

The Iterative Design of a Project Charter for Interdisciplinary Research

Stan Ruecker

Assistant Professor
Humanities Computing Program
Department of English & Film Studies
3-5 Humanities Centre
University of Alberta
Edmonton AB T6G 2E5 CANADA
email: sruecker@ualberta.ca
www.ualberta.ca/~sruecker

Milena Radzikowska

Instructor
Electronic Publishing Program
Centre for Communication Studies
4825 Mount Royal Gate SW
Calgary AB T3E 6K6 CANADA
email: mradzikowska@mtroyal.ca

ABSTRACT

This paper describes our experience with the iterative development and use of a project charter for helping to manage expectations of the various members of interdisciplinary research teams. Some of our team members may be working with other researchers for the first time, and many of them have not worked previously with researchers from other disciplines. The charter is based on the need to explicitly discuss principles and policies of research practice with people from different disciplines at the start of the project, and to have a common agreement to refer to if necessary during the project. Our current template contains the following principles:

- We are interested in disseminating the results of this project as widely as possible, with credit to us for doing it.
- We intend this work to move forward at a steady pace, given due awareness of the vagaries of life.
- We would prefer for this work to be funded.
- We understand that the work we do on this project may have future phases. Modifications and additions may be made to further the project by other members.
- We wish to communicate in such a way as to preserve professional dignity.
- We would like to foster goodwill among all the participants.

Although these seem on the surface like motherhood statements that would go without saying, in practical terms these principles, and the longer list of policies that emerge from them, are actually the basis of fundamental misunderstandings between disciplines.

Categories and Subject Descriptors

H.1.m [Information Systems]: Miscellaneous

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

Conference '04, Month 1–2, 2004, City, State, Country.
Copyright 2004 ACM 1-58113-000-0/00/0004...\$5.00.

General Terms

Design. Management.

Keywords

Computer-Human Interaction, Interface Design, Interdisciplinarity, Team management

1. INTRODUCTION

It has become increasingly common to hear people speak highly of collaborative research. As Hara et al. (2003) point out, collaboration can be a critical component for success, especially in cases where people are tackling complex, real-world problems. The traditional academic emphasis on specialization combined with the related wealth of research publication means that individual researchers are not able to do everything needed to make significant contributions. This reality is slowly working its way into the research infrastructure, in the form of new and better funding programs. In Canada, for example, the Social Sciences and Humanities Research Council has for some time awarded one or two Major Collaborative Research Initiative grants each year, and has recently announced a new funding program intended to help Canadians to lead and participate in international collaborative research projects (SSHRC, 2007).

In this paper, we outline the lessons we have learned over the past five years in carrying out approximately 30 interdisciplinary design research projects. Many of these projects are in the area of humanities visualization (Ruecker 2006); most are still ongoing. Humanities visualization typically involves experimental interface designs that show complex displays and tools for dealing with digital collections of texts or images. Our research is often intensely interdisciplinary, with no two members of a project sharing a common disciplinary background. We have worked so far with colleagues in approximately a dozen disciplines, including computer science, psychology, humanities computing, sociology, visual communication design, city planning, political science, pharmacy, communications studies, English literature, library and information studies, and chemical and materials engineering. Our research projects have ranged from teams of three or four local members (www.humviz.org) to as many as fifty researchers at seven universities (www.monkproject.org). Some of our people come from well-established research disciplines with clearly-defined expectations (e.g. Psychology), while others are from emerging disciplines where traditions for research methods and dissemination of results are not yet firmly established (e.g. visual communication design). Both kinds of researchers constitute a challenge for design research teams, and experience has taught us that it is a useful practice to make all expectations as explicit as possible.

In 2005, we began iteratively designing a project charter that spells out the principles under which we operate, as well as the specific policies that are related to each principle. We typically introduce the charter individually to new team members as they are recruited, or else within the first meeting or two of the entire team, then refer to it subsequently as team issues come to light. We propose to discuss this evolving charter template in the context of our research experiences, in the hope of making the results of these experiences available in a useful form for the larger design research community.

2. RELATED WORK

There are varying research traditions in the academy. Speaking in broad generalizations that do not always apply, some disciplines, particularly in the humanities, have tended to expect work to be done by a lone scholar, working within a tradition, presenting results to a scholarly community, and training graduate students who will also work alone. Other disciplines, particularly in the sciences and engineering, have adopted instead an apprenticeship model, where a senior scholar manages a lab where junior scholars work. A third model is one in which groups of established scholars work together. They might share a specialized background, or more typically a disciplinary one. This discipline-based model capitalizes on the benefits of specialization – specialist scholars refine theories, methods, and technologies particular to their disciplines (Seipel, 2005).

