Collaboration Challenges at High Tech Company

by

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Executive Summary:

A software product group at High Tech Company, a technology giant, faces collaboration challenges in an increasingly global and fragmented work environment. The group is comprised of software developers, business analysts, product consultants, technical writers and trainers. With teams located in different time zones, and employees working from home, communication and collaboration issues arise. Data from eleven phone interviews and forty-seven surveys was gathered and analyzed over a three month period to identify collaboration barriers. Established collaboration frameworks in academic research were applied, which lead to possible solutions to these issues. Our study shows that an insular work culture, self-reliance, physical distance, information overload, and weak ties between employees, all pose challenges to effective communication and collaboration.

To overcome the above challenges, we suggest making subject matter experts more accessible and implementing a 360-degree performance review with collaboration metrics. In addition, we suggest the creation of a "referral" system where employees can recommend colleagues who helped them. Furthermore, we recommend that important information be archived and shared across the group. Lastly, we think it is beneficial for the teams to build a stronger and more efficient group.

1. Introduction

A group of people with different expertise, separated by geographical boundaries, time zones and cultures, work together to achieve a unified goal - to release a software product in 2012. They work in virtual environments that facilitate real-time communication. But does this resolve issues such as lack of familiarity since no one has met each other in person? To what extent can a multi-national corporation rely on technology to get their job done? We set out to answer these questions and more when we began our analysis of the existing collaboration practices within the group at High Tech Company.

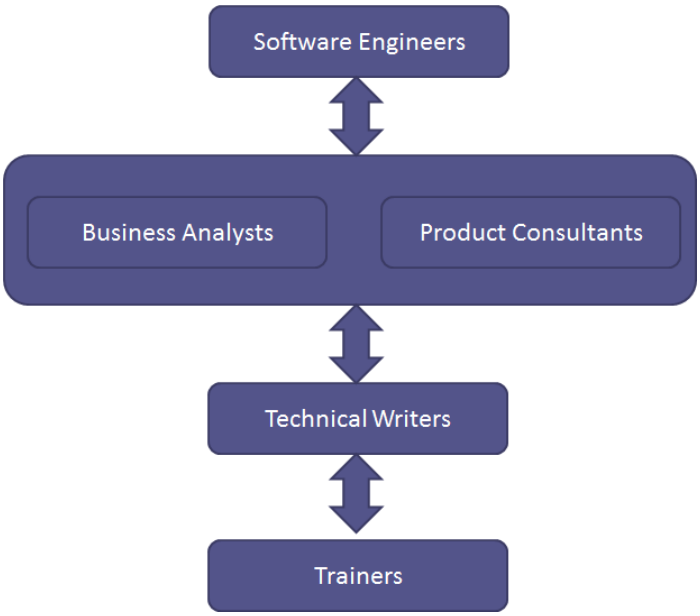
As we began our study, High Tech Company asked three key questions:

- What are the teams facing collaboration problems?
- What specific barrier does the group have?
- What are the "problems" within the group?

So we studied a group within the organization comprising of over 200 enterprising individuals scattered across different geographical boundaries and separated by different time zones. The two major teams in this group that we worked with were:

- *The Software/Business Analyst Team* – responsible to develop the end product and provide valuable business information about the product and
- *The Documentation/Training Team* – responsible to provide documentation for the new product and design a training curriculum to train first time users on the new product.

In addition to this, more than 90% of the team works from home. All communication within the group is through Instant Messenger (IM), SharePoint (a content management system), Emails, Virtual Rooms (a real-time communication product) and the telephone. The flow of communication within the team we studied over a period of three months is depicted below.



As seen from the chart, Product Consultants define the project roadmaps and short-term goals, while Business Analysts primarily serve as the coordinator of information between Software Engineers and Technical Writers. Trainers, on the other hand, communicate mainly with technical writers. The Software Development Group had very recently completed transition into an agile development model, while the Technical Writing and Documentation team continued to work under the waterfall model.

Another interesting finding is their culture and approach towards meetings. Meetings are held at fixed dates and times for the Documentation and Training team. However, the Business Analyst team has on-call meetings scheduled if they have something to discuss and no meetings at all, if there aren't any requests to meet. All these meetings are held virtually and information is also shared using Virtual Workspaces.

