

# Why Do We ReachOut?

## Functions of a Semi-persistent Peer Support Tool

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### ABSTRACT

Collaboration plays a vital role in today's new business environment. Knowledge that resides within people's heads has become an invaluable resource. Many formal tools, such as e-mail or teamrooms, have been introduced to support formal collaboration and have been studied extensively. However, support for informal communication is still in its infancy. Much work has been done to analyze the functions that informal communication plays in the workplace. Recently, several studies have evaluated the roles that instant messaging (IM) plays in similar settings. Research shows that in the workplace, IM is used primarily for work-related purposes and accelerates the completion of important business tasks. Clearly, new tools that combine both formal and informal interaction can bring organizations tremendous rewards. ReachOut is a tool for semi-persistent collaboration and peer support developed by the Collaboration Technologies Group at the IBM Haifa Research Lab. This paper studies the role ReachOut plays in the workplace. We analyzed the collaboration activity of the community of IBM Haifa Labs employees who used ReachOut for a period of two months. As a result, we summarize the important functions played by tools that bridge between formal and informal communication in a workplace-based community.

### Categories and Subject Descriptors

H.5.3 [Group and Organization Interfaces]: Computer-supported cooperative work, Evaluation/methodology, Synchronous interaction, Asynchronous interaction.

### General Terms

Measurement, Human Factors, Experimentation

### Keywords

Workplace collaboration, peer support, informal communication

## 1. INTRODUCTION

It is well known that collaboration is of vital importance in the workplace [24, 44]. There are many sources of information available nowadays. However, people themselves remain a popular and

powerful resource, as has been true throughout history. That is one of the reasons so much work has been dedicated to expert locator systems [1, 2] and recommender systems [41]. Very often, we do not know how to find a needed piece of information, or where to look for it. Thus it is very important to be able to turn to your peers when looking for information or the solution to a problem [11, 43].

Many business processes also require collaboration between workers. This has led to the introduction of many tools that support team work. These include e-mail [25, 45], teamrooms [36], collaborative workspaces [6], and more. The main goal of all those tools is to support semi-formal communication within teams. They use asynchronous and persistent mechanisms for collaboration. The information is stored and can be retrieved for future reference, but it also creates information overload [21].

Another very important method of collaborating is informal communication. Informal communication has many functions in the workplace and has been studied extensively [24, 44]. Thus, it is not surprising that instant messaging (IM), the technology that supports informal collaboration, is becoming more and more accepted in the corporate environment [7]. Research has shown that IM is used primarily for work-related purposes and as such, is a corporate productivity tool [19, 30]. Many big software companies, including IBM [37], Microsoft [29], AOL [4], and Yahoo [42] have a strong presence in or intend to enter the world of corporate IM.

However, the dynamic nature of today's work environment requires that new features be introduced in tools supporting communication. One of these features is support for the continuity between semi-formal and informal interaction. ReachOut, a tool for peer support and community building developed at the IBM Haifa Research Lab [33, 38], is an example of such a tool. ReachOut is based on semi-persistent collaboration, or "blended synchrony," as first described by other tools [14]. This tool supports the sharing of ideas and fosters peer support in a very informal, chat-like environment. ReachOut takes the best from the world of asynchronous tools that support semi-formal communication, and synchronous tools that support informal communication. Thus it would be interesting to see how such a tool is used in the workplace, based on our previous knowledge of the use of other tools.

The rest of this paper is organized as follows: First, we summarize the reported functions and uses of semi-formal collaboration and conventional collaboration tools. Next, we briefly describe the ReachOut tool and the workplace community where it was deployed. We later demonstrate the functions and roles ReachOut plays in the workplace environment, and give examples from real ReachOut discussions. Finally, we summarize and give some directions for future work.