Interdisciplinary research models build on the strengths of the third, discipline-based model. We define interdisciplinary research as combining two or more academic disciplines that are usually considered distinct in order to reach a common goal. The concept has been further articulated as unidisciplinarity (Hobson, nd), multidisciplinary (Wilson & Pirrie, 2000), or pluridisciplinarity (Sillitoe, 2004), depending on the ways in which the teams functionally interact. We have teams that fall into each of these categories depending on the nature of the project, the experience of the people on the project, and their willingness, need and ability to work together. For example, in our project on interfaces for visualization of simplex decision support systems, the mathematical modeling is handled in a unidisciplinary manner by the project engineers, while the interface design is similarly carried out by a relatively isolated team of designers. In contrast, our project on developing a rich prospect interface for pill identification involved designers, programmers, and information specialists working together at the same table over an extended period, providing each other with relevant literature and insights that crossed disciplinary boundaries.

Genuinely interdisciplinary work is valuable for several reasons. First, it is possible to tackle problems in an interdisciplinary project that could not be dealt with in any adequate way by a single researcher working in the confines of one discipline. As Sillitoe (2004) explains when discussing his interdisciplinary work on poverty, complex research problems often require the cooperation between specialists with diverse backgrounds, in his case, in both the natural and social sciences. Second, the projects themselves can be remarkably fruitful to the researchers involved.

However, although the benefits of interdisciplinary work are significant, it does not come without problems and challenges. To begin with, some disciplines are more open towards interdisciplinary work than others. Therefore, when forming a team, we have had to become conscious that not everyone may have had previous experience working in such a manner. As it often occurs on our projects, some team members come to the table unaware of the methods and processes inherent in each other's research practice. A form of artful integration (Schuler & Clement, 2004) is needed – a careful weaving of complementary researchers, methodologies, and practices. In our experience, a project that is made up of a team of researchers who are unknown to one another is particularly challenging. The start of a project does not allow enough time for everyone to become adequately acquainted. By the end of the project, however, our team members seem to gain a

substantial awareness of each other's value, particularly if they worked in a pluridisciplinary manner. This knowledge is of great advantage on subsequent projects.

Another challenge occurs when a project begins to go astray. This can occur for a number of reasons, and, as the literature reports, it can take weeks or even months before all of the team members are aware of what has happened (Keil et al., 2004).

Interdisciplinary research requires a combination of new sets of skills and accommodation of other team members in a number of areas where accommodation may not otherwise have been necessary. Hara et al., (2003) outline the following factors impacting collaboration:

- Compatibility
- Work style
- Writing style
- Work priority
- Work Connections
- Incentives
- Socio-Technical Infrastructure
- Other forms of compatibility (Hara et al., 2003)

In the context of advice for people undertaking interdisciplinary work for the first time, Svensson (2003) has a list of strategies:

- open yourself up to neighboring fields
- map the relevant conceptual territory
- be prepared to find unexpected connections
- communicate with people unlike yourself

- think across boundaries
- make sure to introduce interdisciplinary strategies early in the process (Svensson 2003)

In addition to interpersonal management strategies, several technological solutions for project management have been developed and subsequently adapted to interdisciplinary research management. Microsoft Project Management and the online Basecamp are two popular examples. Research continues in this area with projects such as Zhang et al. (2007), who designed and implemented a research prototype called ACPM (Activity Centric Project Management). The goal of the system is to make collaborative activities flexible and easier to manage. Their findings indicate that an activity-centred approach could be used to integrate tasks and activities, provide timely activity reports, generate status reports, and allow third-party access to the information, thus helping to manage collaboration.

Finally, no interdisciplinary research project can be expected to succeed unless it has contributions from good team members: "The most important features of project-relevant skills and knowledge appear to be diversity and complementarity in the skills, perspectives, and knowledge of team members" (Amabile et al, 2001). As one of our colleagues recently put it during a presentation with seven authors (Wynne et al. 2007), on a good interdisciplinary project, each team member is uniquely valuable – no one is expected to compromise his or her own expertise. Across its various incarnations, the interface design she was discussing has involved expertise from five disciplines: psychology, humanities computing, computer science, visual communication design, and library and information studies (see Figure 1).