In addition, most of the documentation team members originally belonged to a smaller company, which was acquired by High Tech Company. The impact that an acquisition by a large company would have on the environment/nature of work, was a key consideration in this study.

Information Technology is the driving force of today's economy but, is the industry ready yet to fully migrate to these interactive virtual work environments and replace traditional workspaces? Would the much-needed collaboration between teams be sacrificed due to this migration?

The focus of our analysis is two-fold:

1. To identify the current barriers within the group that prevents them from collaborating to the fullest.

2. To recommend best practices which when followed would overcome the barriers and ultimately contribute to a better collaboration environment

2. Analysis:

For this study, we were provided a list of employees to interview from across multiple teams. Perhaps, a random sample of employees and/or interviewing team managers would have produced different results. However, given the time constraints (three months) and a non-random interview pool, the data set is vast and varied. Additionally, while there is a team in India, only the U.S. based team was interviewed. Interviews were conducted over a three-month span with an average of two interviews per week. In total, eleven employees were interviewed.

An online standardized and anonymous survey (Hansen 64) was also provided to a subset of employees (with the exception of software developers) in the group. Forty-seven employees answered the survey. Scores of all survey questions were aggregated with higher total scores indicating a bigger problem and vice versa.

The framework used for analysis focuses on four possible collaboration barriers: hoarding, not-invented-here, search and transfer. While High Tech Company faces three of the four barriers to varying degrees, they for the most part, collaborate well.

Hoarding

Hoarding is defined as, “people are unwilling to help and share what they know” (Hansen 54). Despite the challenge of communicating remotely, employees strive to be helpful and share information with people from other teams. Technical architects in the software team share business requirements and product specifications with the business analysts, who in turn share wireframes and use cases with writers. Based on the collected data, there is little evidence of hoarding.

A large percentage of the interviewees stated that, once they find whom to ask, they are able to get their questions answered. For example, one employee mentioned that, if he sees an expert online, he will send an instant message before searching in SharePoint, and that he usually gets a quick response with either an answer or tips on how to find solutions. Another interviewee said that she always answered questions from her colleagues, although if she was extremely busy, she did not respond immediately. Still, she always answered questions eventually and valued shared knowledge.

Interviews do suggest some degree of “narrow incentives” and “being too busy,” although people are in general happy with kudos from managers and they like to keep busy. The benchmarking survey indicates that hoarding may

be a relatively small problem as seen from the barrier score obtained through the survey and there is no immediate cause for concern (Exhibit 1 and Exhibit 2).

Not-Invented-Here

High Tech Company does face the not-invented-here barrier, which "arises when people are not willing to reach beyond their own units to get input and collaborate" (Hansen 51). According to some interviewees from the training team they are often marginalized in various ways (because of their relatively small team size). They sometimes need to go through several layers to obtain information. Their first layer is a technical writer who may then contact a business analyst with the trainer's question. In addition, some people mentioned that their colleagues are generally busy, and that they sometimes need to rely purely on themselves to resolve problems. These are signs of "Insular Culture" and "Self-Reliance." The survey also illustrates that "Insular Culture" and "Self-Reliance" are problematic, with both scores higher than average. (Exhibit 1 and Exhibit 3).

Search

"Search barrier concerns the inability to find information and people in a company" (Hansen 56). This study shows that, while High Tech Company has

some very successful tools in place, the search barrier is still present. According to interviewees, there is a web-based tool ("stealth service pool") that has a keyword search function. Using this tool, employees are able to efficiently search for both answers and experts within the entire corporation who may be able to assist them. However, several interviewees discussed that while they are often able to find documentation in SharePoint, the search sometimes takes a substantial amount of time and the documents found are not always relevant.

In addition, some interviewees voice concerns related to information overload, particularly business analysts. Given the size of the company and the distributed nature of the working environment, information is likely to be fragmented and spread over email threads or locked in issue trackers and licensed tools like Quality Center, which are not accessible to all employees. One business analyst said, "When you want to stay in the loop . . . people start sending you everything and you have to judiciously sort through it to determine what's important and what's not What's important to you may not be important to them. . . You have to have a large mailbox and you delete things that are not important to you." Further evidence of the search barrier is presented in the survey (Exhibit 1 and Exhibit 4).

