



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.

Research Questions:

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

- 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



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 culture/climate and how it affects employees' knowledge exchange and collaboration.

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).

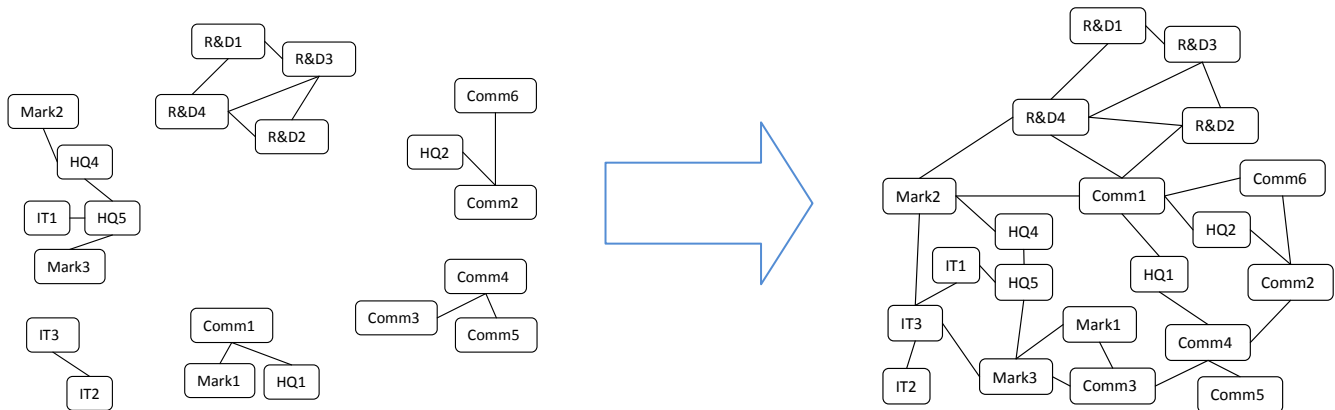
It's easy to talk about collaboration and assume that collaboration leads to organizational productivity and innovativeness, but why? How does this process work?

We can invest millions of dollars and even more significant time and effort in implementing the latest Enterprise 2.0 systems, but when and 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.

**An example of E2.0 bridging disconnected silos to create small worlds of efficient knowledge sharing



What can companies expect as project participants?

All Organizations

- Assess organizational culture and individual motivations for creativity, collaboration, and knowledge sharing
- Establish the relationship between types of knowledge collaboration and employee or group innovation and productivity

Orgs without E2.0 Systems

- Assess problem areas where E2.0 systems may offer value
- Anticipate cultural problems that will hinder adoption and E2.0 impact
- Establish pre-E2.0 baseline networks and collaboration behavior
- Pre + post implementation survey offer evidence of E2.0 effects (e.g. connecting separate groups**)

Orgs with Established E2.0 Systems

- Examine cultural and individual factors driving E2.0 adoption & use
- Examine usefulness of E2.0 systems in enabling factors critical to healthy knowledge exchange environments (e.g., increase awareness, trust, engagement, shared understanding)
- Identify gaps in current E2.0 system functionality

The Study:

Organizational Requirements

For an organization to participate in this study they must anticipate surveying one or more groups, departments, or divisions with a minimum of 100 to 200 subjects. The survey takes 15 to 30 minutes for subjects to complete (depending on what data is gathered for analysis).

Participation in the study is free. Companies are only expected to provide reimbursement for travel or other expenses directly related to the survey, case studies, or other follow-up with their organization.

Confidentiality Statement

For all studies in 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 obscured.

Survey Format

This survey will be administered via the web with a unique but anonymous login delivered to each employee by email. We ask that a high level person in the organization send out an 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.

All surveys start out by asking a series of questions that assess the organization's culture for creativity and knowledge sharing. This is followed with measures of individual motivation and personality characteristics relevant to this study.

Next, surveys gather information about knowledge sharing across organizational boundaries. There are a few options for this section including a simple survey of frequencies of interactions across boundaries as well as two social network question variants: a group level and an individual level. Social network variants allow network diagrams to be generated but take longer to respond to.

Following this a series of questions asks about a randomly selected specific exchange interaction. This section is optional and provides a deeper understanding regarding the type of knowledge being exchanged, the engagement and effort being put into interactions, and the perceived value of various types of knowledge and interactions with various people.

A key feature of this section of the survey 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 a few demographic and control questions. These are very important for organizations that wish to assess generational barriers to adoption or fair access to technologies across constituent groups.

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. Thus its analysis requires individual level social network

data be linked to organizational data (e.g. org. charts, employee expertise data, demographic data, etc...)

Enterprise 2.0 Usage Data

The study can be administered to organizations that have mature E2.0 systems, those with recent or limited E2.0 implementations, and those without any E2.0 systems at all.

For companies that have some level of E2.0 systems in place two optional sets of questions are available. The first of these looks at employee's E2.0 use for reading, posting, and collaborative behavior as well as Web2.0 use as a control. This data allows individual and organizational factors that drive adoption of E2.0 to be analyzed.

The second optional set of questions looks at how useful existing E2.0 systems are in enabling collaboration via various important mechanisms. This helps us understand how E2.0 enables collaboration. In addition, it helps identify gaps or weaknesses in organizations' existing E2.0 systems.

Outcome Measures

Although the above survey will measure interaction outcomes, it is important to find evidence linking collaboration to real organizational outcomes. In order to accomplish this, we recommend a short (5 to 10 minute) survey of supervisors in order to gather ratings of employee innovation and productivity.

Alternatively, we could utilize HR performance data if available. Finally, if we have multiple subgroups in our sample we can utilize group level performance data if available.

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 mid 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 nearly 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 source and recipient motivations as well as the organizational value of solicited and unsolicited forms of knowledge exchange interactions. 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.



This project is an officially sanctioned Industrial Research Institute (IRI) Research on Research (ROR) working group.
<http://www.iriweb.org/>

RUTGERS

Rutgers Business School
Newark and New Brunswick

Support for this project is provided by the
Technology Management Research Center (TMRC)
at Rutgers Business School <http://tmrc.rutgers.edu/>