Figure 1. This image browser was originally designed by a team working on pill identification (Given, Ruecker, Ruskin, Plouffe, Simpson, and Sadler). It was subsequently repurposed as a system for helping conference delegates manage social capital (Ruecker, Lewcio, Plouffe, and Wynne), and in this third version, it has been adapted to help answer some questions raised by the statistical analysis of crayon pictures drawn by elementary school children (Wynne, Ruecker, Nelson, Albakry, Strong, Lewcio, and Plouffe

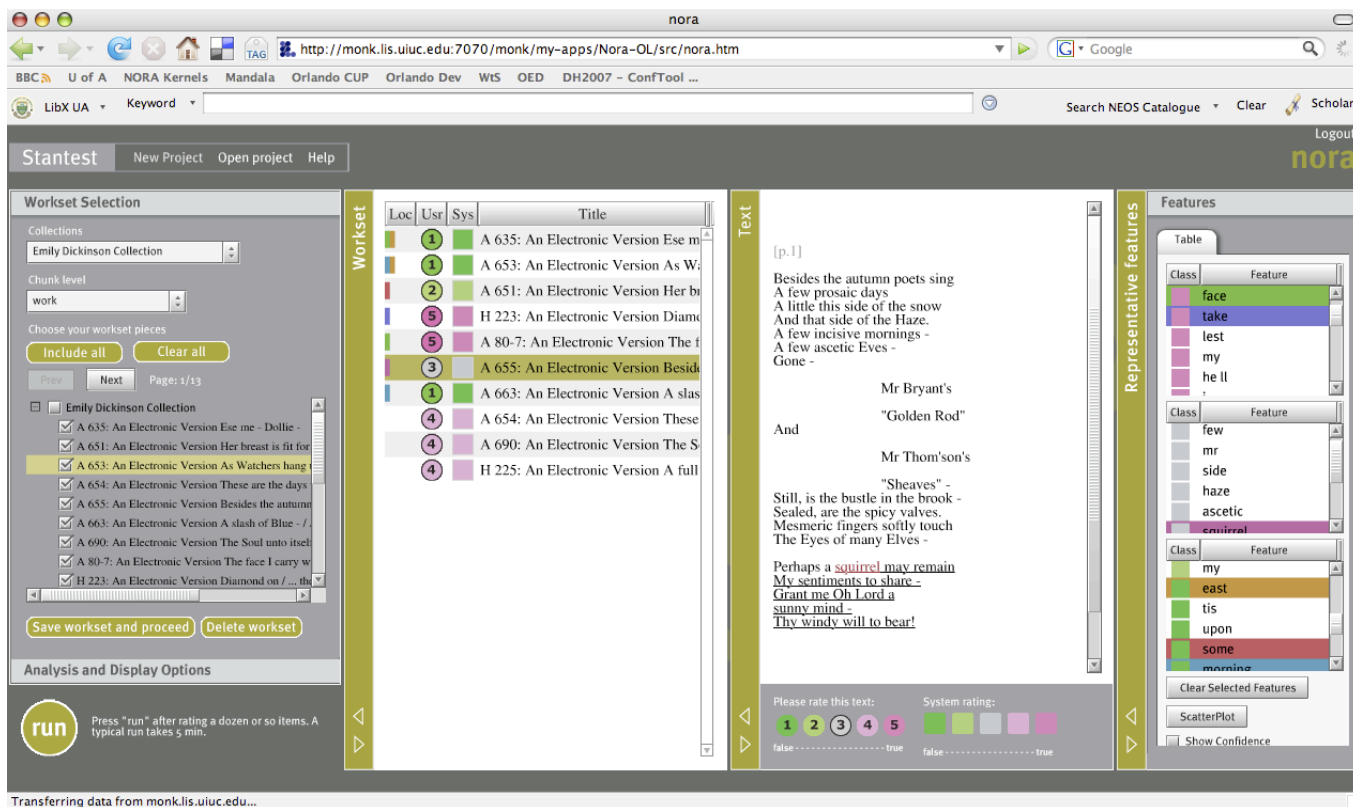


Figure 2. Sometimes a larger interdisciplinary research project will contain components that are complex enough to require the collaboration of several people from a single domain. In NORA (short for No One Remembers Acronyms) we were attempting to repurpose for literary scholars the D2K datamining system at the National Center for Supercomputing Applications. At least four designers worked on the various interfaces, including this one that appears in the final online demo (www.noraproject.org).

3. TEAM MANAGEMENT

"If you let go of your own agenda when coming to the table made up of an interdisciplinary team, more creative "stuff" tends to emerge. you take true advantage of the interdisciplinary team by not trying to force your own set of values or processes onto them. and, as you've experienced, forcing it doesn't work anyway – they rebel. with interdisciplinary design research you can ask even larger questions, and when you allow those teams to do their own thing, even more creative and unexpected outcomes occur" (Zimmerman, 2003).

Our typical research team involves 3-5 researchers, each of whom sits in a different disciplinary chair. It will occasionally happen that a project requires, for instance, four designers (see Figure 2), but most projects will have a designer, a computer programmer or two, a domain expert, and a project manager.