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GROUP '03, November 9–12, 2003, Sanibel Island, Florida, USA.  
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## 2. RELATED WORK

### 2.1 Functions of Informal Communication

To understand the use of computer-mediated collaboration systems, it is necessary to go back and examine the use of informal communication in the workplace. Kraut et al. [24] define several functions and characteristics of informal communication. Informal communication is unscheduled, interactive, and frequent. Informal language is used during informal communication. Coordination to help the team deal with uncertain events, support for a group's social functions (e.g., socializing or supporting individual members' needs) and execution of work related tasks or efficient problem solving, are just some of the functions of informal communication. Informal interactions are often dyadic and intermittent [44], so that agreement on an issue is often achieved by meeting on several occasions during the day.

Physical proximity has also been identified as one of the factors that support informal communication [23, 44]. People can schedule unplanned meetings and discussions just by seeing each other in the corridor [24]. The limitation of dispersed teams can be overcome by using electronic tools. However, as Kiesler and Sproull point out [39], the lack of visual cues makes this type of communication less attractive. The community we examined is collocated. People sit in the same building, but on different floors. They are in reasonably close physical proximity to one another, but they may not see each other very often.

Isaacs et al. [20] identify four types of groups involved in informal communication. Project workgroups work on the same project, have the same goal, and work on the same material. Cross-functional groups work on some multi-mission tasks (often workflow-based) and collaborate around documents. External groups usually use a formal means of communication, since frequently they do not have a social base for informal collaboration. Finally peer groups, which are of special interest to us, are engaged in supporting communication, namely giving and receiving advice, and reporting news and events. As the ReachOut tool is focused on peer support, we argue that communication patterns of peer groups will predict the usage of ReachOut.

To summarize, informal communication plays an important role in group coordination, socializing, building groups, looking for advice or solutions, and reporting news and events. It is unscheduled, opportunistic, frequent, interactive, and intermittent.

### 2.2 Functions of Supporting Technology

Having examined the roles and functions of informal communication in the workplace, we proceed to identify the roles and functions of the technology that supports semi-formal and informal communication in the workplace.

Probably the most successful communication tool deployed in companies is e-mail [22]. The main characteristics of e-mail are its semi-formal language [28], asynchronous nature, and relative speed [31]. In the context of media richness theory [13], e-mail is considered a lean medium [3], as compared to face-to-face communication (which is the richest medium), due to the lack of visual cues [39]. In that sense, all text-based media are alike, though use of emoticons can introduce some replacement for visual cues [5].

The main functions of e-mail, as reported in the literature, are acceleration of decision-making and team coordination [12, 34],

contacting colleagues and friends, and being informed of events in the organization [25]. Electronic mail can also lead to information overload [18, 45] that is also familiar in other persistent environments [21]. Filtering incoming messages can offer some solutions to the problem [26].

Another special issue described in the literature is managerial use of e-mail [25, 27, 28, 45]. Managers use e-mail to avoid interruptions [28], stay informed about events in the company [25] and accelerate employees' contribution to problem solving [8]. However, managers are more likely to be overloaded with e-mail [45] and thus e-mail efficiency is decreased.

IM resides on the other side of the spectrum. IM is becoming widely adopted in the workplace [17]. It is lightweight, brief, synchronous, and informal [32]. In the workplace, IM is mainly used for four functions [10, 16, 19, 30]: quick questions and clarifications, coordination and scheduling work tasks, organizing social meetings, and keeping in touch with colleagues, friends, and family. Some of these functions are very similar to the informal communication functions in the organization; consequently, IM is a very good tool to support such communication in the workplace. For example, a function that schedules impromptu meetings with people who you meet in the corridor can now expand to include remote colleagues whose presence can be detected using the IM tool [19].

IM's power also contains its major drawback. Being brief and informal, instant messages do not cause information overload, but instead disappear quickly. This ephemeral nature of IM makes it hard to use for more formal communication. That is why a new medium should be introduced.

A somewhat mixed approach for work-based collaboration is presented in Churchill and Bly [9] and Erickson et al. [14]. Churchill and Bly propose to use MUD (Multi-User Dungeon) as a medium for work-based communication. In this environment, people can communicate around virtual work artifacts while using an informal style. They noticed such functions as support for lightweight interactions and creation of a shared culture as especially contributing to the success of such a tool. The Babble project [14] presents a mixed persistent chat approach, allowing people to communicate in chat rooms, where the content remains over days allowing both synchronous and asynchronous interactions. Support for opportunistic interactions, group awareness and informality are noticed as major functions of Babble.