Transfer

Lastly, based on our analysis, the group faces a fairly significant transfer barrier. Hansen notes that this barrier revolves around issues of "transferring expertise, know-how and technologies" across "different units [who] do not know how to work together" (60). As one writer mentioned:"Some information gets lost in translation, and we don't know if we have communicated well." These nuances in communication can cause misconceptions about intent and tone. Academic research also shows "that people find it hard to transfer knowledge when they don't know each other well (weak tie)" and "weak ties create havoc when people need to transfer tacit knowledge" (Hansen, p. 62).

Furthermore, the group's software development has transitioned to an agile model. This involves self-empowered teams with shorter iterations and stricter deadlines. The transition has impacted the effective transfer of information and knowledge from the software team to the documentation and training team. Technical writers in the group are of the opinion that "Agile is probably wonderful for developers... it's not so wonderful for people trying to document what they're developing." To add to this, working remote and all the communication challenges it brings, leads to very little tacit knowledge

transfer. The survey highlights this moderately strong transfer barrier in the group (Exhibit 1 and Exhibit 5).

3. Recommendations

Despite the fact that employees are geographically distributed across multiple time zones, High-Tech Company scored high on collaboration. However, there is room for improvement, especially in overcoming the not-invented-here, search and transfer barriers. This section presents suggestions that could potentially improve their collaboration process.

Not-Invented-Here

As gleaned through the interviews, the technical writers and trainers are said to be "one team but two in spirit." The trainers are relatively small in number and they identify themselves as being "at the bottom of the totem pole" when it comes to information dissemination. The fact that the training team needs to peel through multiple layers to access information from subject matter experts or the software team is inefficient. Insulating the technical trainers is not healthy for the organization. To remedy this, we recommend providing access of subject matter experts to the training team as well.

“Some people are smart and enjoyable but they are not hardwired to collaborate and have to be reminded,” claimed a business analyst. Several interviewees noted that, while collaboration is a norm for High Tech Company, some people are less aggressive in collaborating with others. In order to foster a healthy culture of collaboration, we suggest implementing a 360-degree performance review process, where collaboration should be valued at least 15% of the metrics. Instilling a 360-degree performance review will incentivize employees to budget their time in way that allows them to assist others.

In this 360-degree performance review, superiors, subordinates and peers get a chance to fill in a survey – anonymously – to evaluate a person. A 360-degree review is where the evaluation is carried out up (boss), down (subordinates) and across peers (Hansen 103). Subordinates’ feedback can strengthen one’s management techniques, peer reviews could expand one’s skills from other disciplines and supervisor’s suggestions could increase one’s understanding about corporate goals and strategies.

We believe that it is critical for the organization to cultivate more T-Shaped people who not only possess technical expertise in their own domain, but also excel in working with others and helping others overcome challenges in their

disciplines. Thus, the practice of including collaboration as part of the performance review metrics could, for one, potentially, encourage those T-shaped people to stand out and for another, motivate people to be more aggressive in pursuing collaboration.

Search

Nearly 95% of the interviewees agreed that being geographically dispersed, they do not know their colleagues in different teams, and they are purely limited to their own team contacts for information. This setup has the risk of creating a set of small and siloed networks. To ease this issue, High Tech Company has created a system where people can input their expertise so that others could find them easily when help is needed.

We suggest the addition of a "recommend" feature within this system, where for each expert, a list of problems he/she has helped resolve would be displayed. Colleagues can then rate the expert on their knowledge and this would be for all to see. This would foster an environment where helping a colleague is not just appreciated publicly but also valued by the person who received help. We think this could be particularly useful for distributed offices where people don't know each other well enough and would help get them started.

Teams at High Tech Company exchange complex knowledge, but not everyone in the organization has access to this. For example, some of the information exchanged, especially those from the Business Analyst team, is important for all to know since they co-ordinate the entire system. We recommend that the teams codify such information, archive it and share it with all members to increase access to information within teams. This would enable anyone who needs information to access the system.