In the standard military model of organization, there would be a hierarchy, where the manager would determine what was going to be accomplished, then divide the work among the others. This form of delegation is not viable for interdisciplinary research, where there are usually no clear lines of reporting that can be used to enforce authority. In different projects the various roles might be filled by colleagues at approximately equal points in their career trajectory,

or there may be senior colleagues with junior colleagues, full professors with graduate or undergraduate students, industry partners, faculty members from different departments, and so on.

Under these conditions, delegation from a single authority is problematic, because there is no single authority. It is therefore useful to treat the team members as equals, and to attempt to foster a genuinely collaborative management environment rather than adopt a fiction of central control and delegation.

The decision to work collaboratively has significant implications for the direction the project will take. In fact, we have noticed that everything about a project would be different if there were a different person in any of the chairs. Since each chair represents a specialization, the decisions made by each participant will directly influence the way the project proceeds. In general, we typically have a goal for the project before the team is assembled. However, all of the strategic decisions about content, platform, visual language, protocols for user study, and so on are determined by the team members.

This policy on strategic decision-making is an example of the iterative nature of our ongoing Project Charter design process. We only slowly came to the realization that it was a good idea to have our research colleagues determine the project strategy, having noticed that our setting both a goal and a corresponding strategy

was inevitably leading after the first few meetings to a point of rebellion, where one or more of the participants would propose an alternative strategy to the one being discussed. It became clear that this key moment in the process was one where additional commitment and motivation was being generated, and we began to start projects without the initial strategy, recognizing that it would be discarded in any case. We wondered at first if discarding the initial strategy was an essential part of creating motivation, but when we removed that step, we found that the moment where participant enthusiasm was generated simply arrived two or three meetings earlier.

Another example of the iterative development of the charter is the policy on dissemination. We originally were concerned only with presentation at conferences and publication in academic journals, and the policies dealt with the issue of co-authorship. Over time, however, it became plain that we were also tending to adopt online methods of disseminating our work, including web sites, blogs, and wikis, and we added a policy so that this form of dissemination would become part of our early discussions.

Based on these experiences we have come to our own pragmatic understanding of Sillitoe's comment (2004) that interdisciplinary team management is a balancing act between respecting the needs and perspectives of individual researchers on the team and the canons of their disciplines, and supporting the goals of the project.

4. THE PROJECT CHARTER

The current form of the project charter contains six major sections, which correspond to the principles under which we carry out our projects. For each principle, there are a number of policies that address specific questions of interpretation. The six principles deal respectively with dissemination, deadlines, funding, future phases, professional dignity, and goodwill. We do not consider this to be an exhaustive list of principles – it is simply the list we have iteratively developed so far, based on our experiments in project management. This charter is currently on its 14th iteration.

4.1 Dissemination

Principle: We are interested in disseminating the results of this project as widely as possible, with credit to us for doing it.

The principle of dissemination may at first glance appear unnecessary, since academics place a high premium on publication. However, for colleagues in the fine arts, publication is not necessarily as important as exhibitions or gallery shows. For colleagues in English Departments, the highest form of publication is the book. For colleagues in Computer Science Departments, conference proceedings are more important than books, because the book is generally considered an archival record of past research, whereas conferences are at the cutting edge. In Humanities Computing, the conferences are often based on abstracts only, rather than full papers; the result is that presentation at even the most venerable Humanities Computing conference is not usually beneficial for Computer Scientists.

In addition to the disciplinary variations in evaluating publication venues, there are also cases where colleagues on a research project are from industry. In these situations, especially if there has been a monetary contribution from the industry partner, it is very important to agree at an early stage about what can be published and when. For colleagues in areas where intellectual property can be valuable,

it may also be important to have patent applications in place before results are published to the academic community. Fortunately, interface designs are generally not patentable, which reduces the anxiety somewhat in our field.

Policy: Project members may use any of it as examples in presentations, papers, interviews, and other media opportunities. They may post any of it to their web sites. Wherever possible, they should mention the names of the other project members who were directly involved, as well as the name of the project.

There are many occasions where it is possible to mention a project. This policy encourages our team members to mention our work, even in cases where it is not reasonable to provide a co-authorship credit to every team member. Since the principle is to disseminate our results, these occasional descriptions can have a very beneficial effect. In this paper, for example, we have on principle, and perhaps somewhat gratuitously, included the names of the researchers in the figure captions.

Policy: The project team will maintain a collaborative project web site, which will contain links to all the presentations and publications of the group.

The web is a convenient place for team members to access and to point at whenever someone is interested in our projects. However, setting up and maintaining a web presence is a service load on the project, and needs to be explicitly endorsed or it can easily slip through the cracks. Examples of project sites related to our work include <http://humviz.org>, www.noraproject.org, www.hci-book.org/cluster/, and www.monkproject.org.

