Many information-development managers not only find the localization and translation process confusing but also find it difficult to keep abreast of the ever-changing terminology. Many managers have only recently been challenged with translation responsibilities as their companies increased sales to countries without strong skills in reading and understanding English. In my years of experience in the translation industry, I noted that a great many misconceptions exist regarding the terminology of localization and translation and the translator's role.

Involvement with localization and translation offers a unique opportunity for information-development departments. The translation process provides a way to measure how well a document has been written and provides incentives to improve documentation quality. Not only do quality measurements affect documents, they are equally important in judging the efficacy of online documentation and help screens as well.

Before looking into the details of localization and translation, we need to review terminology and find out why one company refers to localization and another to translation, when it appears that they may mean the same thing.

**Terminology for the Common Communicator**

*Translation* is a generic term for converting a written document from one language to another. (If the conversion applies to spoken language, we speak of *interpreting*, which is carried out by interpreters, who receive special training for this difficult task.) Some refer to translation as the second oldest profession, because it has been a necessary part of intercultural transactions since ancient times. Even the Tower of Babel could have profited from a few discrete translators.

*Translators* are the professionals who carry out this language conversion. A translator always works into his or her native language, called the *target language*. Most translators work from one or two *source languages*, the languages of the document to be translated.

*Localization* (localisation is the British spelling; the word is borrowed from the French) is a related term now being used in two ways.

- *Localization* has at least partially replaced an older term in the translation industry, *adaptation*. A document can be adapted to fit a certain target market, which means that all necessary conversions are made. This conversion takes into account local customs, currency, phone numbers, icons, preferences, and so forth. Localization of a manual for Mexico would be different than one for Spain, for instance, even though both would be translated into Spanish. Localization is most important for marketing literature and for technical documents that include measurements or specifications that need to be converted.

- Within the computer industry, the term *localization* often refers to the translation of what appears on the computer screen and, by extension, translation of the manuals accompanying the software. The term is used for translation of online help, Web pages, and so on. The implication is that such translation must be a type of market adaptation. For presentation on-screen, additional conversion is often needed. When English is translated into French, for instance, the text requires more room on the screen because a comparable passage is longer. Graphics may have to be adapted as well.

*Continued on page 3.*
From the Director

JoAnn Hackos

Dear Friends,

Benchmarking, why is it important? Your marketing department has a substantial research budget to learn about customer requirements, the state of the industry, and the activities of its competitors. Unfortunately, this research rarely, if ever, considers issues related to training and documentation.

Where do information-development managers get the research data they need? How do you get answers to your questions?

- How are we finding qualified people in this seller’s market?
- How much do we have to pay in salary and benefits to attract the people we need?
- Are we better off reporting to engineering or marketing or somewhere else?
- What tools are other departments considering?
- Which technologies work and which ones create problems?
- What is the role of an information architect?
- If we move to single sourcing, does that mean our writers lose their creativity?

It should be clear that you cannot answer these questions by collecting anecdotes from managers you have never met or talked with. The responses of a few people over a listserv rarely provide a comprehensive and balanced view of the field.

Nearly every day, I receive emails from managers who are asking me for answers to these and other questions. Sometimes I feel like the Ann Landers of information development. Fortunately, we have the opportunity to visit information-development organizations all over the world and meet with managers at our conferences and workshops. We collect information through surveys, interviews, and site visits. That’s what the Center for Information-Development Management is all about.

It should be obvious to all that this insight and information resource requires a financial investment. It takes time and money to keep abreast of the trends and developments in our industry. The resources to conduct research in information development don’t come from government grants, from STC, or from benevolent benefactors. The funding comes from—You!

We at Comtech are in the early recruiting stages of several important benchmark studies for 2001. We’re preparing several key white papers that will be offered to information-development managers during the year. We need your support, but we also need your funding.

Sometimes I worry about the naiveté that many of our colleagues display. They believe that research and analysis is something they deserve automatically. I once suggested to a manager that he subscribe to this newsletter to get the salary data he was looking for. He wrote back that he thought the data wasn’t worth $99.

