collaboration.
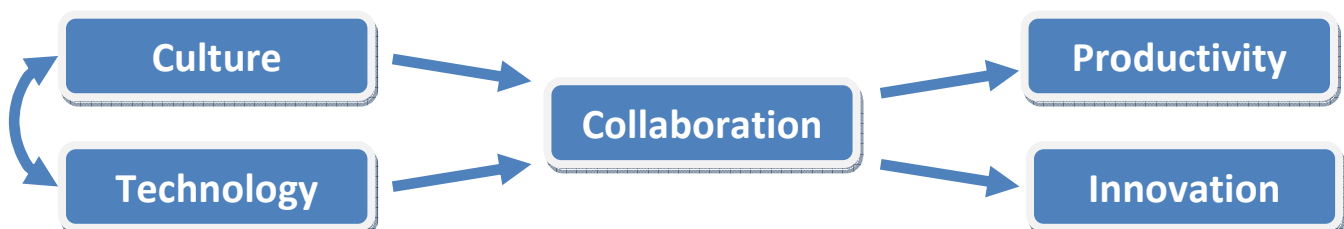
Our research team is currently offering a **free analysis** to an organization, division, or department to examine the above questions. Using a confidential survey of employees and managers, we will work with an organization to help it understand its informal knowledge environment. The project currently has a growing group of participating companies and federal laboratories as well as a team of subject matter experts. Participation is open to any IRI member company and we are looking for companies that have little or no experience with E2.0 technologies as well as those with mature E2.0 systems. Participating companies will receive a customized analysis of their collaboration, knowledge sharing, and innovation environment as well as a comparison to other companies in the study.

Primary Research Question:

How can we enhance collaboration within organizations so that productivity and innovation are improved?

Subordinate Research Questions:

- What forms of knowledge collaboration lead to organizational productivity and innovation?
- Technology: What Enterprise 2.0 features or functions increase collaboration? How (by what mechanisms) does it achieve this increase?
- Culture: What organizational and individual factors enable vs. impede collaboration?
- Socio-Technical: What organizational and individual factors increase vs. are barriers to the adoption of Enterprise 2.0 software?

Culture → Technology → Collaboration → Productivity / Innovation

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Background:

Information, knowledge, and expertise are often seen as an organization's most important asset, but most companies still struggle in this area, wasting tens of millions of dollars as employees recreate information they can't find or search for information that isn't there.

A common solution has been to buy expensive knowledge management systems, but it turns out that, in practice, it is actually informal collaboration and knowledge sharing that is paramount. Thus, it is critical that organizations understand their informal environment and how it affects employees' search for and access to knowledge.

Recently, Web 2.0 technologies—e.g. social networking, wikis, blogs, electronic forums, etc.—have entered the corporate knowledge environment. However, as yet, there is little empirical evidence that these technologies offer advantages to employees when implemented within organizations (a.k.a. Enterprise 2.0 or E2.0).

It's easy to talk about collaboration and assume that collaboration leads to organizational productivity and innovativeness, but why? How does this process work?

We can invest millions of dollars and even more significant time and effort in implementing the latest Enterprise 2.0 systems, but how does this improve collaboration (if at all)?

Unless we better understand the ways in which collaboration creates organizational outcomes like innovation and productivity and appreciate the impact of various drivers or blockages to collaboration networks, we cannot understand how to best work towards improving collaboration via cultural and technological change.

Answering these types of questions are some of the goals of this project.
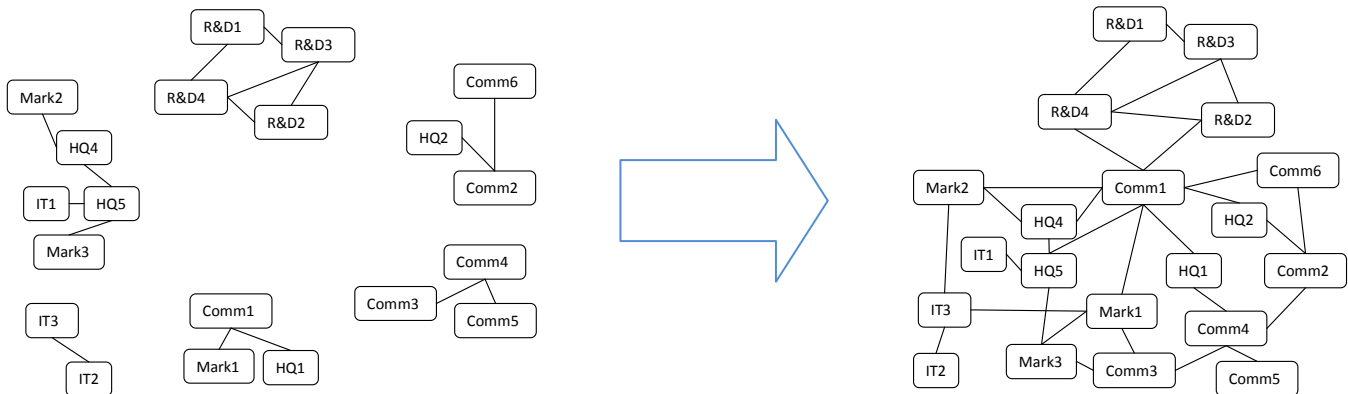
Benefits/Deliverables to Companies:

Examples of what companies can expect to receive as participants in this project:

- A social network diagram depicting the knowledge flows between the departments involved in the study and other groups in the organization.

- A dissection of the types of knowledge collaboration/flows that have the greatest impact on productivity and innovation in your organization.

- An analysis of salient drivers/motivators as well as problems/blockages in the organization's knowledge networks.