ReachOut, a tool for peer support and community building, shares a common philosophy with the two tools described above, aiming to create a bridge between formal and informal interactions in a work-based environment. In the next section, we briefly introduce ReachOut and define the functions this tool is expected to have in the workplace, based on related work.

## 3. THE REACHOUT TOOL

### 3.1 General Description

ReachOut is a tool for peer support and community building, created at the IBM Haifa Research Lab. While the implementation details and the theoretical background of this tool are described elsewhere [33, 38], we provide a short description of the ReachOut components that are relevant to this paper. Readers who are interested in a more detailed description of the user experience of ReachOut are referred to paper [33].

The main goal of ReachOut is to provide peer support. Similar to Usenet newsgroups, it provides an environment for posting questions to predefined interest groups, but uses a push technology to notify people of new or updated questions.

In its minimized mode, ReachOut appears as a system tray icon, which is overlaid by an exclamation point when a notification arrives (Figure 1).



Figure 1: ReachOut in the system tray

When users decide to open the application, they see a narrow bar where all new and updated discussion titles fade in and out, decorated with icons that indicate their status (Figure 2). Users can then navigate through discussions in several ways, based on groups of interest, discussion title, name of asker, or status of discussion.



Figure 2: ReachOut bar

A ReachOut discussion is very similar to a conference chat, though it is persistent through time; new participants can see the full discussion transcript. Users can also see the history of participation; the discussion transcript contains past entries, and the participant list does not only show active participants but also people who contributed to the discussion in the past and are not currently participating. The ReachOut server logs every entry to any discussion in its log file. This provides us with a unique set of data that we can parse and process, in order to study users' behavior.

### 3.2 Prospective Functions of a Mixed Environment

Drawing from the related work, we can now define the prospective functions of a semi-synchronous tool, such as ReachOut. We argue that such a medium will share most of the functions of both previously described mediums, excluding those that have to do with the specific characteristics of a certain medium. We also anticipate that some new unexpected functions will show up with the introduction of a new medium. The expected functions include:

- *Peer support* – as ReachOut is intended for peer groups this should be its primary function. This function is a prominent function of IM and e-mail. By design, the prominent ReachOut features include both searching for experts and seeking advice.
- *Acceleration of decision-making* – a semi-persistent peer support tool should definitely provide functions that foster faster decision-making. One of those functions provided in the literature is electronic brainstorming [40].
- *Announcements of events* – this is one of the main functions of e-mail, but does not appear in IM, mainly due to the ephemeral nature of this medium. This function can definitely be expected in ReachOut due to its broadcasting mechanism and semi-persistence.

- *Socializing* – socializing is reported as one of the main functions of informal communication. Part of the ReachOut interface is based on the light tone of IM tools, and thus is very suitable for supporting socialization.
- *Team coordination* – while this feature is mentioned as a feature of both e-mail and IM, we expect this function to occur to a lesser extent, since ReachOut is more focused on peer groups than on work-related groups, and its discussions are open to all.
- *Contacting colleagues, friends, and family* – this function is unlikely to be present in a tool such as ReachOut. The lack of this function, however, could be offset by an additional function which could be referred to as *making new acquaintances and creating a social network*.

## 4. METHODOLOGY

Several instances of ReachOut have been deployed in populations with different characteristics. The first was used by sales support staff in IBM [33, 38]. An interesting phenomenon identified then was that at the early stages of deployment, a majority of the discussions were about ReachOut itself. These discussions centered around reporting bugs or suggesting new features, and were an intriguing interface between developers and users, enabling constant improvement of the tool.

This paper focuses on our experience deploying ReachOut at the IBM Haifa Labs. ReachOut was deployed at the labs in the beginning of March 2003, when an e-mail message was sent inviting all employees to install the application and join in. In the period examined (mid-March to mid-May, 2003), 198 people responded by installing and logging in at least once. Of this initial installation base, 179 returned to ReachOut, initiating 312 discussions, and producing a vibrant online community. As in the case of our first experience, this instance of ReachOut had its share of discussing ReachOut itself, and 75 of the 312 discussions were dedicated to that topic. An additional 42 “questions” were actually just tests used for demonstration or learning purposes.

