



Customer Partnering: Data gathering for complex online documentation



JoAnn T. Hackos, PhD, Molly Hammar, and Arthur Elser, PhD

Technical communicators today must document complex applications used in complex environments. Information about users and use models is important under these conditions, especially if documentation will be presented online. Customer partnering, a method of information gathering that supplements surveys, contextual inquiries, usability testing, and interviews, provides a way of involving the users of complex applications in the design of information delivery systems. We used this method to help a client gather important information about user and use models and design a new information library for complex server computer systems.

This special issue is about new techniques for managing the growing complexity of information that technical communicators are called upon to design into online documentation products. As technical communicators face the challenge of organizing information from different products and departments and for different audiences into integrated online information sources, they must perform rigorous audience and task analyses. These analyses should tell communicators how much and what kinds of information their audiences need, as well as what media to use to deliver that information. In developing online documentation, we have found that traditional needs analysis methods don't give us enough detailed information about the users of the products to design documentation that adequately meets their needs.

Several well established techniques, including contextual inquiry, focus groups, and usability testing, provide valuable guidance about the information that documentation audiences need. Contextual inquiry, which involves observing customers using products in their work environments, shows technical communicators how products and documentation are used in the workplace [1]. In using contextual inquiry techniques, Holtzblatt and Beyer found a relationship between software developers and users similar to that between masters and apprentices. The software developers learned how the users did their work in ways that helped them to develop software packages that better fit the workplace rather than having users fit the work into the software model [2].

Focus groups perform a similar function, but take users out of the workplace and into a discussion of their needs with

their peers. Focus groups provide insight into users' attitudes and opinions about products but do not tell communicators how the participants actually use products or documentation at work [3]. Usability testing, which allows researchers to watch participants using products, does not normally allow for long-term contact and interaction about the customer's needs.

Software development groups have also been aware of the need to involve customers in specifying requirements for system design. Customers don't want the application to dictate the way they must work any more than developers want customers to dictate how they must work. A successful requirements process helps customers and developers become partners to create "renovation and ownership" for new or revised products [4]. Successful software development managers no longer try to decide if customers should participate in the development process but, rather, how they should participate.

Using information gathered from facilitated teams, support lines, surveys, interviews, users groups, contextual, inquiry, usability tests, and focus groups, among others, development teams have found success in using combinations of several methods [5]. In one complex information design project, we used contextual inquiry, focus groups, and usability testing to assess users' information needs. All of these techniques provided valuable direction about the kinds of product support users needed; however, we found that none of them provided us with sufficient information to design an online documentation library that met users' needs. To supplement these needs analysis techniques, we developed customer partnering for information products.

WHAT IS CUSTOMER PARTNERING?

Customer partnering is a technique used to design information products by creating a long-term relationship between representative customers and information developers. Through a series of guided interactions, customers and developers investigate how current information products are used. They use this knowledge to specify the design of improved and new information products. Like other forms of participative design, customer partnering uses aspects of contextual inquiry and focus groups, but it provides much more detail about how the company can meet customers' needs, and it involves the customer

much more deeply in the design process. Note that participative design techniques similar to customer partnering have been used in software development but rarely in the design of information products.

HOW WE CAME TO DESIGN CUSTOMER PARTNERING

Comtech, an information design and human performance consulting company, had been working over several years with a division of Compaq Computer Corporation that manufactures network servers. We had evaluated the effectiveness of user and service documentation and conducted usability tests on a new CD-ROM product for delivering user documentation. The first stages of the ongoing study took us to Compaq's customer sites to observe installation, customizing, troubleshooting, and repair activities. During the site visits, we observed users at work and discussed with them how they used the documentation. During visits devoted principally to installation, we observed how the documentation was used. While we learned about and reported on a rich set of details about customers' use patterns, questions remained about the best course to take in redesigning the documentation and delivering it through electronic media.

We designed customer partnering to learn how Compaq's customers thought about and used their documentation and to help Compaq redesign the documentation library to meet its customers' needs.