  - Interpersonal Level
  - Interaction Level
  - Individual Level
  - Group Level
  - Organization Level

Note: Specific deliverables depend on information available and will be discussed on a case-by-case basis

The Study:

Organizational Requirements

For an organization to participate in this study they must anticipate surveying 1 or more groups, departments, or divisions with a minimum of 50 to 200 subjects. The survey takes around 20 minutes for subjects to complete. If possible, up to three shorter (5 to 10 minute) follow-up surveys could be administered once per week after the initial survey. If administered, these follow-up surveys provide a more complete and rich view of the organization's knowledge networks, while allowing for a greater number of factors to be measured. Companies are only expected to provide reimbursement for researchers travel or other expenses directly related to the survey and follow-up with their organization.

Confidentiality Statement

For all studies planned for this project both companies and employees are assured of absolute confidentiality. Neither company names nor any additional identifying information will ever be revealed and results will be aggregated such that individual employee data is confidential.

Survey Format

This survey will be administered via the web with a unique but anonymous login for each employee delivered to them by email. We ask that a high level person in the organization send out the initial request to all selected respondents in order to help assure a high response rate. Reminders will automatically be sent to non-respondents at set points in time after the initial email is sent. The survey starts by asking for a list of people with whom the respondent has collaborated in the last 2 days. It then asks the respondent to identify the types of interactions that they had with each individual listed. Next, the survey randomly chooses two of these interactions and asks some in-depth questions about the knowledge exchange that took place. A key feature of this survey design is that it is grounded in a specific behavioral activity. These types of surveys provide results that much more accurately reflect the reality of organizational activity—not the way people think things are (or wish that they were). Finally, the survey asks some questions about the respondent's perception of knowledge sharing in general as well as about their manager's and the organization's support for knowledge sharing.

Search & Transfer Factors

The study is designed such that factors affecting both search and transfer can be assessed. Search is inherently a choice model of behavior, and as such, assessing factors at this level of analysis requires data about all potential interaction partners. Thus, in order to assess search barriers, we will require information such as organizational charts, employee expertise data, employee demographic data, etc... The study can be completed without this data but only knowledge transfer factors (not search factors) will be analyzed.

Enterprise 2.0 Usage Data

The study is designed such that it can be administered to organizations that have implemented E2.0 systems as well as those that have not. The initial questions about the interaction will ask about the way in which the interaction occurred (i.e. occurred in person, on the phone, via email, in a forums, etc...). Furthermore, the last subset of items that asks about the employees' general perceptions of knowledge sharing will also ask about their level of participation / usage of E2.0 systems. However, a much greater understanding may be achieved by extracting user's actual usage of E2.0 systems. If companies desire to examine this, IT support to extract usage patterns for all respondents would be required. Relationships between E2.0 usage and factors gathered in the survey could then be assessed.

Outcome Measures

Although the above survey will measure interaction outcomes, it is important to try to find stronger evidence linking collaboration to real organizational outcomes. As such we would recommend a very short additional survey of supervisors. This survey, which would only take 5 to 10 minutes for each manager, asks them to rate all their direct reports on a few dimensions such as productivity and innovation. Alternatively, if we are able to get access to other HR data such as performance reviews, we may be able to assess employee level outcomes without this additional survey. Finally, if we have at least two responding subgroups within the organization we can assess differences between the knowledge networks in the groups and relate this to group level performance data if available.

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IRI Project Plan:

Phase 1 of this project is intended to provide a cross-sectional analysis of multiple groups within multiple companies and is anticipated to be completed by the first half of 2010.

Phase 2 will follow-up with a subset of participating companies that have implemented E2.0 systems or wide-spread cultural changes intended to enhance collaborations. For this group the longitudinal effects of these changes will be assessed and this phase is anticipated to run through the end of 2010 and into 2011. Companies can participate in only Phase 1 or also in Phase 2.

IRI Project Deliverables:

A Research Report on the *Principles for Successful Collaboration*
- Highlighting cultural, interpersonal, and technological barriers/enablers to collaboration
- Identify manageable steps to becoming more collaborative (progressing along the continuum)
- An addendum/special report on generational (age related) barriers/enablers to collaboration

An *Enterprise 2.0 Guidebook*
- Dictionary of E2.0 terminology
- Reference Library of Enterprise 2.0 articles highlighting current business value / future direction
  - A catalogue/pick-list of Enterprise 2.0 technologies
  - Organized by user experienced functionality / organizational effects
  - Mini case studies/reviews from IRI member companies

Project Co-Chairs:

Leonard Huskey
US Army Research Laboratory

Peter Oelschlaeger
Sandia National Laboratories

Natalie Schoch
Kellogg Company

Subject Matter Experts:

Robert C. McNamee (Ph.D. ABD, Dept. of Management and Global Business, Rutgers University) worked for 10 years in the knowledge management industry. His research draws on a number of different literatures (e.g. knowledge search-transfer, innovation adoption, advice acceptance, knowledge sharing via repositories, and organizational creativity) in order to explore the differences & similarities between recipient initiated (Pull) and source initiated (push) forms of knowledge exchange. Methodologically, he balances an ability to qualitatively explore a phenomenon via interviews with a very strong quantitative skill.

Dr. Daniel Z. Levin (Associate Professor, Dept. of Management and Global Business, Rutgers University) has studied social networks and knowledge sharing in organizations for 15 years. His primary focus is on studying the types of professional relationships most likely to provide engineers and scientists with useful and efficient knowledge, advice, and assistance on their projects. Prior to entering academia, he worked for a general management consulting firm.

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