The conclusions presented here focus on the remaining 195 discussions. We analyzed all of them, automatically as well as manually, to come up with the results presented here. The table below depicts the descriptive statistics of the discussion population. Each discussion was viewed by a range of 1–92 people, with an average of 28 people. There were up to 15 active participants in each discussion, and an average of 3.88 participants per discussion.

	Minimum	Maximum	Mean	Std. Deviation
Number of Participants	1	15	3.8769	2.76115
Number of Viewers	1	92	28.5231	13.23706

Table 1: User participation in discussions

Many users took advantage of ReachOut as an additional informal discussion channel, adding a virtual side to an existing community of 500 employees, the majority of whom are all collocated within one seven-story building. Users who joined were from all levels and most job descriptions at the site. Junior and senior management,

research staff, helpdesk workers, legal advisers, administrative assistants, and human resource staff were all represented.

## 5. RESULTS

During the relatively short period that it has been employed in the organization, ReachOut has been used for a wide range of functions, and has evolved some interesting uses. By far the most prevalent form of discussion was a technical question, posted in the hope of finding a quick answer from someone who had already encountered the need for a solution. In a related type of discussion, posters asked for a pointer to an expert in a specific area they were currently exploring, presumably in order to ask a series of questions using other media, or face-to-face. Both these two types of usage fall very nicely in the “acceleration of decision-making” category, enabling the acceleration of processes by more quickly accessing information. They also both match the “peer support” function, which is indeed the most prominent ReachOut feature, by design. As opposed to quick, focused questions, some discussions took the form of brainstorming sessions. To some extent, these sessions exemplify the “acceleration of decision-making” function; reaching a wide audience of debaters enables the quick raising of ideas, and an open discussion on them. However, a moderator who helps focus the discussion would probably assist in ensuring the focus of discussion towards a decision. The “announcement” function turned out to be a useful feature of ReachOut, with subsequent clarification questions and comments proving the usefulness of the medium. The “socializing” function was observed as well, as some discussions were initiated with no purpose but to informally chat about subjects thought to interest the entire community. Most of the discussions were directly work-related, but a significant minority was not.

While examining discussions, we discovered two functions that we did not anticipate from the start. In some cases, discussions were used to alert management to a widespread problem, making use of the public notion of ReachOut in order to push for change. This function of ReachOut actually resolved the disadvantage of managerial use of e-mail [28, 45]. Instead of being overloaded with numerous e-mail messages, managers had a chance to receive community opinions on specific issues at one glance. Finally, some posters made use of ReachOut to raise the consciousness of a large group of their fellow users about an issue concerning a large group of people.

Although users’ initial postings can be categorized as belonging to one of the above functions, discussions often evolved in other directions than those presumably envisioned by the initiator. Jokes and badinage were frequently interspersed with the more “serious” content; innocent announcements were sometimes transformed into negotiation sessions with the announcer; requests for specific information were repeatedly answered by pointers to experts, who presumably would be able to answer the questions; while some questions led to lengthy sessions clarifying, reformulating, and examining the original question and its ramifications. Table 2 shows the distribution of various types of discussions, both as they originated and as they evolved. (Chi-square test, in both cases  $p < 0.001$ ).

Initiation of Discussions		Evolution of Discussions	
Category	Number	Category	Number
Specific question	108	Specific answer	57
Expert search	9	Expert referral	27
Brainstorm	9	Brainstorm	16
Announcement	46	Discussion	51
Socializing	11	Socializing	33
Problem alert	17	Problem alert	18
Consciousness raising	7	Consciousness raising	8

**Table 2: Distribution of various types of discussions**

In the following subsections, we discuss the various types of discussions observed, and present a few examples.

