# Office Work, Knowledge Work:
## Studying Office Work in an Academic Environment as Knowledge Work

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*Abstract*: How do office staff work cooperatively in an academic department? In particular, how do they communicate with faculty, students, alumni, and each other; manage their time and projects; and coordinate work with collaborators? In this informal study, I apply knowledge work concepts from a previous CWRL white paper to a naturalistic study of office staff. Findings indicate that staff are dealing with many knowledge work concerns (communication, time and project management, coordination), but in an ad hoc fashion. Problems are exacerbated by a recent geographic split among office staff, and the staff are still finding ways to work across that split. The white paper concludes with suggestions for dealing with these issues in a more coherent and effective fashion.

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## Introduction
*Knowledge work* is "work in which the primary product is knowledge, information that is continually interpreted and circulated across organizational boundaries" (Spinuzzi, "What"). When studying knowledge work, researchers have tended to focus on management, informatics, and other analytically oriented work done by highly educated professionals. However, knowledge work also characterizes much of the work performed by office staff. Certainly the work of office staff shares many characteristics of knowledge work: it involves near-constant communication within and across organizations; complex horizontal and vertical coordination across fields and organizations; and time and project management at personal and group levels. In addition, office staff often find themselves working across geographic and temporal boundaries, a characteristic of knowledge work (Spinuzzi, "Introduction") and one that turned out to be surprisingly applicable to the present study.

In a previous CWRL white paper, I described some of the characteristics of knowledge work; in this exploratory study, I apply them to an informal study of office work in an academic department. In doing so, I explore whether applying knowledge work characteristics to this office work can generate insights into how the office work is performed and how it can be improved.

In this white paper, I report on a recent small-scale study of work at one academic department, an exploratory study meant to determine whether this work can be productively understood and analyzed as knowledge work. First, I review the literature. Next, I describe the office configuration, history, and environment. I review the study's methods, then analyze the findings. Finally, I provide recommendations for improving this work along the lines of knowledge work and I draw broader conclusions about understanding and analyzing knowledge work.

## Background: What Knowledge Work Is

The term "knowledge work" was coined by Peter Drucker to describe work that primarily involved processing and analyzing information. This sort of work has come under increasing scrutiny in recent years, particularly as traditional sectors such as agriculture and manufacturing have become smaller segments of the economy (Beniger). In a previous white paper, I described knowledge work in this way:

> Knowledge work's primary product is knowledge, which is circulated across and through organizations. Knowledge work tends to be organized in distributed, heterogeneous networks rather than in modular hierarchies such as those Marx described (1990). Whereas modular organization encouraged "silos" with rigid hierarchical separations and few connections, knowledge work encourages proliferating connections across trades, fields, and disciplines, connections across which texts circulate. These connections lead to more flexibility and collaboration within networked organizations, but also more communication problems: workers from historically separated activities suddenly must interact, collaborate, and learn enough of each others' social languages and genres to work together. Complexities become more difficult to manage, and everyone needs to learn a little about everyone else's work.
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> Consequently, workers and managers alike have a difficult time with knowledge work as opposed to modular work. Familiar texts such as organizational charts no longer accurately represent or demarcate actual relationships. Sensible rules (such as strictly regulated contact points across organizational sections) are – necessarily – ignored. Trying to force knowledge work into a modular work configuration tends to sharply reduce agility; once workers are internetworked through phones or computer networks, the traditional modular work configuration decays. Trying to force a modular work configuration by limiting these channels, in many cases, unacceptably constrains the ability to interact and prosper in knowledge work. (Spinuzzi, "What").

In that white paper, I went on to list the following characteristics of knowledge work: rhetoric; time management; project management; adaptability; black-boxing; strategic thinking; training. (For a more developed discussion of these, backed by an extended empirical case, see Spinuzzi, *Net Work*.) Below, I'll collapse some of these characteristics into broader categories in order to investigate them in the current study.

## The Case: An Office Divided

For this investigation, I contacted an academic department and, with the chair's permission, invited the five office staff to participate. The staff, department, and academic institution are kept anonymous in this paper; to protect the privacy of the office staff in this study, I supply only aggregate results rather than individual quotes or anecdotes.

