Like Topsy, It Just Grew: Students and Staff Make a Collaborative Documentation Project Work

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Abstract

Our paper tells the tale of the ADDOC Team which sprang to life four years ago, the product of perceived needs and fertile imaginations. Today, the team resembles the original group in dynamic energy and dedication to purpose. Much has changed, however, and this paper attempts to explain both the changes and the reasons for them.

Our Story Has Three Parts

Part 1: The Big Idea: Introduces the original idea and how it has been revised by our review and revision, and by situational changes. We pay homage to the future by pointing to our next steps.

Part 2: The Experience: Tells the *people* side of the story. Each author, in their own words, covers the story from the beginning, from the middle, from the present, and from the group leader's long view. We pay special attention to our most effective tool for promoting collaboration: the pride of ownership, both from point of view of the Subject Matter Experts and from the team perspective.

Part 3: The Conclusions: Summarizes our conclusions about how collaboration really works (most of the time...), while describing both the costs and the profits (or benefits) of the ADDOC process. A final word from the group leader closes out this tale of our adventures in technical writing and editing.

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The text is liberally sprinkled with individual comments and observations by the authors, reflecting the very personal dimensions of this process.

Part 1: The Big Idea

Introduction: The Original Idea, Revised

January 1992 seems a lifetime ago. An assignment to develop a style guide for documentation that staff members were too busy to write blossomed into An Interactive Online Process for Developing and Producing Policy and Procedure Documentation (a paper Mick McKellar presented at SIGDOC'93). The ADministrative DOCumentation (ADDOC) project has been a resounding success that transformed itself into something radically different from the initial design. Our paper describes the transition from a simple collaborative writing exercise into a multi-year, multi-system documentation process and project involving dozens of staff members and eight Ph.D. and Masters level graduate students.

Our process relies on the benefits of using collaborative and iterative writing to bridge gaps between students, faculty, and staff, creating strong partnerships and a synergy that redefines old paradigms of the corporate, academic, and user communities that make up a university. We believe this model has benefits for any organization which must document policy and procedures with limited technical writing resources.

Our emphasis remains on task-oriented documentation with a minimalist philosophy. The development process establishes a collaborative partnership between SMEs (subject matter experts—staff learning the new systems), technical writer-editors, data custodians (department information managers), and technical leaders from the Information Technology department. This “compound fracture” of the technical writing process remains the linchpin of our documentation process.

Our process seeks the synergy that develops when staff must work with trainers to learn a new system and as they discover the procedures they must use to do their

jobs with the new systems. We “capture the moment” before the learner becomes the expert—before chunking takes place—and before bad habits are learned. The SME (the learner) benefits from describing the steps of the new task, and we benefit from a detailed explanation of the steps. Our writers take the raw data and from it mold consistent and understandable task-oriented documentation. As you will see later, this is not always possible due to implementation delays.

As much as possible, this discourse takes place via electronic mail. We ask that all original notes and drafts be submitted in plain text. The “Field Test” documents (still marked DRAFT) created from these notes and drafts are used and reviewed by the SMEs and other staff until we can determine accuracy and usability. Once the documents seem accurate, they move to “Maintenance Mode” and become part of the overall systems documentation. Staff reports of problems and needed revisions, as well as our notification of revised documents are posted to an e-mail list to which the administrative systems users subscribe.

The documentation is created in FrameMaker5, printed to postscript print files, and distilled into Adobe Acrobat (.pdf) files. The postscript and the Acrobat files are posted to an intranet website accessible across campus. Faculty and staff access the site with Netscape or Lynx, and either download the postscript file (which they send to a printer or view in Ghostview) or they download the Acrobat file (which they view in Acrobat Reader and/or print pages). Users can always get the most recent version of the documentation and can print only the pages they need. We have to maintain only one source file. Everybody wins!