### 5.1 Specific Questions and Searches for an Expert

The most common use of ReachOut at the IBM Haifa Labs was to ask a specific question, or to look for an expert in a specific field. ReachOut was useful in this case because the large number of people subscribed to it gave askers a good chance of finding an answer in a short time. Since ReachOut users represent all areas of the organization, a question posted on the system could reach beyond the group of people known personally to the poster.

Transcript 1 is an example of a question that got a speedy reply:

N. posted a question asking for information:

**N. 25/3 14:29:**

I am looking for information about Windows File System Security: file permissions, ACL's, granting permissions, ... Can you recommend good resources?

Three minutes later, she got her first response. A reference to an IBM Intranet site:

**B. 25/3 14:32:**

<http://w3.security.ibm.com/>

25 minutes later, a reference to an external Web page was added by A.:

**A. 25/3 14:57:**

<http://msproducts/>

The next day, R. referred N. to a local expert he believes may have encountered this issue in the past:

**R. 26/3 11:38:**

Ask A. R. [phone #] - I think he dealt with this in his previous work. Not sure though.

**Transcript 1: A question that got a speedy reply**

An average of 24 people viewed discussions that were initiated as a specific question, and an average of three participated in these discussions. In a random sample of 30 of the 108 specific questions,

24 received an answer (even if it didn't completely solve the problem). Of these, 17 received an initial answer within an hour, and 15 received a final answer within a day. This shows that indeed, the functions of "acceleration of decision-making" and "peer support" were demonstrated by ReachOut.

Out of the 57 questions that received a specific answer, 35 answers were given by people who work on a different floor than the asker. The chances of the asker questioning the same advisers through other means are slim, showing that ReachOut opened up a new channel of information flow. In short, the function of "making new acquaintances and creating a social network" was exemplified.

## 5.2 Brainstorms

ReachOut proved to be a good tool for brainstorming sessions, as people could float their ideas to a wide audience. In a face-to-face brainstorming session, the right group of participants needs to be identified in advance and summoned to a meeting in which they must voice their ideas within a short and specific time frame. Using ReachOut, ideas were floated to the general public, and people could choose to participate when they felt they had something to contribute. Responses could be submitted on an ongoing basis, without committing to a very limiting period of time, thereby enabling multiple offline discussions as the session progressed. Additionally, several discussion threads could be maintained simultaneously.

All discussions that were initiated as such, indeed succeeded in raising a brainstorm. The average number of participants in a brainstorm discussion was 5.9, as opposed to 3.9 on average for all discussions. One discussion got 15 people brainstorming over a period of 13 days. This discussion was still vibrant when the log for this research was cut off. The size of brainstorm discussions was significantly larger than other discussions, with an average of 20.46 responses versus 8.97 for all discussions. The average duration of brainstorms (6.53 days), on the other hand, was not significantly longer than the overall average (5.31 days), indicating that these discussions were more active when they lasted.

Long online brainstorms tend to have several threads interwoven within the discussion. We noticed this phenomenon and were pleased to see that the readability of the transcripts was not impaired by multiple threads, even though ReachOut did not suggest any threading mechanisms of its own within the same discussion. Another pattern we have noticed in some cases is that discussions progress in bursts. A thread is raised and discussed over a certain period of time, then some pause is taken, and another person raises a new idea, causing the discussion to thrive again for a while.

## 5.3 Announcements

Before the advent of ReachOut, announcements were usually sent by e-mail to the organization-wide distribution list. In many cases, announcements were followed by a spate of requests for clarifications, suggestions and comments to the announcer, usually by return e-mail. If the return e-mail was directed to the announcer alone, repeated questions had to be dealt with. In cases when the return e-mail was addressed to the organization-wide distribution, hundreds were forced to follow a discussion that did not necessarily interest them, and cluttered their inboxes, causing information overload [21, 45]. When ReachOut was introduced, an effort was made to educate people to post their announcements on the system and address them to the appropriate interest group. This enabled

users to filter out announcements that did not interest them. In addition, some of the follow-up questions and comments were made publicly on the system, thus reducing multiple identical questions, and providing a focal point for clarifications.