Policy: For presentations or papers where this work is the main topic, all team members who worked directly on this subproject should be co-authors. Any member can elect at any time not to be listed, but may not veto publication.

The policy on co-authorship can result in papers with quite a few authors. We now typically have 3-5 authors on every paper, and our longest list so far includes 7 authors. Multi-authored papers are commonplace in the sciences but still relatively rare in the humanities. In any case, they are a good opportunity for junior colleagues to present and publish. However, on one of our larger projects, we have a team of over 25 faculty members, not including postdocs and graduate students. We have deliberately planned the project so that the work will be tightly integrated, which will make the choice of co-authors very difficult. For that project, we have modified this policy to provide for individually naming the first three authors, then listing the name of the research group as the fourth author. The members of the group can then be listed in a footnote.

Policy: For presentations or papers that spin off from this work, only those members directly involved need to be listed as co-authors. The others should be mentioned if possible in the acknowledgments, credits, or article citations.

The goal here is to provide a reasonable way to balance the benefit of co-authorship with the possible growth in the numbers of co-authors that begins to reduce that benefit. By suggesting when acknowledgment or citation is appropriate, the policy provides a useful approach to promoting our work without overwhelming the author credits.

4.2 Deadlines

Principle: We intend this work to move forward at a steady pace, given due awareness of the vagaries of life.

Deadlines are important to the success of a project, but a positive ongoing relationship between the researchers is also important. It is therefore useful to acknowledge that deadlines are important, but that a steady forward pace is really what is required.

Policy: project members will make every effort to attend meetings as arranged and to keep in regular contact by email or other electronic means. Frequent absence may result in being warned, then cautioned, then asked to leave the team.

Communication is distinct from the timelines of a project, and people have to be among those present in order to communicate. We generally assume that on interdisciplinary research projects, it is a fundamental fact that people will vote with their feet, and decisions will be made and enacted by the people who are present. However, we also recognize that not everyone can be present all the time. At key points in some projects, when deadlines are tight, we have supplemented this policy with another provisional one, that specifies turnaround time on decisions. Under these unusual conditions, people who do not respond within 24 hours, for instance, are assumed to consent.

Policy: Project members will jointly establish and attempt to meet self-imposed deadlines, in part through providing the project administrator with lists of commitments, so that reminders will be sent out as a matter of routine.

It is not always possible for projects to have an official administrator, and it is a bit of a luxury when they do. However, the strategy of explicitly notifying the other team members of commitments and deadlines can help keep a project moving forward. However, the spirit of this policy needs to be read in the context of the larger principle that allows for the vagaries of life.

This policy is also an example of the iterative development of the charter, which sometimes requires revision to existing policies to accommodate new circumstances. The original form dealt only with self-imposed deadlines, but when we had the opportunity to hire a project administrator, we added the second clause. Although this may seem like a comparatively minor change in wording, in practice it is a significantly different approach to handling communication about deadlines.

Policy: In the event the task is overdue by a considerable amount of time (for instance, whichever is lesser—two months, or double the original timeframe), other members may at their discretion notify the offender that the task will be re-assigned, without prejudice to the constitution of the team or the public credit of any member.

Even given the vagaries of life, it is sometimes the case that a team member simply does not meet deadlines. It is important to be able to re-assign the tasks undertaken by such a person, although it is also worth trying to figure out if there are useful tasks that do not require the person to meet a deadline. There are often tasks that just need to be completed at some point during the process. Examples include writing sections of text for the web site or blog, coming up with interesting titles for presentations and papers, carrying out literature reviews and writing up the results, and starting on the next grant proposal.

This policy is another instance where the charter has varied from project to project. On one of the major international projects, the

need to co-ordinate efforts between teams meant that a deadline slipped by two months would be too much, and we not only shortened the duration in the policy, but also wrote the project plan to include monthly updates from the team leaders.

Policy: Project phases will be arranged so as to minimize the need for sequential completion of one phase before another can begin: wherever possible, phases will run in parallel, with communication occurring between people as they work on each phase, rather than waiting to communicate until the end.

Of all the policies dealing with timelines, this one is perhaps the most important. Projects occur over time, which means that they will go through phases. But on an interdisciplinary project, it is a fundamental error to require one group of researchers to wait on output from another group before they can begin. It is one thing to fall behind because your own work is going slower than you'd planned. It is quite another experience to be waiting for months or even years for someone else to give you what you need to start your work.

4.3 Funding

Principle: We would prefer for this work to be funded.