Staff in this office cover a variety of jobs: answering calls to the office, updating the website, updating course lists for upcoming semesters, assigning teachers to classes, managing lists of interns and internships, updating bulletin boards, conducting training sessions, ordering supplies from vendors, supervising a student in the work-study program, submitting vouchers for reimbursement, entering invoices from vendors into the college's administration system, administering the department's budget summary, and pulling together text and photos for college newsletters, among other clerical tasks. These tasks generally involved information processing and analysis, and often involved coordinated work. Two of the staff were part-time instructors as well, and split their time between office and instruction duties (I did not study the instructional aspects of their jobs).

Like most office staff, the staff in this study were expected to communicate frequently with each other and with others: faculty, administrators, students, vendors, etc. The avenues for communication have greatly expanded over the last decade and a half due to the increase in online communication. Beyond those changes, staff are generally expected to manage their time and (in a more limited sense) their ongoing projects, as well as coordinate their work with other collaborators. Several months before the study began, the department split offices between North and South locations, adding some complexity to these existing issues. The two offices are approximately 18 miles apart. The chair and about half of the office staff are at one location.

Most staff have worked in the department for several years and have longstanding relationships. They were used to officing together, mostly in the same building, always on the same campus until recently. They are still connected through now-common communication channels: email, a shared server, phones, and intercampus mail. One also split her time between the two campuses, and often transported documents from one site to another in her handbag.

Staff coordinated with each other, but also with faculty, students, staff outside the department, interns and the employers who seek them, vendors, and others.

I focused on three issues in this study, issues based on the characteristics of knowledge work identified above:

- **Communication**. How do office staff communicate with faculty, students, alumni, and each other? (Based on the characteristics: rhetoric, adaptability)
- **Time and project management**. How do office staff manage their time and projects? (Based on the characteristics: time management, project management)
- **Coordination**. How do office staff coordinate work with collaborators? (Based on the characteristics: black-boxing, strategic thinking)

I omitted the last characteristic, training, because office staff were long-term employees and were not engaged in training during the investigation period.

## Methods

To investigate the case, I gathered data using an informal, exploratory version of contextual inquiry (Beyer & Holtzblatt) and analyzed the data via coding.

**Data collection**. I studied office work in June 2007. On separate days, I visited the five staff members in their offices, following a variation of contextual inquiry methodology to study their work:

- **Observations**. I visited participants at work and conducted short (average 1 hour) observations of their work. During the observations, I noted issues related to the categories above.
- **Interviews**. After the observations, I interview participants for about half an hour each, focusing on these categories. I started by discussing things I observed them doing, then asked further questions about these categories.
- **Artifact collection**. When applicable, I collected copies and photos of any tools they used, texts they wrote, and software they used to perform these activities.

**Data analysis**. Once I collected the data, I transcribed it in ResearchWare's HyperResearch qualitative analysis tool and coded it. Coding was based on a starter list of codes (the knowledge work characteristics above) but also included emergent coding. Based on the preliminary analysis, I developed recommendations.

## Findings

Although the coding began with a starter list of knowledge work characteristics, one emergent concern became central in the analysis: *distributed coping*. The physical separation of the department office into North and South campuses had introduced several changes, and staff were still attempting to deal with the effects. Although some of the communication, time and project management, and coordination issues predated the separation, they tended to be exacerbated by it. Below, I discuss some general changes and how staff had compensated for them, then outline some issues that came out during the study.

**Changes Related to the Separation**

The separation into North and South campuses introduced several changes in how staff communicate with each other:

- **Casual communication and coordination**. Coworkers could not turn around and ask each other about an issue anymore. This meant that coworkers across the two campuses were more difficult to catch and each transaction took slightly longer. It also imposed a barrier to mentorship: If one staff member was expert in a particular system or process, she could not show it to another, she had to describe it on the phone or in email.
- **Persistence on tasks**. Since coworkers were not in immediate contact across campuses, they had some difficulty persuading other staffers to help them. As one told

me: You can't camp out on someone's doorstep, you have to enlist a proxy.
- **Textual circulation**. Paper resources had to be sent via intercampus mail or via handbag (i.e., hand-carried from one campus to another), or converted to electronic resources.
- **Loss of situational awareness**. Some jobs -- such as checking on display boards – could not be done practically because they involve physical resources at two different locations, and had been assigned to personnel who do not go to both locations. Similarly, managing internships involved a single three-ring binder and forms filled out by hand, although the staffers managing the internships were at two different campuses.
- **Alienation**. Four out of five staff reported feeling disconnected from the other location and the staff who work there (see "Problems" below).