Transcript 2 is an example of an announcement that was followed by some clarifying questions:

G., an assistant in the Operations Department, posted the following announcement regarding traffic disturbances:

**G. 31/3 11:08:**

*Please note that tomorrow (April 1st) between 12:30-1:30 pm there are expected to be some traffic disturbances due to the race in memory of Ian Shapira, organized by the HU. Thanks in advance for your cooperation.*

M. asked a clarifying question:

**M. 31/3 11:09:**

*Where will these disturbances take place?*

He was not familiar with the acronym HU, and assuming he is not the only one, he asked for clarification about that as well:

**M. 31/3 11:09:**

*And what is HU?*

J. entered the discussion some time later. She did not know the answer to the first question, but was familiar with the acronym, and volunteered the answer to that:

**J. 31/3 11:39:**

*HU = Haifa University*

G. reentered the discussion when she returned from lunch, and supplied the missing details:

**G. 31/3 12:33:**

*All the way from Haifa University to Beit Biram (two-ways)*

And B. jokingly added:

**B. 31/3 12:53:**

*SO we can't have a walk after lunch? (joking...)*

### Transcript 2: Announcing Traffic Disturbances

28 of the announcements were posted by members of the core team disseminating ReachOut, in an effort to set an example to others. Five were posted by other people during one-on-one sessions of introduction to the tool made by a core team member to assistants and management members, again, in hope of getting them used to the format. Thirteen of the announcements were made by community members on their own initiative, with a noticeable trend towards member postings rather than core postings as time went by.

Reponses were posted to 31 of the 46 announcements (an average of 5.65 responses per announcement), proving that this feature is indeed useful.

## 5.4 Socializing

Transcript 3 is a somewhat extreme example of a humorous session that took place on ReachOut when V. lost her cellular phone and tried to use this medium to find it:

**V. 14/4 16:33:**  
Has anyone seen by accident a blue Nokia cell-phone?

**M. 14/04 16:37:**  
I saw one in the store a few weeks ago, but I do not think that it was by accident :-). Please give more details on where and when!

**T. 14/04 16:57:**  
How much does it cost? :-)

**M. 14/04 16:58:**  
I don't remember but I think that in it was about 750NIS, but they only had blue on display :-)

**T. 14/04 16:59:**  
750 is too expensive for me....Only blue?!?!?

**M. 14/04 17:00:**  
:-)

**T. 14/04 17:00:**  
But what kind of accident was it? Not serious i hope?

**H. 14/04 17:36:**  
Friends, V. has lost her phone and you are making jokes? not nice

### Transcript 3: An example of socializing over ReachOut

We were pleased to see that people found ReachOut an open enough environment for being so sociable. However, a closer inspection of the details of this discussion's participants revealed that M. and T. belong to the same group, and know each other well. Exploring the rest of the lighter social discussions that took place on ReachOut shows that in the majority of cases, the people socializing knew each other prior to meeting online. This is in line with related work that claims the necessity of face-to-face acquaintance as a base for online socialization. In rare cases, we did see a real sense of "private" vocabulary and ReachOut-developed culture, with people jokingly quoting semi-relevant snippets of other on going discussions and humorously putting each other down somewhat. However, all these cases occurred during the first days of the 2<sup>nd</sup> Gulf War, when tensions were high due to the overall situation.

## 5.5 Problem Alerts

People in a work environment often encounter annoying problems that management can solve, or think of original ideas that they would like management to implement. The natural channel for raising such issues would be for people to turn directly to management, in the hope that the challenge will be taken up. General overload and the ad-hoc nature of such appeals often render them stuck by bureaucracy, even before a real assessment for their need has a chance to take place. Employees who try to raise public opinion towards change may be considered troublemakers. It is

often difficult for management to assess the pervasiveness of either the problem or the need. ReachOut served as a natural place where people could raise ideas in the open, allowing peers to support, object, and even improve their ideas, while informing management aware of their thoughts. Management could choose to follow up or ignore a discussion, without having to formally turn down any suggestions.