Here are the planned studies that we need you to support:

- A new single-source benchmark for 2001 to bring us up-to-date about development in this exciting new area
- A study of best practices in customer contact
- The development of a tool for measuring the usability of our information
CIDM members who work in the computer industry primarily refer to the activities they manage as localization. This term is used even for manuals in which very little real adaptation takes place. In other software-oriented areas, such as telephony, the term is not used as frequently. Some managers are firmly staying with the term translation even in areas where localization might be properly used.

A third term needs to be mentioned here as well: globalization. Globalization means that the software user interface and accompanying documentation are created in such a generic way that they could apply to any country or situation. This generic communication can be translated into other languages without being localized, since it avoids any country-specific elements. Globalization is the opposite of localization. The term internationalization is also sometimes used in the same way as globalization. For instance, in a globalized product, you would find no references to time or date or anything that would restrict the software to one locale.

**Most Common Ways to Handle Translation**
Among our CIDM member companies, we identify several ways of handling translation work (I am using the word translation here in a general way, to include localization as well).

- **Quality.** Over time, you can develop an excellent terminology bank specific to your company and industry. You can also control editing and quality checking. As translators continue to work with a family of related products, they increase their understanding of the products and begin to function with some of the expertise of technical communicators.

- **Speed.** You waste no time in handoffs to outside vendors, which smooths the workflow and avoids unfortunate process breakdowns. Your team members are thoroughly involved in planning and coordination. You can calculate exactly how many people you need on staff to release your translated documentation in a timely manner.

- **Cost.** Large companies with large translation organizations believe they save a great deal in costs to the company, considering the fast delivery times they provide.
On the other hand, in-house translation organizations have problems to grapple with. Their initial set-up time is long. Creating a component translation organization requires a significant effort to find people with fresh language skills (some companies bring them directly from the target countries) and to keep the translators’ language knowledge up-to-date in new areas. The Web may help translators remain current in their native language and aware of changes in the specialized terminology in their technical field. Customized tools aid timeliness and increase production capabilities, but they are costly and take time to develop. At some time, a manager may be faced with a fluctuating work schedule for the department. He then has to look for creative solutions to keep everyone busy during down times.

Outsourcing relies on a partner's expertise
A second approach many high-tech departments take in handling translation is to outsource the translation work to one or more of the large translation/localization vendors. If you choose this option, you usually keep a small staff at your own company to coordinate with the vendors. If there is enough work, this staff may even include two or three translators. All other translation work is sent to the translation vendors you have selected. If you choose to do so, you can work very closely with the translation companies. The advantages to this method are also considerable:

- **Responsibility.** By relying on the expertise of experienced vendors, you no longer need to find and hire translators. The vendor you select should have access to many translators with expertise in your technical area. The number of translators working on your projects can grow and shrink as needed.

- **Flexibility.** The vending agency can put together a large team quickly. It can provide expertise you may not have in project management, scheduling, editing, and quality control. The agency can often cover almost all languages you may need.

- **Quality.** The vendor takes responsibility for the quality of the translation. They provide a terminology bank, may build a translation memory database, and have technical capabilities that allow them to handle the complexities of software localization.

- **Expertise.** The translators employed by the translation vendors often work in their own countries. They have constant exposure to changes in language and culture. They are aware of nuances in the terminology of their specialized fields of technical expertise.

Translation vendors frequently have offices in major cities around the world and the ability to draw on hundreds of translators in many countries. They often maintain a few translators in house to coordinate large projects, perform quality checking, and so forth, but they basically contract with freelance translators. Freelance labor is the most common way translation is handled around the world. Because the cost of outsource vendors includes project coordination, quality control, and technical capabilities, the cost may be more than you might pay for in-house translation, especially if you have very large volumes of translation work.