The client's problem

Compaq decided to redesign its documentation as a result of our findings in previous large-scale field studies. During our user and task analysis for these studies, we learned that Compaq lacked insight into how its customers worked and used information. Part of the problem was the lack of direct involvement in needs analysis by the technical communicators. They needed to hear for themselves what customers' problems were. And they needed to develop answers to questions about specific design details, particularly about the best mix of paper and online documentation.

We had tested the usability of Compaq's documentation and had spent considerable time with its customers. We discovered that customers believed that Compaq was not paying sufficient attention to their information needs. Our analyses clearly indicated the need to redesign the documentation library but did not suggest how to satisfy all the user groups' support needs. Our analyses also indicated a need for increased user involvement in the redesign process.

Our approach to the problem

In deciding how to design a user study that could help our client answer detailed design questions about the documentation library, we considered traditional focus groups or contextual inquiries. We felt, however, that neither of these techniques would provide the rich array of information needed. Contextual inquiry provides good information about how a customer

uses a product in a particular setting, but it doesn't allow customers to help develop ideas and provide more thoughtful and focused feedback. Because contextual inquiry is also limited by the amount of time we can spend with a busy client, we often are unable to see the entire spectrum of behaviors users exhibit with information products.

The focus group, on the other hand, often doesn't allow time to concentrate on design details because participants are together only briefly and can examine problems only superficially and out of context. Neither technique allows for repeated contact between client and customer so they can collaborate in formulating ideas and opinions over time.

We needed a combination of techniques that would allow us the time to learn in depth about our client's customers while still providing an atmosphere conducive to brainstorming and collaboration. When Compaq approached us again to help them make design decisions, we suggested a new method which we call customer partnering. In concept, customer partnering is an offshoot of traditional end-user analysis techniques, including focus groups, contextual inquiry, and interviewing. We suggested that customer partnering would allow us to answer the specific design questions that were beginning to emerge.

We proposed a series of five working sessions, several weeks apart, in which the same customer team members would meet with the client team members and a facilitator. The time between sessions enabled us to process information and plan subsequent sessions to elicit the information we needed. The time between sessions also allowed Compaq to create information prototypes, based on customers' input, for evaluation during the next session. The three-month duration of the project allowed the customers to become more aware of their own information needs and to become more thoughtful and skilled in evaluating and expressing these needs.

Goals of our customer partnering project

The primary goals of the customer partnering project we designed included the following:

- ◆ eliminating redundant documentation
- ◆ providing more comprehensive documentation in areas of critical importance to customers
- ◆ determining the kind of information customers want to have available and to what depth
- ◆ determining the most useful mix of media for delivering documentation

We gathered information on the physical aspects of customers' work environments, how they use documentation, what kinds of documentation they need, and how they preferred that our client address their information needs. Based on feedback from customer partners, we developed recommendations for redesigning the Compaq documentation library.

The results of the partnering project

At the end of our customer partnering project, we delivered a final report to Compaq summarizing our overall findings and recommendations for the redesign of their documentation. Our general conclusions were that

- ◆ customers often want to service and configure their equipment themselves rather than having to rely on outside service technicians.
- ◆ documentation should address the different needs of both novice and advanced users.
- ◆ delivery media must be matched to the type of information provided, its targeted users, and its expected use.
- ◆ customers need a process for learning if their documentation is the most current and comprehensive available.

From the general conclusions, we made strategic recommendations for our client to systematically address its customers' needs.

Part of the success of our customer partnering project resulted from our extensive understanding of customer use patterns developed over more than three years of site investigations. We do not believe that customer partnering is a technique to use initially in investigating customer needs, but only following site investigations that assist the researchers and the developers in understanding the current patterns of use. Site visits let you discover how the information is used, but can be superficial in the detailed data gathered. You start to see patterns and identify needs, but these visits are not conducive to in-depth discussions. Focus groups also provide superficial glimpses because the participants generally have not had enough time to think through the issues before the session. However, the information gathered from site visits, focus groups, and customer surveys can be used to direct the planning of a successful customer partnering venture.