Transfer

The software team has transitioned from a waterfall development model to an agile development model. However, the documentation team has not yet shifted to an agile model. From our interviews we learned that some members of the documentation team feel the iterations in an agile system are too short, and it changes too frequently. We recommend that the software and documentation teams touch base often to define the goals and milestones for each iteration. Doing this will ensure smooth transition of the documentation team into the process. In addition, given High Tech Company's corporate size, other project groups within the company may have some successful experience within a similar transition, and learning from other experiences could be immensely helpful.

Since most employees work remote and do not know each other very well, nuances of communication, such as tone, are not always interpreted as intended. These are signs of weak ties. Weak ties are enough when it comes to finding people and general information. But while transferring tacit and complex knowledge, strong ties are preferred. A classic collaboration trap, as observed by Dr. Hansen (who has done extensive research on collaboration), in a case study, occurred when "strangers started to work together in a virtual team sitting in two different locations and soon ran into collaboration issues"(Hansen 135). At High Tech Company, employees are not necessarily strangers, but weak ties do not support an environment that's conducive to fostering collaboration. We suggest that the team members come together at least once a year to build personal and social relationships, to convert weak ties to strong ties.

Other Barriers

Communication plays a key role in collaboration and directly affects the quality of collaboration. Here, we present recommendations for improved communication at High Tech Company.

Some interviewees voiced concerns about inefficient meetings. For instance, according to a trainer, technical writers often monopolize meetings that both

writers and trainers are required to attend. Additionally, business analysts noted that meetings could be more efficient – *"Some people come to the meetings unprepared and without insight into the specific tasks that will be addressed in the meeting*." We recommend that the meeting time be utilized more efficiently. We also suggest that the Training team should be able to excuse themselves from meetings with the Documentation team if the writing team wishes to have specialized conversations. Alternatively, the writing team could hold a separate meeting for issues that are specific to their tasks. Again, meeting goals need to be unified and shared with all participants before the meeting, and after the meeting, minutes should be documented and shared in SharePoint for future reference.

Conclusion

High Tech Company's collaboration issues mainly arise from self-reliance within teams, physical distance, information overload and weak ties between team members. Our recommendations for solving these issues should enable the company to establish disciplined collaboration between teams by promoting team building policies and events, implementing 360-degree performance reviews for greater motivation and incentives, and providing greater access to subject matter experts for knowledge sharing and transfer.

This report will be delivered to High Tech Company to help them with their efforts to understand and solve their collaboration challenges.

Exhibit 1. Collaboration at HP.

Barriers	Sub-Barriers		Scores
Not-Invented Here			Score: 113/300 (IM: 160)
	Insular culture	Yes	
	Status Gap	No	
	Self-Reliance	Yes	
Hoarding			Score: 51/300 (IM: 100)
	Competition	No	
	Narrow Incentives	Yes	
	Being too busy	Yes	
	Fear of losing power	No	
Search			Score: 129/300 (IM: 135)
	Company size	No	
	Physical distance	Yes	
	Information overload	Yes	
	Poverty of Networks	No	
Transfer			Score: 126/300 (IM: 168)
	Tacit Knowledge	Yes	
	Weak ties	Yes	
			#IM – Industry Median

Score range 1 to 300 (smaller scores are better).

Results benchmarked against a sample of 107 companies.

Survey from Page 64, Ch. 2, Opportunities and Barriers, Collaboration by Morten. T. Hansen