Analysis and Change

Change is inevitable for any process. For ADDOC, change has become a way of life. The University was (and still is) implementing five new administrative systems. The new systems are under development and are still changing. MTU generally modifies existing administrative procedures to accommodate differences in the new systems. New systems and the pressure of doing your old job while learning to do the same job with a new system and different procedures mean staffing changes and very little time for extras like documentation. The ADDOC team experiences regular turnover of membership as the graduate students successfully earn degrees and/or leave to work in new and exciting jobs. Technologies for writing, editing, and publishing electronically leap ahead by seeming light-years. We are afloat on a sea of change in a paper boat. Life is exciting!

Review and Revision

In the first year of the ADDOC Team's existence, we spent nearly as much time developing the process as we did generating text. We adopted a method that required some planning and analysis, but depended more on trial balloons, prototypes, and field testing than on planning committee meetings. This created an interesting trilogy of problems. First, we were not producing prodigious amounts of documentation; second, we were asking a lot of questions about things seemingly unrelated to the tasks the SMEs were performing; and finally, we appeared to change our minds quite often.

We were fortunate to have management which realized the need for development lead time. They weathered the storms caused by lack of progress, right at our side, until the floodgates opened near the end of the first year. When the documentation became available for field test, staff immediately saw the value of the task-oriented text and began to take ownership of the sections on which they worked.

Asking questions of busy people takes a special talent. Fortunately for us, the graduate students on our team have the ability to relate well to colleagues and convinced the staff SMEs that there was value to answering the questions. After the documentation arrived and they recognized their answers in the text, this became a non-issue.

Flexibility is a great attribute, but it can frighten coworkers because they need consistency to help establish parameters for a professional relationship. We were able to maintain consistency in the methods we used for handling change and this seemed to be enough for those concerned about our design and style changes.

Mick McKellar: We continue the practice of self-analysis. As each new graduate student team member joins the Graduate Student Internship Program, part of their orientation is to critically review one system's documentation. They learn why we do what we do, and we get a healthy dose of reality and an occasional paradigm shift.

Situational Changes

Some changes are thrust upon us by circumstances. Most notable among these changes are those wrought by changes in the administrative systems software. Because the new administrative system is still being developed by the provider, changes are frequent and often profound. We tend to limit the effects of these changes by not including many screen shots (screens change often) and not including actual key strokes for

the commands (we operate on a wide variety of hardware platforms and key mappings change). Templates and charts that supplement the documentation track these changes and are much easier to update than thousands of pages of documentation.

Negotiation became an integral part of our operating procedure early on. As staff and managers took ownership of the content of the documentation, they also wanted to make changes to the style and design of the documentation. Some things we would not change, some things we resisted changing unless the pressure from management was too great, and some things we changed upon request (with the understanding that they were bargaining chips for future negotiations). With some notable exceptions, we were able to maintain consistency in design and format across all five systems and the general systems documentation. By not requiring management fiat to resolve these issues, we maintained an open and flexible relationship with our SMEs and department management staff.

Gaylin J. Walli: I don't know if Student System documentation is the perfect example for this. We had so many exceptions to the rules. Some quite valid, some quite annoying. As long as the suggestions weren't just plain *wrong* I think we did an admirable job of accommodating them or succinctly describing why their suggestion would be detrimental to our work process (and ultimately to theirs as well).

Homage to the Future

The Next Steps

Our delivery system is just now moving toward implementation. We retain the paper paradigm because of its familiarity and acceptance, but we deliver the documents electronically. Documents are created in FrameMaker4 and 5. Sections are printed to postscript files which are then distilled into Adobe's portable document format (.pdf). The postscript and pdf files are distributed via web browser access. The postscript files provide ease of printing due to ready access to networked duplex postscript printers around campus. The pdf files may be downloaded via Netscape and viewed in Adobe Acrobat Reader (configured as a Netscape helper application) and selectively printed or searched and read on-line. Because both the postscript and pdf files derive from a single FrameMaker document, document control and maintenance is simplified.

Part 2 The Experience

People, People Everywhere

From the Beginning

Ginger K. Dwyer: When I was given the opportunity to work with Mick McKellar on the new administrative systems documentation project in the summer of 1992, it seemed like just another student job; little did I know what I was getting into. What started out as simply a means to an end—a bimonthly paycheck—turned out to be a life-altering experience. The past four years have not only been a lesson in writing top-of-the-line user-friendly documentation, but also in setting reasonable goals, resolving conflicts, and forging productive business relationships. In addition, my tenure as a member of the ADDOC writing team has taught me more about the rewards and challenges of working collaboratively than any 10-week class ever could.