Since funding is often quite competitive and is in many cases coupled to the primary research objectives of the principal investigator, it is not always possible to secure research funds for interdisciplinary projects. We have several projects that are being carried out by groups of volunteer researchers who happen to share a common interest. However, in each of these cases we would be able to make faster progress and also provide rewards if some funding could be secured. This principle lets the researchers know that it isn't necessarily neglect that has resulted in a project moving ahead without funding, and that we will do our best to secure funding when we can. At that point, there are additional management considerations, since most agencies will not retroactively fund researchers who have been working as volunteers. One possibility is therefore to use conference travel as a reward that is not retroactive but nonetheless relies on the work having moved ahead to the point where it is ready to present.

Policy: Project members will watch for and notify each other of funding opportunities and participate wherever possible in the writing of appropriate grant proposals.

Given the realities of competitive funding and small pots of money in various locations, academic research can quickly become a never-ending process of writing research grants, some of which can be quite time-consuming. Perhaps not surprisingly, the size of the award does not usually correlate in any meaningful way with the amount of work involved in applying for it. Getting help from other team members in grant writing can strengthen relationships, serve as a learning experience for junior colleagues, and also be used as an early phase in collaborative project planning.

4.4 Future phases

Principle: We understand that the work we do on this project may have future phases. Modifications and additions may be made to further the project by other members.

People realize that research has phases that will occur over time. They also know that they may lose interest in the project, or find other projects that are more interesting, or move on to other kinds of

work instead of research. However, it is important to have the principle in place so that team members have a chance to acknowledge to themselves that the project may not end with the end of their participation.

Policy: In addition to PDFs or other formats for presentation, project members will keep safe and distribute regularly all native files generated for the project: Photoshop, Illustrator, Flash, InDesign, and any other data files or source files. These files will be unflattened and editable. Where copyright restrictions do not apply, fonts should also be included in shared files.

Designers and computer programmers are two groups that are particularly prone to the desire to hold onto their original files and not provide working copies to others. There are a variety of rationales for this undesirable behavior that all make sense, however, the next policy on this list seems to have made a significant difference in our ability to pry the source files loose from their cold, dead hands.

Policy: As projects progress to new phases, each team member will have the right of first choice over whether or not to continue with the project.

One of the possibilities that can arise in interdisciplinary research is that people decide they would prefer not to work together again. However, if these decisions are too unilateral or too arbitrary, they can poison the communication with worry. After we stated that people can opt out of future phases, but not be fired without consultation, we suddenly found that many of the reasons for not providing source files simply disappeared.

Policy: Insofar as ethics clearances allow, data backup will be provided through central project servers. Local projects should also make provisions for regular backup of all project files, including versions of files in progress.

Computer scientists are often quite good at managing files on a central server, with version control systems and task assignments that can be tracked toward completion and so on. Other researchers do not necessarily have experience with these kinds of systems, and need to be introduced to the idea that the project archives should be a regular part of the document flow.

4.5 Professional dignity

Principle: We wish to communicate in such a way as to preserve professional dignity.

Human beings like to gossip about each other. They like to complain behind each other's backs. Researchers are human beings, and in these respects no different from other people. By stating the principle of professional dignity, we hope to encourage each other to remember that we are working with others who have a professional standing and who deserve respect as colleagues. When tempers flare or pressures are felt, this principle can make a significant difference both in how the situation is discussed and in the eventual outcome.

We had an example of needing explicit reference to this principle in a case where we had a disagreement about the leadership of a subcomponent of one of the projects. The principal investigator and a team leader were not able to successfully negotiate a series of tight deadlines, and a change in team leadership was necessary. The PI had received a number of offline communications from other team

members, and by explicitly invoking this principle and its policies, we were able to change the team leadership and still keep a good working relationship with the previous leader, who remained on the team.

Policy: We will strive to maintain a tone of mutual respect whenever we write or meet, and to forgive lapses if they occur.

Like professional dignity, mutual respect may be a hard concept to pin down, but it is relatively straightforward to identify when people are experiencing a lack of it. As with the other charter policies, mutual respect is a best practice we hope to maintain, although in this case we also acknowledge that there may be lapses that will need to be adjusted if they occur.

Policy: We will attempt to keep communications transparent, for example, by copying everyone involved in any given discussion, and by directly addressing with each other any questions or concerns that may arise.

This policy of transparency is another simplifying strategy. If too much back-channel discussion takes place, it can become very difficult for everyone to understand what decisions are being made and why, especially on a geographically distributed team. It is also disturbing to see your name appear in an email thread that never arrived in your inbox, so we feel it is better to err on the side of receiving too many messages and having the problem of sifting through them, rather than dividing the communication between groups. On a typical large research project, we will expect to receive about 2000 project-related email messages per year.

4.6 Goodwill

Principle: We would like to foster goodwill among all the participants.