Exhibit 2. Hoarding: Barrier might be a problem

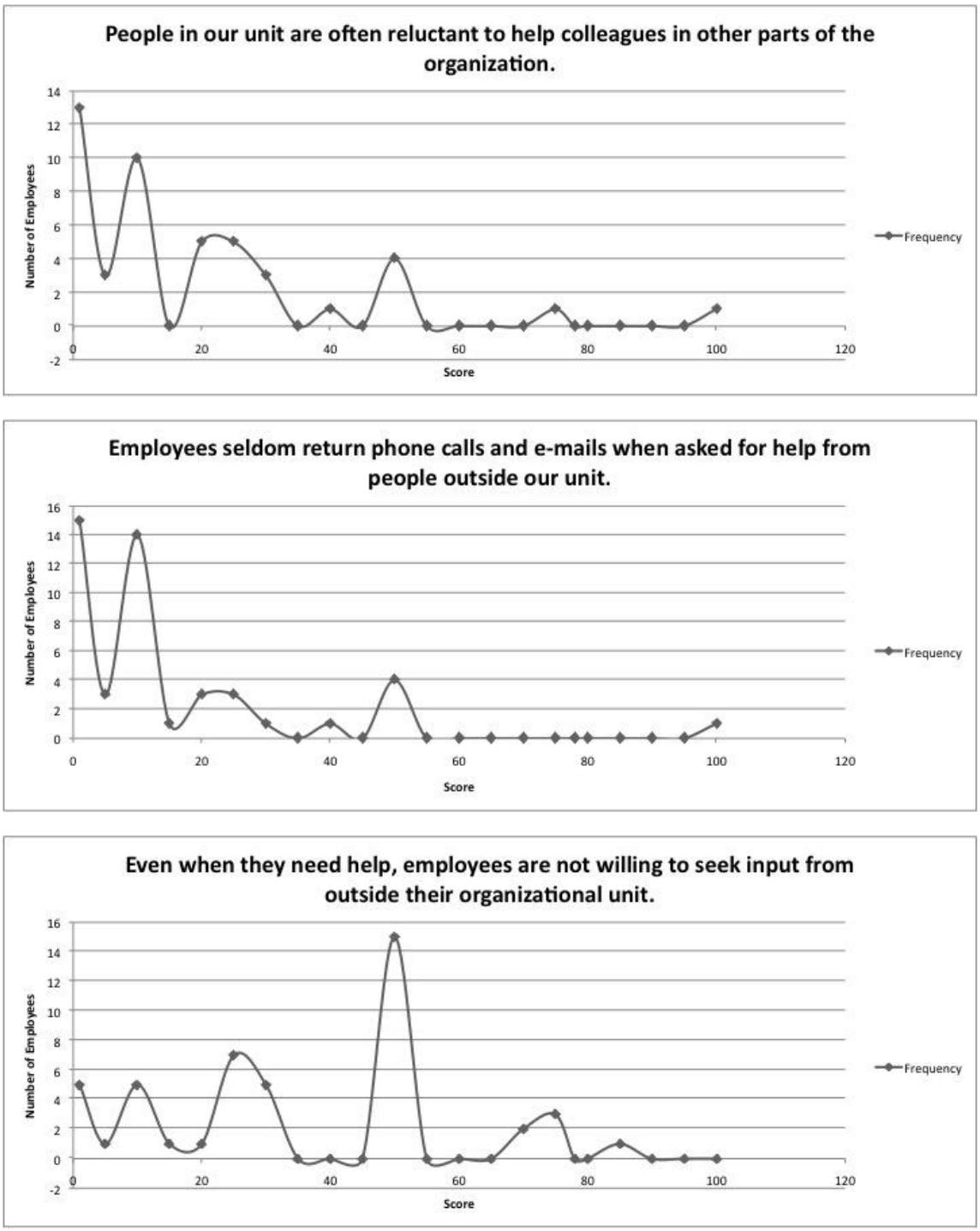