What a Translator Really Does
The translator tends to be the most misunderstood part of the localization and translation puzzle. Many of our technical colleagues and
penny-pinching corporate managers believe that anyone who knows a language can be a translator (including the boss’s cousin Luigi). Fortunately for the quality of the work, translators are highly-skilled language professionals. They are often members of a professional association. Here in the United States, many belong to the American Translators Association (ATA). The ATA Web site has a listing of freelance translators with their languages and specialties. As I mentioned earlier, translators have expertise in usually no more than two source languages and translate into one target language, which is the translator’s native language.

Translators also specialize in subject matter. For instance, I recently talked to a freelance translator who specializes in patents in French and German, which he translates into English. He also does a great deal of computer software translation into English. Another may specialize in telephony and transportation. In-house translators may specialize even more.

How does the translator translate? A translator first must understand the sentence to be translated and then recreate it in that target language. If the terminology is difficult, the translator may have to research the terms. It becomes abundantly clear that the translator is greatly affected by the quality and clarity of the original language. If technical writers write a vague passage in English because they do not understand what was going on technically, the translator pays the price in the end. It is often impossible to recreate the same vagueness in another language. The translator must write something more concrete than what was in the original document. He may be able to make a decision based on his technical understanding of the product, or he may need to go back and query the writer.

The challenge for information-development managers is to concentrate on the quality and consistency of the original writing. Remember that the translator is an essential part of the target audience of the information products that leave your organization.

Another choice offered to the translators is the style or tone in which they write the translation. Most translators try to find a tone that matches the original. But a translation can also be an improvement over the original document in clarity and readability.

For a summary of how a translator works, see the figure below.

![How a Translator Works](image-url)
Our translator receives an assignment in the source language. She may work from both a soft and hard copy. Relying on her language skills, translation expertise, and subject knowledge, she begins the translation. She may have to research the subject further, and she will rely on certain tools to aid her. Most translators use memory software, which presents on the screen the previous translation of a word or phrase in the same document or a suite of similar documents, as well as offering other aids. Some companies have customized memory tools.

The translator has access to terminology lists and language databases. The Web offers even more resources, especially for freelance translators. Freelance translators usually work in Microsoft Word or FrameMaker, and the agencies will do any further conversion (to SGML, for instance). When the translation into the target language is completed, the translator submits it for review. Whether the translation is done in-house or through an agency, a senior translator or editor usually checks the translation before sending it on. Ideally, the translation is also checked in the target country by subject-matter experts. These experts are often staff members of the product organization.

**Machine Translation, Tools, and Controlled Language**

About twenty years ago, several companies were promoting large, expensive software programs for translation. This process is known as *machine translation*. It was not very successful then and seems to have made only limited inroads even today. The syntax of a language requires something like artificial intelligence to be translated effectively, and so far no one has been totally successful at analyzing and recreating language. One translation agency head referred to the output of machine translation as “garbage.” The government is reported to use machine translation to get enough of an idea about the content of a document to decide to proceed with a human translation or not. A few companies are trying with a very limited controlled vocabulary and grammar to make this software usable and cost-effective.

Translation memory tools are very popular and aid translations in both speed and consistency. Companies are also looking at tools that will improve the technical writing quality so that translation is facilitated.

One approach to maintaining consistency in the source language is to employ controlled language. Information developers take a broad view of what controlled language means. For some, it implies what used to be accomplished with a good editor and a terminology list. For others, controlled language is more complex and includes strict grammar rules in addition to controlled terminology. Many who have tried to regulate grammar have given up on that aspect of standardization and are concentrating on using consistent terminology.

**Working Together**

There are many reasons for information-development managers to be interested in translation. If you are not now involved with the translation process, someday you may be. I have recently encountered more than one company that brings in translators together with the developers and technical communicators at the beginning of a project. This group initiative emphasizes the need for clear technical communication. The information developer is responsible for giving the translator a good, clear text to work from.

The tools being developed are interesting, too. The memory tool could help information developers if a version could be developed that keyed on only one language.