The first two years of the administrative documentation project were challenging in many ways. Most important, I believe, was the challenge of forming reciprocal, respectful relationships with the subject matter experts. These relationships would prove to make-or-break the project. We had to convince an already overworked staff to get involved in a yet another project which, in their view, filled no immediate need, and therefore, was of minimal importance.

On one occasion I was told by an exhausted staff member, "This documentation review is the very last item on my list of things to do, the *very* last." The question for me then became, "How can I make the staff's active participation less intrusive and how can I show (not tell) them the importance of their involvement?"

The answer was to give them options and to create a sense of pride in the documentation. When we first began we planned on interviewing the SMEs to extract the information we needed. We quickly discovered this method was unacceptable to many staff members. Many of the more technical staff members began to send rough sketches of tasks over e-mail. Some of the Finance staff, however, still preferred the face-to-face interaction of an interview, and thus the option remained.

The second challenge—creating pride in the documentation—grew as the documents were produced. I remember the clear change in reaction by the Finance staff when I brought over the first bound copy of the Finance System. A Financial Analyst with whom I have worked closely over the past three years couldn't say enough about how "really professional" the documents looked. As I was leaving, I saw him

bring the bound copy out into the hall to show others; like to a newborn baby, people flocked around him. Thus, pride was created.

During the final two years on the ADDOC team my professional relationships continued to become more and more respectful and reciprocal. What started out as persuading the staff to make time for me to bring over a draft turned into the staff coming to my office and working with me as I wrote. Ah, the rewards of meeting, even exceeding, one's professional goals. Undoubtedly, the experience of working on the ADDOC team will prove more valuable to my future as a writer than the years of term-papers and tests.

From the Middle

Gaylin J. Walli: Coming into a project at the midpoint is never easy. Upon reflection, however, I think I'm one of the luckiest of all the team members. It wasn't necessary for me to be in on the initial negotiations and arguments about what the documentation should look like; but I did get some say in how the documents might change as the needs of the end-users and the technical writers changed. Working with a new set of faces was also a challenge, but I didn't have to decide which section would be mine; I was simply assigned to one. And while the SMEs for my section had a history of being difficult to work with, I found it exhilarating.

When I joined ADDOC, the end-users were at a turning point. It seemed to me that the users no longer needed some of the "hand-holding" measures the team had put into the modules when the documentation process first began. Like the documentation, these users were growing in knowledge and sophistication. Screen shots, for example, were used in my section quite frequently. When I joined the team, however, the screen shots had become a burden to the writers. The exponential growth of my section made dealing with screen shots a dreaded chore that increased update time threefold. So, I did a little discrete checking and found out that the end-users simply skipped the screen shots altogether. If they weren't using them, then why should I have been dealing with them? Deleting these graphics was the second most enjoyable experience I had working on my section of the documentation. The increased turnaround time for documentation changes made it one of the most enjoyable experiences for my end-users as well.

Working with new people is always a challenge. My section of the documentation had the greatest variety of people working on it and the documentation reflected that. While not rampant, wording inconsistencies did exist, making the documentation difficult to follow at times. And none of the end-users seemed to care. But it bothered me to no end and I

wanted it to bother the end-users too. It was something important enough for me to fight for, to make a big deal out of. When everything was said and done, my opinions prevailed, the consistency increased dramatically, and eventually checking for consistency became one of the first things that new team members practiced.