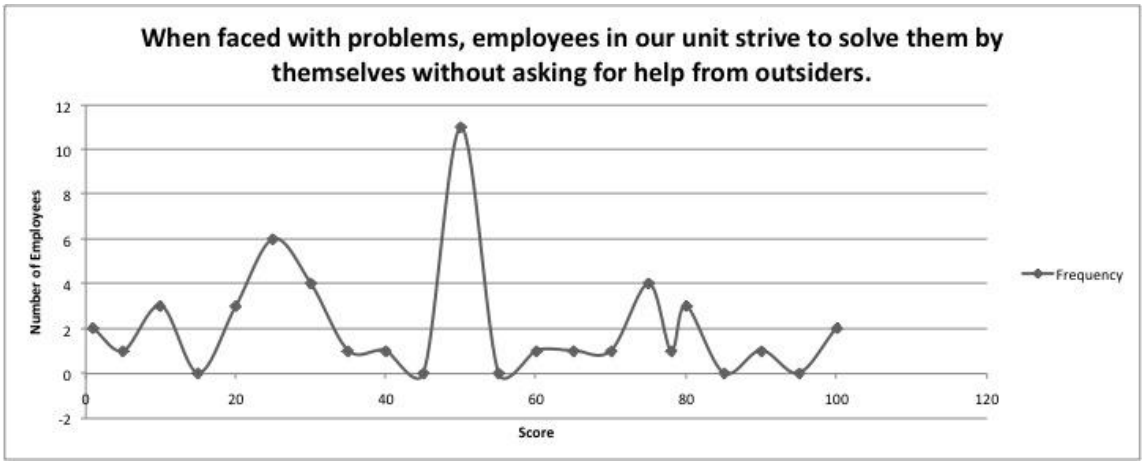
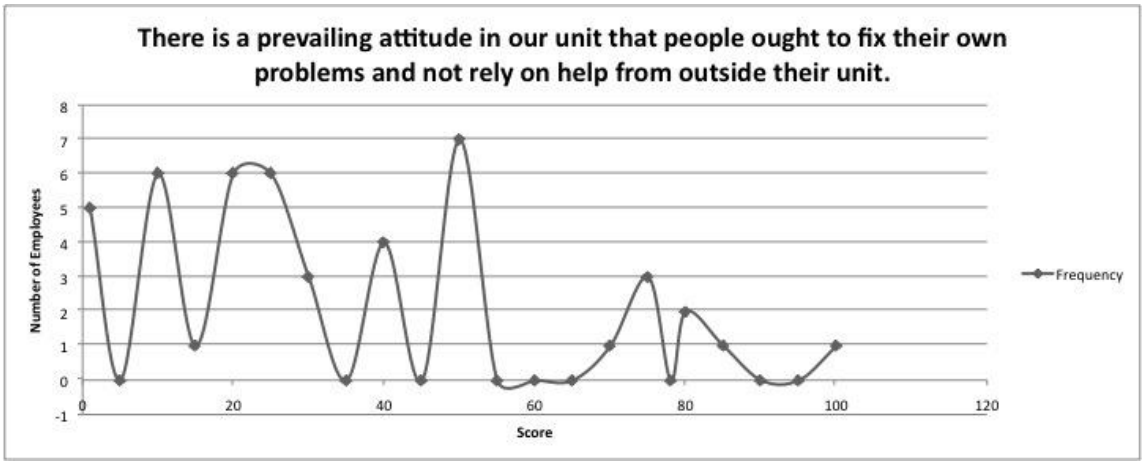