HOW TO IMPLEMENT CUSTOMER PARTNERING

Customer partnering defines the essential relationship between a customer for a product or service and a developer who seeks to improve the quality of that product or service. However, we recommend that an individual or group skilled in partnering techniques serve as a facilitator of the customer partnering activities. In this way implementation will not be biased by preconceived notions about what the customer wants or needs or by defense of existing information products. The *client* is the information development organization that initiated the customer partnering. The *customer* represents the people who use the client's information products and volunteer to take part in the customer partnering effort. The *facilitator* is the person who designs the study, runs the information gathering sessions, writes reports about the study, and makes recommendations about information delivery methods suggested by the study.

Facilitators should be skilled in the customer-partnering technique. For projects involving information design, the facilitators should also be experts in the information design process. This knowledge is needed in designing homework assignments, helping the client understand the information gathered, and keeping the discussions focused on topics that will aid in information design. Just as with focus groups, it is often beneficial to have program facilitators who are not part of the client organization so that they can maintain a degree of objectivity during the sessions; however, customer partnering is not limited to facilitation by outside firms. Any group can use customer partnering internally to its own benefit so long as they develop expertise in the technique and engage an independent and skilled facilitator.

The facilitators in charge of a customer partnering program must first ensure that the client understands and agrees with the proposed method and its purpose. The commitment asked of customers is great, and any confusion between the client and the facilitators about the goals of the study will disrupt the focus of the meetings and quickly discourage customer partners from contributing to the meetings or even attending them. Once the purpose and method are clearly established and understood, it is time to establish criteria for selecting members of the customer partnering group and planning the partnering program.

Selecting customer partners

Customer partners should represent a broad spectrum of the client's users. Having product users whose experience ranges from novice to experienced, who represent different sizes and types of companies, and whose use of the product varies participate in the study ensures that customer requirements and use models will be addressed during group discussions.

In addition to having the necessary experience in their field to be considered "typical" users and representing a broad range of customer company types, customer partners must also

- ◆ express interest in the project and willingness to commit to the time and schedule
- ◆ be knowledgeable about their own documentation needs
- ◆ reside close to the facility where the working sessions will be held, if travel budgets are not provided
- ◆ commit to attending five to six working sessions over a period of several months
- ◆ commit to completing "homework" assignments on their own time in between working sessions

Adhering to these requirements may, however, add some bias to a study. Unless the area in which the working sessions are held is a large metropolitan area with many potential customer companies, it is possible to have too limited a sample of users for the sessions.

For our pilot project, we recruited customers from two critical user groups: system administrators and resellers. We created a partnering group of one reseller and four system administrators from companies operating both large and small networked systems in the Denver metro area. We were disappointed that only one reseller volunteered for the study because we had no way of knowing if the information from that person was representative of the reseller group. As a result of the low participation of resellers, this study focuses on system administration needs. Another study would be needed to address resellers' needs in equal depth.

It is also possible to introduce bias by the selection of volunteers. By their willingness to volunteer, the customers may be substantially different than the majority of users who don't volunteer. This bias, however, is endemic to all participative study techniques, including contextual inquiry and focus groups. The customer-partnering technique seeks to involve customers in product design who have a strong commitment to the product's success, who are interested in creating the best product possible. At the same time, they are selected because they represent mainstream product use; they are not the outliers. If a list of potential volunteers is suggested by the sales force, those on the list may be "good" customers in the eyes of sales, that is, they may be friendly customers, but not truly represent the mainstream customer.

Planning the format and focus of each working session

Careful planning of customer partnering working sessions is essential to the success of the study. Because the customers' experiences often influence the direction of conversations during the sessions, the facilitator must have a clear idea of what is to be covered during each session to stay on schedule and to maintain the focus of the group. In our project, we divided discussions of current documentation among the first four working sessions. We reserved the fifth for a discussion of prototypes and future documentation needs.