So what about the first most enjoyable experience I had while working on the documentation? Receiving flowers. You see, one of the most important things I discovered when I began working with the subject matter experts for my section was that they appreciated the aggressive and honest approach I took to the documentation. If one of the SMEs had a suggestion about the documentation that didn't seem to work, I didn't hesitate to tell them and explain why I thought so. Eventually, this aggressiveness and honesty allowed me access to a wider circle of SMEs, a circle I didn't have access to when I first began because of the protective control exercised by the lead SME for my section. During one particularly challenging meeting with the lead SME I rather strongly expressed my displeasure with the lack of access I had to a certain SME with information I desperately needed. And I elaborated my displeasure with a list of pros and cons (mostly cons) for how it affected my work. Within a few hours after the meeting, a delivery van pulled up with a beautiful Poinsettia plant, I received an apology, and close on its heels was the promise of significantly increased access to SMEs.

From the Present

Patricia L. Calomeni: I joined the ADDOC team one year ago, coinciding with my acceptance into the RTC Masters program. I chose this route, instead of teaching, because I was looking for practical application of my undergraduate (Scientific and Technical Communication) and graduate coursework. I was assigned the two reluctant groups—the groups that, for the most part, had not been participating in the administrative system documentation process. For this reason, the team's goal of "capturing the moment" before the learner had become an expert could not be met as that moment was in the distant past. The groups I was assigned to work with had been using the administrative software for years. In other words, obstacles I have encountered include: document coordinators with responsibilities more pressing, and higher priority, than documentation; people who have done their jobs for a number of years without administrative software documentation, and are not entirely convinced of its benefits; and strong resistance to sending notes and drafts via electronic mail.

With both groups, I argue the benefits of documentation every opportunity I get. I have attempted to persuade SMEs to help me create new documents, balancing aggressiveness with an understanding of the multitude of other responsibilities that document coordinators are faced with. Although the flow of work from the two groups still remains sporadic, they are beginning to send information to me on a more regular basis.

From the Group Leader

Mick McKellar

Our ADDOC team is now a Graduate Student Internship Program that offers academic credit for participation on the documentation team. As team members graduate and move on to jobs in industry and education, other graduate students in Michigan Tech's Rhetoric and Technical Communication program compete to join the team. The continually improving quality of our task-oriented procedure and policy documentation has been recognized and the style and format of the documentation has been copied by others.

As group leader, I have been blessed with access to highly motivated professional writers who happen to be pursuing advanced degrees. Their variety of talents and experiences have added a depth and flexibility to both the document design and the process that could not have been achieved through one person's vision. They have been so utterly professional in their approach to this task that the University staff who collaborate with them have tended to forget that they are, first and foremost, students. This often has resulted in greater demands than would normally have been placed on student employees. However, because of their professionalism, and the fact that I could stay out of the way, they have been able to bring the unique nature of their work relationship into clear focus with the staff and have resolved these issues with little input from me.

I've been forced to grow professionally, just to keep pace with the team. I give them a grade each term for their accomplishments. They grade me every day by challenging me as only those immune to our University corporate culture can.

The Pride of Ownership

From the SMEs

Not until staff began sharing our documentation with staff at other universities using the new administrative systems and with the provider representatives did they realize the quality of the work on which they collaborated. Once the word was out that this was good stuff, they were more than happy to take some

credit for the accuracy and completeness of the documentation. In most cases, we no longer had to call to ask them to report changes, we had to find ways to deal with the increasing numbers of revisions and updates that began flowing in after publication.

Ginger K. Dwyer: The SMEs have pride in the documentation because it represents them. The binders say, in big letters, FINANCE, STUDENT, ALUMNI, etc., therefore, the content is a reflection of those areas.

From the Team

Teams traditionally go through four stages as they become a fully functional team: Form, Storm, Norm, and Perform. We cycle through these stages often as new members join and veterans leave. Our cycle time is very fast, and we believe this may be due to the success of the documentation and pride of owning part of a large and complex set of documents that is so very organic and unique. Each new member brings new ideas and a fresh view of our style and design. With each challenge comes either a better understanding of why we do it the way we do it, or the pride that comes with revision and improvement based on the new member's recommendation.

Ginger K. Dwyer: The ADDOC team has pride in the documentation because we made it. We wrote much of it, edited most of it, and designed all of it.