Enthusiasm and good nature are very beneficial in interdisciplinary research. Situations will inevitably arise where participants will be working under pressure or undertaking tasks that are not congenial. Fostering goodwill can help make the difference, but it requires attention and commitment. As Bennett and Kidwell (2001) point out, interdisciplinary research teams are a form of self-designing work group. Researchers working in this manner always have the possibility to choose whether or not to make an active effort or to withhold effort. Withholding effort can have the consequence of people choosing not to work together again; withholding effort is also often done for emotional reasons involving the relationships between researchers:

“...withholding effort occurs in self-designing groups, such as research collaborations, and that the emotional bonds that group members form with colleagues play a key role in whether they decide to work together again, as well as in how they react to perceptions that a coauthor withheld effort” (Bennett and Kidwell 2001)

Policy: In making financial decisions, we will attempt to allocate resources in ways that indicate commitment to each of the people on the team.

Disputes over the division of financial and other resources can torpedo a project. A colleague who has served as Department Chair once described a choice he made that resulted in a successful and comparatively uncontested allocation of offices. His strategy was to

explain a simple principle that incidentally resulted in him getting the smallest office. Disputes subsequently just didn't seem to arise.

Policy: Members will also watch for and notify each other of opportunities for commercialization and licensing. Any commercial agreements or plans will be made so as to include and equally benefit all members of the group.

It is not often the case that commercial benefits are a possibility, but in some disciplines it is becoming increasingly common to explicitly address the issue. How this policy may play out in actual fact remains to be seen, since none of our projects have yet gone on to commercialization. But we currently have three projects that have some potential.

Policy: We will strive to be a group working toward different parts of a larger, coherent and important whole – one that promises to exceed the sum of its parts.

As with many of our policies, this one might well go without saying. Yet by articulating it as a policy at the beginning of the process, we are able to encourage the participants to watch for opportunities to do more together than they are able to do alone. For those participants who are used to relying on their own resources in a research project, the thought of allowing others to be responsible for some parts of the work does not necessarily come naturally.

5. HACKFESTS

In addition to being interdisciplinary, many of our project teams are also inter-institutional, inter-provincial, and international. Canada is a big country, and an inter-provincial project can involve researchers who are thousands of kilometers apart. We make use on different projects of all the various technologies that are available for meeting at a distance, including project wikis, blogs, web sites, collaborative online writing tools, Skype, text chats, conference calls, video conferences, listservs, and email. In a couple of projects, we've recently added an online project management system, a software version tracker, and a variety of task assignment tools. These technologies allow us to keep the projects moving forward. However, we've found that for periodic leaps forward, it is very useful to collect a group of team members into one location and have them work together for a few days in the same room.

We came across the idea in an anecdote by a colleague, who described going once to a resort hotel with a friend where the two of them sat together over a long weekend and co-authored a paper. Our colleague described it as a very positive experience, so we determined to see if it would work for us. We have now been meeting quarterly for the past eighteen months in order to work this way. We typically rent cluster housing on campus, where four of us can stay in rooms and share a common working space, or else we take hotel rooms in the same hotel and commandeer one of the public areas. Everyone brings a laptop, and we have multiple people from each role present, so there might be two or three designers, two or three programmers, a couple of content experts, and a manager or two. Our experience suggests that it is useful to have anywhere from 3-5 people. We've tried gathering as few as two, but it is not always possible to get sufficient momentum going. We've also collected together as many as a dozen, but they subsequently broke into three subgroups.

The purpose of these hackfests is not primarily to hold meetings, but instead to work together in the same place, where other team members are available for consultation.

6. CONCLUSIONS & FUTURE RESEARCH

The charter and our related interdisciplinary management strategies have been developed not only by studying the management literature, but also through a process of trial and error on a variety of active research projects. We plan in future to carry out interviews with team members to see if their experience as they report it has any correlation to what we believe is going on in these projects.

We are also always on the lookout for additional items to include. Rockwell (2007), for instance, pointed out the benefit of explicitly planning for the end of a project, which allows, among other things, for archiving the materials. Early planning can also result in the creation of an archival record, not only of the research results, but also of the research process. Rockwell's advice is to try to save the recipe rather than the cake, since technology changes quickly, and the cake often goes stale. We currently have no principles or policies related to either project archiving or project closure, despite the fact that some of our research funding agencies explicitly request that such archives be created.

We also have additional improvements to make in our quality assurance methods. For example, Cuneo (2003) recommends enlisting the help of outside consultants as adjudicators. To this point, we have relied instead on the reaction of the academic community, but we recognize that more could be done earlier in the process.