Staff have been resourceful in compensating for these changes. For instance,

- Coworkers frequently phoned each other for immediate response to questions.
- Coworkers emailed each other information and small files.
- Coworkers shared larger files through the "Vault," a shared server. (However, they did not do this uniformly: At least one said she did not connect every day, preferring to keep copies on her hard drive.)
- Meetings happened once a month at South location. These tended to be managed top-down by the department's chair.

## Problems in Coping with Changes

Despite the staff's resourcefulness, they encountered several issues related to the separation between campuses.

**Alienation**. Four of the five staff reported finding it more difficult to relate to each other and to faculty across campuses. For instance, one reported not being able to chat regularly with someone she had been used to seeing every day; another reported that she met a new faculty member at a departmental function and was surprised to realized she had never met this instructor before. Of the four, three specifically expressed sadness at not being able to maintain relationships with coworkers and meet new coworkers through regular face-to-face interaction.

**Self-mediation**. Self-mediation -- roughly, the ways that people use to keep themselves on task and solve problems (Spinuzzi, "Modeling", *Tracing*; Zachry & Thralls) -- had apparently never been very uniform across staffers, according to interviews. But with the separation, self-mediation practices had begun to drift, even for tasks that involve sharing and coordinating resources (such as maintaining display boards and maintaining internship records).

**Time and project management**. Staff had developed individual systems for managing their immediate time, including to-do lists, sticky notes, stacks of paper to process, and forms to fill out. Some also used individual systems to plan longer-term projects, such as calendars, and indicated that they relied on cyclical triggers such as the end of the semester to perform certain actions (such as updating class schedules). These individual, idiosyncratic systems did

not seem to be affected by the split in campuses.

On the other hand, long-term project coordination across staff was supported almost entirely through email and monthly staff meetings. But email was too fragmented to provide a unified resource for all staff, while the staff meetings were too transient. Staff did not generally report worries or fears about this situation, focusing instead on immediate tasks. However, the lack of a coordinated clearinghouse for project status appeared to be related in the drifts we see in what systems are being used and in shared understandings of tasks. In particular, paper-based systems such as the internship forms could not be easily shared across locations.

The issue of long-term project coordination was not entirely off the radar for staffers. Two staffers reported that office staff had used an online project management system, 37Signals' Basecamp, on a limited basis for a project the previous semester. However, these staffers were unconvinced of Basecamp's benefits and preferred the combination of emails and meetings.

**Communication**. Although staff differentiated among communicative media -- reporting that the phone was for immediate contact while email was better for longer text and tasks that could be put off, for instance -- the distinctions in media use were not especially coherent or consistent. That is, staff often used communicative media as *alternative* communications channels rather than as *differentiated* ones: Email might be described as better for longer text and less immediate tasks, but staffers still responded to email with phone calls and vice versa. That meant that staff could not consistently predict what sorts of communication were going to come in what media, and could not keep consistent records of how email conversations were resolved.

In addition, staff were not always able to leverage the strengths of particular media. For instance, although email provides the ability to search across email messages, staff looked through individual email messages instead.

Finally, paper was used far more than expected for collaborative tasks. Staff frequently sent paper through intercampus mail. Paper is a good medium for collaborating in the same spatial location, but not for different locations: when the paper is in transit, no one can use it. Staff also tended to print and annotate emails, meaning that the annotated version was bound to a particular place rather than being sharable as the original email message was.