Part 3 The Conclusions

3.1 Collaboration Really Works (most of the time...)

We spend a great deal of our time explaining the cost savings and the benefits of channeling funds back into academic departments. We talk about the practical experience gained by the graduate students participating in the ADDOC process. We tout the quality of the product. What we often overlook is that our experience demonstrates that collaborative writing is a viable method for creating quality task-oriented user documentation.

By viable method, we mean that there is a synergy that develops between the staff SME and the student writer/editor, with each playing off the strengths and weaknesses of the other. We mean that the relative naivete of the writer/editor combined with the expertise of the SME often creates a "teaching moment" when the efforts of the SME resemble training more than writing documentation, making the final product more detailed and less prone to the expert's proclivity to "chunk" data and skip obvious steps. We can retain this neophyte status because of our turnover of student participants and because we often rotate assignments from one system to another. No method is fool-proof of course, and there are always those who simply cannot work together for a

variety of reasons. Some staff and some students simply are not suited to such collaborative efforts, either because of personality conflicts or a lack of faith in our methods. Solving such situations usually involves matching the right people or moving the wrong people out of the way.

Mick McKellar: Cultural changes take place at a glacial pace, yet I have seen "just another group of students lead by a maniac technical writer" become an integral part of a major systems implementation project in just four short years. The crucial factors seem to be mutual professional recognition and the fulfillment of a recognized need.

The Costs

- Team member turn over is relatively constant and rapid, causing team formation cycles to run again and again.
- Students unfamiliar with our process, hardware, and software require training to get up to speed.
- Documentation teams (and technical writers) are often the first affected in tight budget times.

Patricia L. Calomeni: One important cost that may be overlooked is the one associated with foregone relationships with the Humanities department that result by choosing the ADDOC team over teaching. Graduate students who teach work with other graduate students, and with departmental faculty, on a daily basis. ADDOC team members spend considerably less time in contact with people from the department; this makes developing crucial academic relationships much less spontaneous.

Gaylin J. Walli: For me, the lack of contact was not as big of a deal as it was for everyone else. But this was due to my in-your-face attitude and the nature of my thesis which required a lot of schmoozing. Also, my husband was a GTA at first, so people knew me through him. The other GRAs working for our team are at a serious disadvantage in not being able to make use of the seemingly accidental day-to-day contact that happens when your office is in the same building as those of your instructors.

The Profits

- We have access to highly-motivated professional writers and editors. Many of our graduate students are "non-traditional"—experienced in writing for industry and seeking hands-on writing experience to add dimension to rhetorical studies.
- Graduate students receive less pay than full- or part-time staff writers and editors (more a plus for administration than for the students).

- Subject matter experts (staff), data custodians, and technical leaders take ownership of the product (the documentation) and actively seek to maintain its accuracy and usability.
- The collaborative, iterative process develops a synergy that provides a wealth of new ideas and a unique ability to see past old paradigms.
- Participating students and staff understand each other better, and bridges are built from the corporate world of administration to the academic world of students and faculty.
- Resources flow back and forth between faculty and staff organizations that traditionally compete for these same resources.
- The students benefit from access to a "living laboratory," a place to apply skills and ideas to traditional and cutting-edge electronic publication technologies while earning academic credit for their work.
- Students work as members of several teams in a production environment. The University benefits from receipt of timely, accurate, and professional documentation.

A Final Word

Our experience has implications for technical writing projects in any field where changes happen quickly, people must learn new technologies and begin using them immediately, and where technical writing resources are finite or limited. Sound familiar?

Virtual workgroups, electronic mail, web browsers, portable document files distributed across the network, editing and publishing in the electronic environment, on-going real-time usability testing and feedback via e-mail lists, HTML editing, webmastery, on-line document and page design retaining the look and feel of paper with the searchability, selective printing, and instantaneous updates of electronic documents, teamwork, and team leadership come together in our experience to form a model applicable to a wide variety of technical writing situations.

Our team has an amorphous quality resulting from consistency of purpose blended with extreme flexibility in methodology, a wide-ranging membership diversity, a willingness to bend with the wind of technological change, and frank and open discussion with our group. Add a rock solid commitment to quality and scholarship to the mix and you have a winning team.

Our experience indicates that such people live in all organizations.