As companies grow and expand their markets to many new countries, so translation will grow. And the cost in terms of translation of one badly written paragraph in a software manual will multiply over the target languages. There will be an emphasis on cost-cutting, and information-development managers will need to be aware of the relationship to translation costs. The future is becoming more interesting and challenging all the time.
CASE STUDY

Task Analysis: Discovering What the Customer Needs

Linda Siemers, Publications Manager, Compaq Computer Corporation

One of our goals this year has been to increase our understanding of whether our documentation adequately supports the installation of our file servers. As you know, when you solicit customer feedback, you can receive a stack of customer questionnaires that say “Excellent” and “No problems.” However, when you observe someone using the product, you see a different picture indeed.

We decided to determine our customers’ needs by using task analysis as our survey tool. Task analysis consists of observing the customer using a product to understand the major tasks the customer performs when he or she installs and operates the product.

For example, if you are planning to write an automobile user’s manual, you might decide beforehand that you need to describe how the brakes and transmission work. But when you observe the customer actually using the car, you find out that the customer has to know very little about these topics to operate the car. Instead, you may find that the customer is concerned chiefly with changing the oil and setting the clock.

Generally speaking, task analysis can be divided into the following eight stages:

- Training
- Building a Team
- Defining Goals
- Selecting a Customer
- Planning the Analysis
- Visiting the Customer
- Reporting the Results
- Implementing the Recommendations

Stage 1: Training

Before proceeding, we needed to know the following:

- How to set analysis goals
- How to interest a customer in our visit
- How long we should stay at the customer’s job site
- Who should perform the task analysis
- Whether to videotape the visit
- How to choose a task
- Whether we could interrupt the person doing the task

We couldn’t find an article or a book that gives a step-by-step account of how to do a task analysis. Instead, we arranged for a two-day training session on how to conduct one. After the training, we felt prepared to begin the analysis.

Stage 2: Building a Team

Our next step was to identify a task analysis team from among those who attended the training session. We chose a technical writer (me), a marketing specialist with a background in technical communication and operating systems integration, and a human factors engineer (or ergonomics engineer) who could help us identify which product design features could be modified to make the product easier to use.

The team could have included a hardware and/or software engineer or a customer support engineer, all of whom would be knowledgeable about how the product works. As we discovered, three people can handle the logistics of a task analysis (moderator, videotape recording, and note taker).

Stage 3: Defining Goals

The team decided that the goal of the analysis was to find out whether our documentation supports an easy setup of a file server. We chose this goal because we could perform the observation in less than a day and because we know that the setup of a file server is an important and common task. Moreover, we thought it crucial that the setup function be well supported with easy-to-use and appropriate documentation because the ease or difficulty of the product setup often determines how a customer feels about the product.

In 1993, there was no such book. Now you can find step information in User and Task Analysis for Interface Design by JoAnn T. Hackos and Janice C. Redish and in Contextual Design: A Customer-Centered Approach to Systems Design by Hugh Beyer and Karen Holtzblatt. (See the sidebar on the next page for reference information.)

JoAnn Hackos (Comtech Services, 303/232-7586) conducted the training session.

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CASE STUDY

JoAnn T. Hackos
Janice C. Redish
User and Task Analysis for Interface Design
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Hugh Beyer
Karen Holtzblatt
Contextual Design: A Customer-Centered Approach to Systems Designs
1997, San Francisco, CA
Morgan Kaufmann Publishers
ISBN 1-558-60411-1

After setting this goal, we decided who would play which role during the visit. We each chose roles appropriate to our skills. For example, because the human factors engineer often films people testing products in her lab, she was selected to do the videotaping.

STAGE 4: SELECTING A CUSTOMER
We picked a typical customer: a large corporation with several file servers, whose administrators are experienced with our products. (We hope to visit other customers with different profiles.)

You may feel at a loss to how to find a customer to visit. In this case, we were able to arrange the visit through the Field Support Engineering group. The Sales group might also help you to find a customer to visit.