The following discussion shows an example of a session in which several threads of problem alerts are taking place. E. from Human Resources, who raised the discussion in the first place, addressed and discussed some of the issues, while ignoring others. The issues she disregarded were eventually ignored by her peers as well, apparently indicating that the need for the implementation of those ideas was not very pressing. The session was initiated when E. posted an announcement regarding the yearly training program. The announcement included instructions on course registration.

**E. 11/5 12:31:**  
We are happy to present the 2003 training program. [Here followed an explanation of the importance of training, and instructions for signing up via a Lotus Notes database.]

Apparently, the registration database was up, but not all course details were there yet. The next day, Y. decided to raise this issue:

**Y. 12/5 14:10:**  
It is quite challenging to decide whether a course is suitable without knowing what it is all about (i.e. its syllabus...). Having just a title to describe a course does not help. Just as an example, I wonder what is so "advanced" in the "Advanced Java" course...

K. was happy to join the protest and add some additional details:

**K. 12/5 14:10:**  
Good point. The same for other courses: SW Engineering, Websphere... I was asked to choose the course(s) by my manager, and I do not know what to say.

R. had a non-related idea and he raised it in public, in the hope of getting the system to implement it:

**R. 12/5 15:53:**  
I wonder if there is any reflection of the recent request from M. to use e-Learning. Could, for example, be nice if with each course we see the e-Learning alternative, where exists.

E. visited the discussion again shortly after that. She realized that the details were not there yet, and added a calming comment:

**E. 12/5 16:45:**  
The courses content & dates will be published as soon as possible. You may hold your registration till then. The database will soon be updated with courses details.

But this did not seem to be enough – R. brought up the problem previously raised by Y. and K.:

**R. 12/5 16:46:**  
Unfortunately, we are asked to register

already ...

This was news to E., and she asked for clarification. The discussion then became practically synchronous, and Y. got back in on R.'s protest:

**E. 12/5 16:47:**

Please explain

**Y. 12/5 16:56:**

E., you've asked in your note to enter to the course DB and register to the courses we are interested in...

**E. 12/5 17:02:**

And you are still welcome to do so, however if you feel you need additional information, there is no need for an immediate registration. Note that the final participant list won't be determined based on 'who registered first', but on the relevancy to the employee's daily work.

The next day, another problem appeared:

**H. 13/5 15:15:**

How can I see the courses I registered/asked for? To see a summary of the requests?

**E. 14/5 9:11:**

By clicking on the Employee=>by name, you will be able to see your registered courses.

**B. 14/5 9:37:**

No such view for us...

**E. 14/5 9:38:**

I'm checking with our IS support

Indeed, E. became aware of the problem through ReachOut, and two hours later reported of the fix:

**E. 14/5 11:25:**

Try again now. You should be able to see the view

**B. 14/5 11:43:**

The view is now available. Thanks you.

This got J. thinking, and she raised yet another idea:

**J. 14/5 12:48:**

Now that we have this view, we can see our own courses. Any chance to get to see other people's entries? I realize there's a privacy issue, but there's some sense in sharing this information - both for getting recommendation from people who previously took the courses, and for using the social information when registering (course experience may be completely different, pending on the participants).

This happens to be the last posting in the discussion. E. never addressed the ideas that were raised by R. and by J. Neither did anyone else - they did not attract public opinion, and thus were not pushed further.

#### **Transcript 4: Four different threads of problem alert**

Transcript 4 contains four different examples of problems and ideas that were raised publicly. The first problem - the lack of details in the course database - was reinforced by three different people (Y., K., and R.) in four postings. They gained confidence by their repetition of the messages as they insisted on a solution. In this case, E. offered a solution by trying to calm the protests, noting that registration could be postponed until details appeared on the database. The second problem (the inability to view one's own courses) was raised by H. and enforced by B. Getting two such alerts made E. turn to the IS support team and solve the problem within two hours. In the absence of ReachOut, we can assume that a longer period of time would have passed before E. realized that the problem was indeed prevalent, and not local. The fact that H., B., and other viewers of the discussion were made aware of the common problem and the eventual solution probably relieved E. from a few dozen questions that may have eventually reached her, regarding the same problem.