Fig: Distribution of responses to questions about the barrier. Lower scores are better.

Exhibit 3. Not Invented Here: Barrier might cause some problems





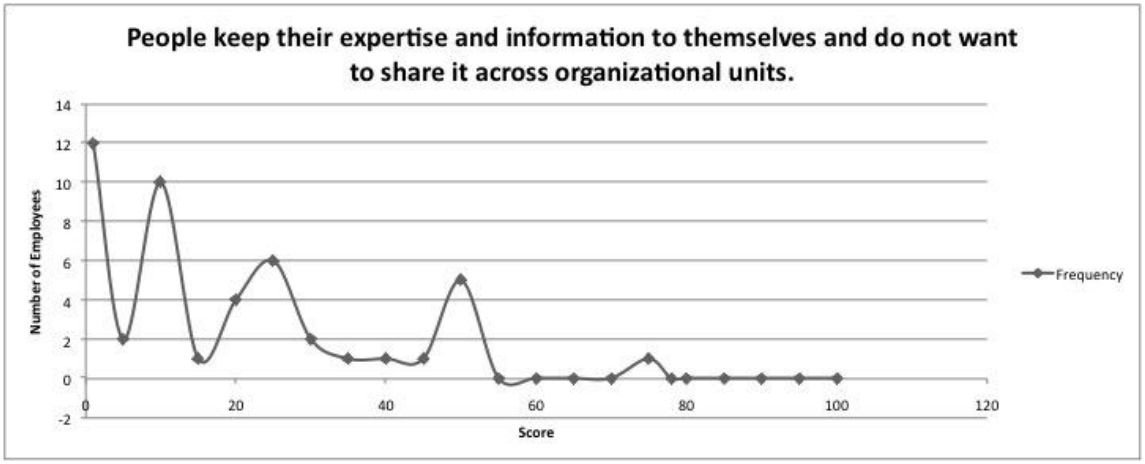
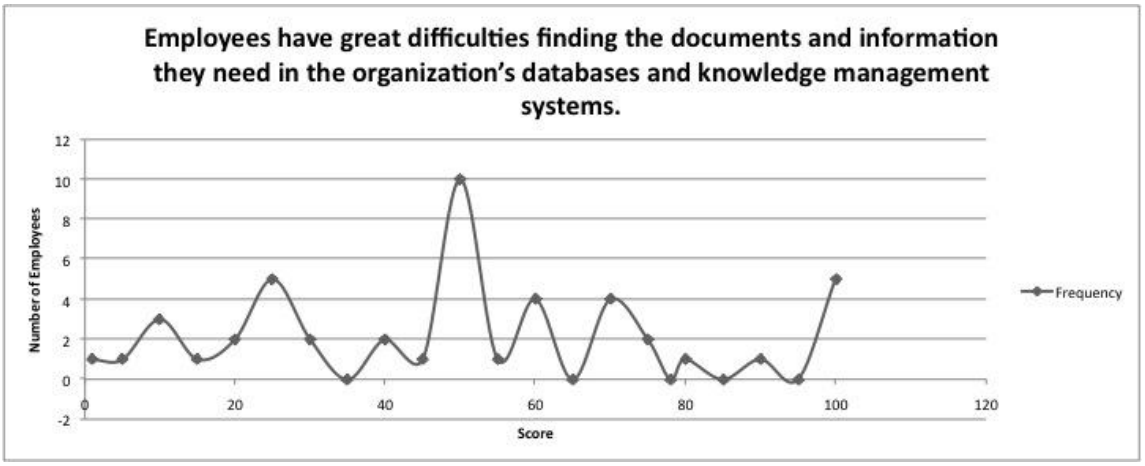


Fig: Distribution of responses to questions about the barrier. Lower scores are better.

Exhibit 4: Search: Barrier might cause some problems



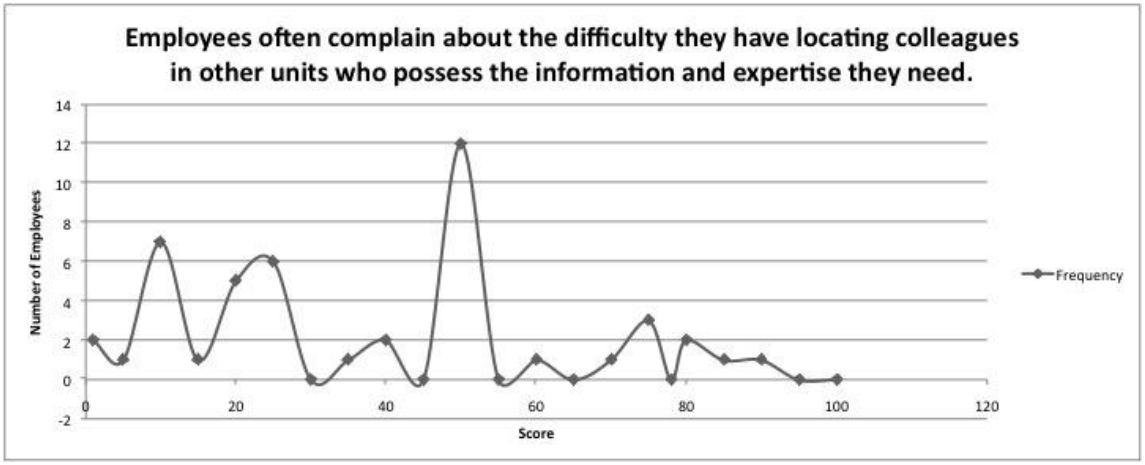


Fig: Distribution of responses to questions about the barrier. Lower scores are better.