**Summary**

Like other knowledge workers, these office workers had to process and analyze information from diverse sources, often in coordination with others inside and outside their offices. In particular, they had to perform spatially distributed work in response to the new two-campus configuration. Their communication and time and project management strategies, however, had not adapted. In addition, their job responsibilities were divided in such a way as to necessitate frequent collaboration across campuses; for certain tasks, some of them collaborated more frequently with their counterparts across town than with their officemates. This fact exacerbated the problems they were having in adapting their strategies for the two-campus configuration.

Partially because their strategies had not adapted, staff were beginning to feel alienated from

those working at the other location -- not just other staff, but also teachers.

In addition, the way project management had been handled on a single campus, primarily through face-to-face interaction with the chair, was complicated by the division.

## Conclusion and Recommendations

As I have argued above, this staff's office work can be examined in terms of knowledge work. Like knowledge workers on a larger scale, these workers faced challenges in terms of communication, time and project management, and coordination. In particular, they had to adapt to working across new spatial boundaries, and without the frequent collocated work sessions they had previously enjoyed, they had to rely more heavily on communicative technologies and shared tools. At the time of the study, the staff were still working out how to coordinate their work. A particular concern is that of long-term project management, which was still carried out through collocated meetings but was not supported through collocated work in the interim between meetings.

Based on this preliminary analysis, I recommend that the department address the following issues:

### Task and Project Management

I recommend a shared project management system with shared information. But I do not recommend changes in individual task management.

**Shared system**. I recommend that the department use a shared system to handle tasks and communication for collaborative projects. This system should function as a clearinghouse for projects, including defining project objectives, delegating tasks, communicating about tasks, and indicating task status. This system should be used in conjunction with existing ways to manage projects, such as meetings and email; one use could be to store meeting minutes. Possible systems include Basecamp, Wrike, TeamWork Live, and Zoho Projects. But the system itself is not as important as whether staff will adapt it; the chair will need to show strong leadership for the new system to be adapted.

The chair should take the lead in using the system as the primary communication and support medium for collaborative projects.

**Shared information**. I recommend that the department commit to sharing more information about projects so staff can better relate their tasks to long-range project objectives. The division means that face-to-face management is no longer tenable, so staff need more access to project information and they need it in a framework that helps them relate tasks to long-term objectives.

**Limited changes in task management**. Although project management needs to be more highly coordinated, task management does not. For individual daily tasks that don't need to be shared, staff already have their own idiosyncratic systems.

**Communication**

Communication should be regeared to address drifts and specialties.

**Drifts**. Staff have typically not established department-wide types of communication for performing cyclical tasks. Now that the department is spatially split, such communication types are needed.

When possible, I recommend keeping communications online so they are available at both locations. For instance, the department might move the internship records online and establish an intake system so that potential interns do most of their own data entry.

I recommend making stronger distinctions among communication types: the department should establish formal or semiformal text types (such as forms and lists) so that staff can more easily locate and search particular types of information.

Finally, I recommend that staff route electronic communication through a shared system (e.g., a project management system) when possible so that communication relevant to a project is available to all in that project. This should reduce redundant communication and search time for old information.

**Specialties**. Staff have particular skills and jobs, but these staff have not been grouped by specialty. Consequently, staff must frequently communicate electronically and have less chance to pool their expertise.

When possible, the department should group general functions at one location. If two staff members collaborate closely on an ongoing project, the department should look at the feasibility of having them work at the same campus.

On the other hand, location-specific functions should be split across campuses. For instance, during the study it emerged that one person had been tasked to update both campus' display boards and collateral. The department should establish someone on each campus to take care of that campus' display boards and other collateral.

**Training**

Although the study did not examine training, the above recommendations imply new training procedures.

**Mentorship**. The first is to establish mentorship for any new systems. The department should assign one person to become an expert, then clearly establish that person's role as mentor or "guru" for the system. Such mentorship schemes work well for small groups (Nardi & O'Day), although they generally do not scale well (Spinuzzi, *Net Work*).

**Searching**. The second is to train all staffers in electronic searches. For instance, during the study, workers frequently scrolled through their email messages rather than using the built-in search function. Targeted training would allow staffers to find information more quickly and

easily.

**Leadership**. The Chair must take the lead in using any new system.

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