The other two ideas that were raised in Transcript 4 were simply not acknowledged. This in itself is also a type of feedback—had people thought these ideas worthy of implementation, we expect they would have added their support right there in the discussion. The lack of support indicates to R. and J., as well as to management, that their ideas may need to be further developed.

When examining the rest of the transcripts, we find that 28 discussions contained some kind of problem alert, either initially or as the discussion evolved, with a total of 37 different threads concerning problem alerts or ideas. Of these discussions, 31 garnered the attention of management, and 19 elicited some response from a manager or staff person. Four of the alerts turned out to be unjustified, while in 14 cases the responsible manager agreed to at least look into the matter, proving the power of an open public view. As of the writing of this paper, three of the issues raised were successfully resolved.

## **5.6 Consciousness Raising**

Management is not the only population that can be prodded via ReachOut. Rank-and-file users may also be influenced by consciousness raising. This mode of use was not prevalent, but eight discussions were initiated for this purpose. Three of them were initiated by management, to try and encourage people to act according to proper business conduct. This was attempted by asking people to convey an opinion regarding certain issues, such as increasing delegation in the organization, or filling out a form of personal expertise details. The other five were posted by employees hoping to raise the consciousness of their peers in some manner, for instance by making them aware that projectors should be turned off at the end of presentations, or that paper should be recycled. We found it intriguing that these community conscience issues were raised voluntarily by employees and not by management, increasing the likelihood that they would be accepted.

## **6. CONCLUSIONS**

The information presented in this paper shows that a semi-synchronous collaboration tool, such as ReachOut, can be useful in multiple ways when used in the workplace. The tool was used for various communication purposes, and enabled people across the organization to exchange ideas. We identified several interesting phenomena: management and employees held informal discussions, ad-hoc groups formed to address support staff and management on several issues, a new efficient announcement channel was

established, and focused problems found speedy answers. ReachOut proved to be informal enough to support traditional informal communication functions, and persistent and effective enough for more formal tasks such as brainstorming.

Based on our results, we conclude that tools providing a bridge between semi-formal and informal communication can be extremely useful for a large collocated community. While physical proximity contributes to informal communication [23, 44], the overall size of such a community prevents efficient informal interaction [21]. The combination of features that foster informal interaction and others which help to overcome community size boundaries is a good recipe for large collocated communities to maintain successful communication.

## 7. FUTURE WORK

Large collocated communities are not the only suitable environment for the deployment of ReachOut. It is probable that communities varying in size and physical proximity could take advantage of different synchronous and asynchronous features of ReachOut. This would expose different usages and functions of the tool. In fact, ReachOut was also deployed in another large body of users - IBM practitioners. The people in that instance were not collocated at all, and in fact mostly did not know one another nor communicated with each other prior to meeting on ReachOut. One of the future work directions is to compare the usages and functions ReachOut played in two different communities. Another interesting comparison would be the community sense that is acquired over ReachOut, especially in populations that were not a community prior to using the tool.

The studied ReachOut community is only in its initial stages. Studying the diffusion patterns of a new communication tool is always an intriguing task [15, 35]. Though we already identified major directions in the usage patterns of ReachOut, there is still a lot of work to be done to fully distribute the tool in the community. Studying ReachOut diffusion patterns and the evolution of new usages is another intriguing task for future research.

Finally, ReachOut is a convenient laboratory for collecting community collaboration activities. Analyzing patterns of behavior (both active and passive), social networks structure, and collaboration content can shed new light on our understanding of online communities.

## 8. ACKNOWLEDGMENTS

We thank Amnon Ribak, who first proposed ReachOut, for his continuous feedback and insight. We also thank Yoelle Maarek for her support of our research. The valuable contributions of Sagee Rosen, Roy Navon and Raanan Nevet made ReachOut the tool it is today, and we are indebted to them. Boaz Mizrachy deserves special thanks for his enthusiasm and dedication, without which the deployment of ReachOut in Haifa would not have been the success that it is. We also thank the management and employees of the IBM Haifa Labs for their time and effort in taking part in the ReachOut community.

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