As we planned the working sessions for our customer partnering project, we planned highly-focused activities that would provide specific feedback about customers' documentation needs, keep the sessions focused, and maintain participant interest. Activities we planned included asking participants to draw their workspaces with colored markers, work in groups to evaluate online documentation produced by our client and its competitors, and tape documentation topics to a wall-sized information organization chart. For example, to maintain the focus of a discussion of documentation delivery media, we asked participants to complete a delivery media preferences worksheet (see Figure 1). After participants indicated on the worksheet the documentation delivery medium they preferred for each of the server administration tasks, we led a group discussion about delivery media. Asking participants to complete the worksheet before the discussion gave them time to consider their delivery media needs for a wide range of tasks and formu-

late their ideas before the discussion. In our analysis of the working session, we were able to refer to the participants' worksheets and their discussion comments.

Providing homework for group participants

Customer partners should be given assignments to complete between working sessions. Giving participants homework assignments enhances the working sessions in the following ways:

- ◆ Participants maintain their focus on documentation during the breaks between working sessions.
- ◆ Participants have time to think independently about the client company's product and decide what their own needs are without peer pressure or time constraints.
- ◆ Participants are able to bring concrete examples and well-formulated ideas for product improvement to the working sessions.
- ◆ Facilitators gather valuable accounts about the experiences of the partners and their co-workers in using the client company's products on the job.

Homework assignments may include polling coworkers, keeping logs of experiences with documentation, examining products or documentation produced by other companies, and designing documentation prototypes. At one session, in order to determine what type of online information presentation was most helpful to users, we asked the customers to bring examples of online documentation they particularly liked or disliked to the next working session. We found that the online documentation customers liked was task oriented and organized into major task-oriented menu choices, such as installation, configuration, troubleshooting, and maintenance. Had we only asked customers to evaluate our client's existing online documentation, which was organized by product type and manual title, we might not have discovered customers' preference for task organization.

To ensure that homework assignments benefit the partnering venture, the facilitators must design assignments that are interesting, clear, relevant, can be accomplished in a reasonable amount of time, and that give participants a good starting point for the next working session. They must also prepare all log forms and questionnaires necessary for each assignment. Customer partners must commit to completing all of the homework assignments and must come to working sessions ready to discuss the assignments.

Facilitating the working sessions

The relationship between customer partners and the client company develops during the series of working sessions. At the sessions, representatives of the client company are able to observe while their customer partners evaluate products, share their experiences, and talk about their needs. Client partici-

pants ask questions, present new product ideas, and solicit immediate feedback.

To guarantee productive working sessions, facilitators must prepare the necessary materials and discussion topics for each working session. Facilitators should not begin a working session until the facilitator's agenda; equipment for running online, video, or audio documentation; documentation that customers will evaluate during the working session; and any paper or other materials needed for working session activities are in place. Facilitators must also direct the working sessions, keep discussions focused, and prepare discussion questions and written surveys designed to elicit information on how customers currently use the products and on how they could use the products more effectively.

One main advantage of gathering information during working sessions is that the participants interact face to face over an extended period of time. Unlike focus groups, in which the participants never get to know one another, customer partnering provides enough time to allow the participants to form a coherent work group. This interaction contributes to information gathering in the following ways:

- ◆ Participants are able to play off each other's ideas and brainstorm solutions together.
- ◆ Facilitators can gauge customers' reactions to existing products and new prototypes by listening to their comments, watching their review of the products, and observing their body language.
- ◆ Client representatives can see first hand how customers react to their products.

Successful facilitation of the sessions requires a firm focus on the objectives of the partnering and the ability to promote useful conversation. The facilitator must ensure that everyone has an opportunity to contribute and that no one is permitted to dominate the discussions. If facilitation is done correctly, a rapport is established among group members that allows candid and meaningful dialog that can lead to the design of improved information products.

Duration of the study

The duration of a customer-partnering study will depend upon the complexity of the product being designed. However, a primary characteristic of customer partnering is that the interaction between customer and developer takes place over an extended period. We have found that over time, especially several months, customers grow in their understanding of the design problems under consideration. In the Compaq study, for example, we noted that the server administrators began by being positive but vague in their comments on the documentation. They told us that the existing documentation was "fine." By the fourth and fifth sessions, their opinions had changed and their articulation of their needs and the problems with the

existing information had become increasingly, even surprisingly, explicit.