7. ACKNOWLEDGEMENTS

The authors wish to thank the following organizations for their research support: the Social Sciences and Humanities Research Council of Canada, the Natural Sciences and Engineering Research Council of Canada, the Harriet Winspear Foundation, the Killam Trust, the Andrew W. Mellon Foundation, the University of Alberta, and Mount Royal College. We would also like to thank Lynne Siemens, who introduced us to the idea of the project charter in her course in Large Project Management at the Digital Humanities Summer Institute at the University of Victoria.

8. REFERENCES

- [1] Hara, N., Solomon, P., Kim, S.-L. & Sonnenwald, D. H. (2003) An Emerging View of Scientific Collaboration: Scientists' Perspectives on Collaboration and Factors that Impact Collaboration. *Journal of the American Society for Information Science and Technology*. 54(10), 952-965.
- [2] SSHRC (Social Sciences and Humanities Research Council of Canada). (2007). International Collaboration. Retrieved June 30, 2007 from http://www.sshrc.ca/web/whatsnew/initiatives/international/index_e.asp.
- [3] Ruecker, S. (2006). "Experimental Interfaces Involving Visual Grouping During Browsing." *Partnership: the Canadian Journal of Library and Information Practice and Research*. 1(1).

- [4] Radzikowska, M., Ruecker, S., Fiorentino, C., and Michura, P. (2007). The Novel as Slot Machine. Paper presented at the Society for Digital Humanities (SDH/SEMI) conference. University of Saskatchewan, Saskatoon. May 28-30, 2007.
- [5] Svensson, P. (2003). Interdisciplinary Design Research. In B. Laurel (Ed.), *Design Research: Methods and Perspectives* (193-200). Cambridge, Mass.: MIT Press.
- [6] Amabile, T. M., Patterson, C., Mueller, J., Wojcik, T., Odomirok, P. W., Marsh, M. & Kramer, S. J. (2001). Academic-Practitioner Collaboration in Management Research: A Case of Cross-Profession Collaboration. *Academy of Management Journal*, 44(2), 418-431.
- [7] Wynne, S., Ruecker, S., Nelson, T.M., Albakry, W., Strong, M., Lewcio, M., and Plouffe, M. (2007). The rich prospect of tension, affiliation and reward: from social capital to image analysis. Paper presented at the Society for Digital Humanities (SDH/SEMI) conference. University of Saskatchewan, Saskatoon. May 28-30, 2007.
- [8] Zimmerman, E. (2003). Play as Research: The iterative design process. In B. Laurel (Ed.), *Design Research: Methods and Perspectives* (176-184). Cambridge, Mass.: MIT Press.
- [9] Bennett, N. & Kidwell Jr., R. E. (2001). The Provision of Effort in Self-Designing Work Groups: The Case of Collaborative Research. *Small Group Research*, 32(6), 727-744.
- [10] Rockwell, G. and Johnson, N. (2007). The Globalization Compendium: Reflecting on Contemporary Research and Online Publication. Paper presented at the Society for Digital Humanities (SDH/SEMI) conference. University of Saskatchewan, Saskatoon. May 28-30, 2007.
- [11] Cuneo, C. (2003). Interdisciplinary Teams - Let's Make Them Work. *University Affairs*. 1(1).
- [12] Sillitoe, P. Interdisciplinary Experiences: Working with Indigenous Knowledge in Development. *Interdisciplinary Science Reviews*, 29,1, (March 2004), 6-23.
- [13] Schuler, D. & Clement, A. (2004). Artful integration and participatory design: Preface to the proceedings of PDC 2004. In Clement, A., van den Besselaar, P. (Eds.), *Proceedings of the Eighth Conference on Participatory Design* (1st ed., pp. v-vi). New York, NY: ACM Press.
- [14] Hobson, S. (nd) *Case Studies in Gerontology for the Applied Health Sciences*. Retrieved July 17, 2007, from <http://publish.uwo.ca/~shobson/models.html>
- [15] Wilson, V and Pirrie, A. (2000). Multidisciplinary Teamworking Indicators of Good Practice. *The Scottish Council for Research in Education Research Report*, 77.
- [16] Zhang, S., Zhao, C., Zhang, Q, Su, H., Guo, H., Cui, J., Pan, Y. and Moody, P. (2007). Managing Collaborative Activities in Project Management. Proceedings of the 2007 symposium on Computer Human Interaction for the Management of Information Technology (CHIMIT '07). March 30-31, 2007.
- [17] Seipel, M. (2005). Interdisciplinarity: An Introduction. Retrieved July 22, 2007, from <http://www2.truman.edu/~mseipel/>
- [18] Keil, M., Smith, J., Pawlowski, S. and Jin, L. (2004). Why Didn't Somebody Tell Me?: Climate, information asymmetry, and bad news about troubled projects. *ACM SIGMIS Database*, 35(2), 65-84.