Exhibit 5. Transfer: Barrier might cause some problems

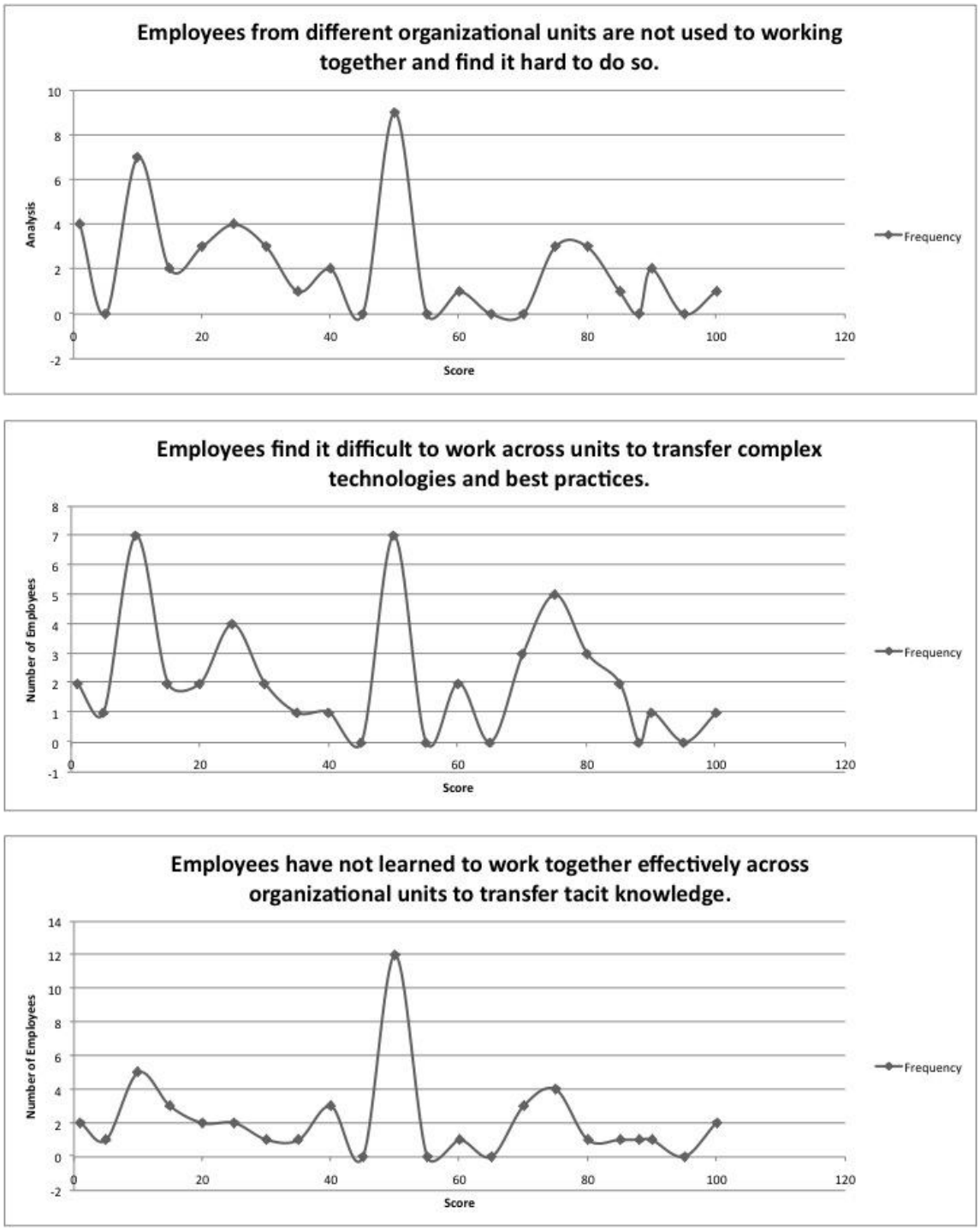


Fig: Distribution of responses to questions about the barrier. Lower scores are better.

Works Cited

Eleven interviews were conducted between October 22, 2010 and November 29, 2010. Business analysts, senior product consultants, technical writers, and trainers were interviewed. Interviews were guaranteed anonymity.

Hansen, Morten. *Collaboration: How Leaders Avoid the Traps, Create Unity, and Reap Big Results.* Boston: Harvard Business School Publishing, 2009. Print.