For example, at an early session, the customers told us that the installation pamphlet was "helpful" and they would choose to use it during installation. By a later session, they became adamant that the same pamphlet was not useful and had to be redesigned. The growth in understanding that comes in part from a degree of politeness. People dislike being critical in front of strangers, especially in the presence of the developers of the documentation. Unless they have very strong negative responses, they are unlikely to make an issue of minor concerns. In addition, however, users often have not formulated a clear analysis and criticism of an issue that they are asked about. They really have no opinion but will fill the gap in the dialog with vague commendations. Only after several sessions will they gain enough perspective in the issues at hand to discuss them cogently and have specific recommendations.

Users also learn from their interactions with other participants to differentiate between a "pet peeve" and a more universal issue. They tend to temper their statements of need to take into account the circumstances and patterns of use articulated by other participants.

Customer partnering programs should consist of at least five working sessions with two to three weeks between sessions. Five sessions allows the group to become an organic unit that moves well past the usefulness of a focus group. Beyond six sessions, the sessions may begin to lose effectiveness. As the customers become more expert in the topic of the study, they cease to represent typical users. We observed this learning curve in the sessions we facilitated. Clients might usefully reconvene customer partnering groups, however, for follow-up activities (for example, for feedback on prototype documentation developed in response to the findings of the study); but for any future customer partnering programs, clients should recruit a new group of customer partners.

Recognition of customer participation

To help encourage and recognize those customers who had participated in the program, our client gave out small gifts at several sessions, invited the participants to dinner at a nice restaurant to wrap up the study, and wrote letters of appreciation. This recognition is important because the customers receive compensation for their participation, commit a significant amount of time, and show a willingness to contribute to the effort to improve the client's products.

Our client also provided follow-up information to the participants letting them know of progress made on the design of new information products as a result of the customer partnering sessions. Customers are very interested in knowing what has happened to their recommendations. They want to see the fruits of their labors in improved, more usable products.

We recommend that program facilitators and client companies maintain a relationship with customers after the final working session. A continuing relationship provides the client

company with opportunities to ask customers for feedback on new product ideas and to modify its efforts accordingly during the development process. Customer partners might even participate in new product usability tests.

Developing product prototypes

The time between working sessions allows the client company to develop product prototypes for customer partners to review in later working sessions. Getting customer feedback on product prototypes helps with product redesign in the following ways:

- ◆ The client company receives immediate feedback on new ideas for product design and presentation.
- ◆ The client company has the opportunity to improve prototypes to meet customers' needs and preferences.
- ◆ The client's ideas are supplemented by customers' ideas for improving the prototypes.

Program facilitators, the client company, and customer partners work together to create prototypes that become the framework for the client company's new products. The client is responsible for using information gathered during the working sessions to create prototypes of new documentation and for preparing written evaluation forms designed to elicit participants' detailed evaluation of the prototypes. Customer partners evaluate each prototype and offer feedback for improving them.

Reporting the results and recommendations of the working sessions

During the working sessions, the facilitator should ensure that customer responses are recorded. We have an observer attend each session to log the sessions in much the same way a data logger functions during a usability test. We also videotape the sessions for immediate review, future analysis, and presentations.

After each working session, the facilitator should summarize the findings and recommendations that result from the working session. The summary should include information about what participants like, dislike, and need from the client company. It may also include samples of products or documentation that participants bring to the working sessions, sketches participants make of their workplaces, or prototype design ideas.

At the end of the program, the facilitator should create a final report presenting the overall findings of the study and addressing its original goals. To draw on the individual working session reports but avoid redundancy, we recommend organizing the final report around an evaluation of delivery media, user experience levels, or stages of product use. For example, while our working session reports focused on what customers liked and disliked about each of our client's documents or document prototypes, our final report discussed the differences between novice and advanced users' needs and made recom-

mendations for providing a documentation library that supports a broad range of users and uses the delivery media appropriate for each task they perform.

BENEFITS OF CUSTOMER PARTNERING TO THE CLIENT AND ITS CUSTOMERS

The major benefit of customer partnering is the relationship that develops between a client company and its customer partners through repeated contact. Studies that involve one-time contact, such as interviews, surveys, focus groups, and contextual inquiry only gather participants' immediate reactions.

