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COMPUTER DOCUMENTATION

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UNDERSTANDING USER ATTITUDES:
THE CORNERSTONE OF COMPUTER DOCUMENTATION

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ABSTRACT

Understanding user attitudes is key to the design, development, and production of online and printed computer documentation.

User needs for documentation can be addressed best by classifying users according to the attitudes they bring to computing, rather than by their computing knowledge or skill level only. Attitudes are reflected in all types of computer users including scientists, engineers, programmers, administrative assistants, and managers. Attitudes are independent of computing skill level and frequency of use; they apply equally to new users, casual users, or expert users.

Five years ago, we identified three user attitudes at Los Alamos:

- * No-time-to-learn attitude -- users simply want to get the job done and have no time to learn about the topic

- * Want-to-learn attitude -- users want to learn everything about a topic

- * Know-what-I-want attitude -- users are already familiar with similar computing topics and know what information they need

Since then, we have been designing, writing, and updating

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computer documentation to address these attitudes.

INTRODUCTION

At Los Alamos National Laboratory, we have been designing computer documentation for our Integrated Computing Network (ICN) for more than 15 years. The ICN is a complex, heterogeneous computing network serving a large, scientific user community. The network includes many supercomputers, distributed processors, personal computers, and scientific workstations. It handles a wide variety of scientific computing needs including classified, administrative, and unclassified computing.

Currently, there are more than 8,000 users of the ICN including programmers, scientists, technicians, managers, technical editors, and secretaries. Approximately 5,000 users are located in Los Alamos, and the rest are located throughout the country.

The network is constantly evolving as capabilities are enhanced to provide state-of-the-art scientific computing. Information changes go hand-in-hand with these network changes, and the result is a mountain of information, both online and printed. Users can choose from more than 1,000 printed documents, which they can pick up or order from our Computing Information Center. Users can also access these documents online, or they can access over 25 online information facilities including vendor and local help, tutorials, news, computerized card catalog and ordering, computing course catalog, and many others. Our challenge is to manage this information and provide good documentation that will be used.

DETERMINING USERS' NEEDS

We've spent the last several years studying this challenge in order to develop a strategy for designing documentation to meet our users' needs. We looked at the traditional ways of classifying users. Users come in many flavors: there are casual vs expert users, programmers vs nonprogrammers, scientists vs managers vs secretaries, inexperienced vs experienced users, and so on.

None of these traditional ways of classifying users seemed to suit our complex environment. The traditional factors pigeonhole people and fail to recognize that a user can have different documentation needs at different times of each day. Attitudes are independent of computing skill levels and frequency of use; they apply equally to new users, casual users, and expert users.

At the Laboratory, we found that user needs for information can best be addressed by the attitudes they bring to computing rather than by their computing skills or knowledge. We defined three attitudes:

- * no time to learn,
- * want to learn, and
- * know what I want.

No-Time-to-Learn Attitude

Users with a no-time-to-learn attitude toward a particular topic use the computer as a tool to get their jobs done. Their main discipline may not be computing. While they may want to learn, they don't have time; they just want to get the job done. They need quick, how-to-do-it information without a lot of explanation.

Want-to-Learn Attitude

Users with a want-to-learn attitude toward a particular topic want to spend their time learning about the topic in depth. These users need documentation that teaches the use of computers and software by developing an understanding of computing concepts and providing a foundation for generalization.

Know-What-I-Want Attitude

Users with a know-what-I-want attitude toward a particular topic are generally knowledgeable in a specific computing area and simply want to look up particular information. These users need documentation that provides detailed and complete information.

PLAN FOR USER DOCUMENTATION

What resulted from classifying users by the attitudes they bring to computing was a comprehensive documentation strategy in which we identified four types of documents:

- * Catalog (for all users),
- * Quick Steps (for the no-time-to-learn attitude),
- * Learning (for the want-to-learn attitude), and
- * Reference (for the know-what-I-want attitude).

Catalog Documentation

Catalog documentation helps all users select the systems, libraries, utilities, and documentation they need. It compares system and software capabilities in tabular and textual forms. It may describe computing concepts that users must understand to make their selections.

Quick Steps Documentation

Quick Steps documentation shows users with a no-time-to-learn attitude what to do without explaining it. There is little reading, and there are many examples. Development of Quick Steps documentation is appropriate for systems and software that are used by many people.

Learning Documentation

Learning documentation teaches the use of computing in the ICN by developing an understanding of computing concepts and providing a foundation for generalization. Learning information can be provided in a variety of forms, including tutorial manuals, computer-assisted instruction, and live or videotaped courses. Development of Learning documentation is appropriate for computer systems and software that are frequently used and where in-depth understanding by many people would be useful.

Reference Documentation

Reference documentation gives complete, detailed information about a computing topic. Reference information can be provided in a variety of forms, including comprehensive reference manuals, quick reference cards, online help, and glossaries. It is useful for users with a know-what-I-want attitude; they are generally knowledgeable in a specific computing area and simply want to look up particular information. Most computing topics require Reference documentation.

CONCLUSION

Since we implemented the documentation plan, we have produced documents in each of the documentation categories. Our strategy seems to be working, and we've received lots of positive feedback. As we continue to find out more about our users, we may find that they need additional documentation types. Also, as we put more and more documentation online, we might find that the users needs may change.

The key to designing, developing, and producing online and printed documentation that will be used is understanding the attitudes that the users bring to computing.

SUGGESTED READING

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BIOGRAPHY -- Jeanne

Jeanne M. Hurford has worked in the Computing and Communications Division of the Los Alamos National Laboratory, in Los Alamos, New Mexico, since 1975. For ten years, she was a member of the Computer Graphics Group; she wrote and edited documentation for the computer graphics users at the Laboratory.

For the past several years, she has been a member of the Computer Documentation Group where she leads the Computing Information Center. The CIC distributes documentation and software to over 8,000 users of the Los Alamos Integrated Computing Network.

Ms. Hurford is a member of the National Computer Graphics Association (NCGA), the Association for Computing Machinery (ACM), the Rio Grande Chapter of the ACM, the Society for Technical Communication (STC), the STC New Mexico Kachina Chapter, the Special Libraries Association (SLA), and a former member of the Association of Information Systems Professionals.

BIOGRAPHY -- Cheryl

Cheryl A. Ramsey has over 15 years of experience in computing including programming, technical writing, consulting, and training. For the past three years, she has been a member of the Computer Documentation Group at Los Alamos National Laboratory. Ms. Ramsey leads a team of computer documentation specialists who are responsible for designing, developing, and writing online and printed documentation for over 8000 users of the Los Alamos Integrated Computing Network.

Ms. Ramsey is a member of the Association for Computing Machinery (ACM), the Rio Grande Chapter of the ACM, the Society for Technical Communication (STC), the STC New Mexico Kachina Chapter, the Institute of Electrical and Electronics Engineers (IEEE), and the Computer Society of the IEEE.