Customer partnering, on the other hand, creates an environment for an in-depth investigation of customers' needs and preferences. As a result of the close relationship that develops between a company and its customer partners, both the client and the customers benefit. The specific benefits of customer partnering follow:

- ◆ Customers receive a product that is custom designed to their needs.

Customer partners leave the program knowing that product improvements will be made with their needs in mind. They eventually receive a product that is designed specifically to meet their needs. Insofar as the partners represent the entire customer base, the new product is customized for all customers' needs. If the developers are prepared to do so, working prototypes of information products can also be delivered to the customers' sites between sessions for in-house testing, giving the developer even more detailed feedback.
- ◆ Customers feel ownership for changes to future products.

As they participate in the program, partners gain a feeling of empowerment: the opportunity to give feedback directly to the client company means that they have helped design products that directly address their needs.
- ◆ Customers learn how the process works and provide better feedback and information in the later sessions.

During the weeks between working sessions, the customer partners reflect at length on the product they are evaluating, complete homework assignments that help them develop their ideas, and evaluate the client company's and other companies' products. As a result, participants are able to bring to each session design recommendations, well-thought-out opinions, and examples of products they particularly like. This continuing effort on the part of the customer partners is the primary feature that makes customer partnering a richer, if different, information gathering technique than contextual inquiry or focus groups.

- ◆ Client companies get frank and valuable information about the design of products and documentation.

From the relationship that develops between the client company and customer partners, the client company gains insight into customers' working styles and product needs. Most importantly, the client company receives candid feedback from customers on aspects of products they actually use and how they use them. As they get to know one another and feel comfortable with each other, participants feel free to contribute to each other's ideas and to express straightforward opinions about the products.

- ◆ Companies get to educate their customers.

During the program, customer partners learn about the full range of products available to them, and they receive answers to specific, work-related questions. The development company can then use this information to help develop marketing efforts to help others learn about these products.

- ◆ Customers' views of the client company may become more positive.

Customers who participate in partnering programs are impressed by the client company's dedication to improving its products and involving customer input in the redesign process. They appreciate the attention and see the client company in a new, positive light. This can, however, provide a bias that keeps them from being forthright. The facilitator must be aware of this bias and probe for issues they feel might underlie the comments being made.

- ◆ Customer partnering benefits all involved.

The benefits of customer partnering to all participants are enormous. Customers feel they have direct input to products they will use, feel they have the client company's undivided attention for the duration of the program, and finally have products and documentation that more nearly meet their particular needs.

The developer no longer has to guess about customer requirements for particular products or documentation.

Rather than just hearing the "horror" stories of products and processes gone bad, hearing only from customers who love the product, or hearing nothing at all, the client interacts directly with a spectrum of typical users who can help fill in the comprehensive picture needed for good product development.

Customer partnering offers technical communicators a way to unravel the complexity of information and organize large bodies of information into *online documentation* that is useful for its intended audience. By involving customers deeply in the documentation design process, communicators can meet customers' information needs as effectively as possible.

References

- [1] Mary Elizabeth Raven and Alicia Flanders, "Using Contextual Inquiry to Learn About Your Audiences." *The Journal of Computer Documentation*, vol 20 no 1, pp. 1-13, 1996.
- [2] Hugh R. Beyer and Karen Holtzblatt, "Apprenticing with the Customer," *Communications of the ACM*, vol 38 no 5, pp. 45-52, 1995.
- [3] Joseph S. Dumas and Janice C. Redish, *A Practical Guide to Usability Testing*. Norwood, NJ: Ablex Publishing Corporation, 1994.
- [4] Karen Holtzblatt and Hugh R. Beyer, "Requirements Gathering: The Human Factor," *Communications of the ACM*, vol 38 no 5, pp. 31-32, 1995.
- [5] Mark Keil and Erran Carmel, "Customer-Developer Links in Software Development," *Communications of the ACM*, vol 38 no 5, pp. 33-44, 1995. □

REPRINTED WITH PERMISSION

IEEE Transactions on Professional Communication, 40 (2), June 1997, 102-110.