Good public relations should be a part of the visit. We wanted to do everything we could do to make them feel good about our company. We bought some company coffee cups to give away. We also made plans to buy them lunch and to carry in some pastries for breakfast the second day. After we completed the visit, we wrote them a thank-you note and sent them information that they needed.

STAGE 5: PLANNING THE ANALYSIS
Our next step was to determine how we would observe the customer installing the file server during the customer visit. Here is the schedule:

Day 1. Observe and videotape the customer setting up the server. (The human factors engineer suggested that we interrupt the customer as little as possible to maintain the normal flow of events. We asked the customer only a few questions during the first day.)

Day 2. Interview the file server administrators as a group.

We faxed the customer our questions before the visit so that he or she would feel more comfortable during the visit. The customer had some last-minute qualms about being videotaped, but we were able to quell the customer’s anxiety about the process. We stressed that the videotape session tests the quality of our products, not the customer’s abilities, and that a videotape is more convincing and entertaining than a written report.

We designed our questionnaire to address the actual task: Can the customer install the file server? Examples of our task-oriented questions include the following:

♦ Have you had any problems setting up the file servers?
♦ Is there any information you keep looking for and can’t find?
♦ How do you learn to set up the server?
♦ Do you ever call our Customer Support hotline?
♦ What are you calling about?

We then proceeded with more typical questions addressing the documentation itself:

♦ Where do you store the documentation?
♦ Who uses the documentation?
♦ Do you ever refer to the documentation?
♦ Under what circumstances?
♦ What is your preferred media—print or online?

STAGE 6: VISITING THE CUSTOMER
The most important information we learned is that the customer works in an incredibly hectic and stressful environment. We learned that the customer would benefit greatly if he or she received information on how the product works long before he or she receives the product. It’s almost too late to teach something new or different after the product arrives.

We learned how difficult it is to reach the customer with product information. If information isn’t a part of the process or a part of the product in some way, it’s rather unlikely that the customer will even see a piece of documentation, let alone actually read it. This hasn’t made us quit supplying printed documentation. It’s just made us realize we’re going to have to think harder and plan better.

STAGE 7: REPORTING THE RESULTS
After returning to the office, we immediately prepared an electronic mail message summarizing the major findings and transmitted it. Electronic mail seems to be much more effective than waiting to send out a complete report. We then sent an initial report to interested parties in engineering, marketing, technical communication, and customer support. The report contained the goals of the visit and major findings with recommendations. A few weeks later, we compiled a more complete report and scheduled meetings to show the videotape (with free popcorn!).

STAGE 8: IMPLEMENTING THE RECOMMENDATIONS
We expected to find examples where the information structure for this product wasn’t providing sufficient support. We did find instances where the typeface was too small, where explanatory notes were needed, and where the system didn’t work the way the customer thought it should. We were surprised to find that the customer expects us to provide more information about all our products, not just the purchased product. We were also surprised by the customer’s preference for printed documentation, instead of online documents, for some types of information.

We can now work towards addressing these needs in our new products. Even if you do only two or three task analyses per year, you will learn enough about how your customers do their work to make major changes to your documentation plans and to system features. Good luck!
MANAGING 101

The Care and Feeding of Remote Documentation Teams

Donn Le Vie, President, i2d2 Consulting

Managing remote documentation teams can be a rewarding undertaking. Like anything else, being prepared by anticipating needs, issues, and problems will help avoid the pitfalls of such a monumental task. Each remote site offers its own unique challenges to the documentation manager, whether the sites are at opposite sides of the city or different locations around the globe.

At a previous employer in Austin, Texas, I coordinated the documentation content written by subject-matter experts in Arizona, Hong Kong, Japan, and Scotland, but I didn’t have near the obstacles I had when I had to develop and manage documentation sites in Austin, Dallas, and Cape Canaveral for a different employer. Sometimes it’s a more challenging task the closer these sites are to a centralized location.

Here are three important considerations for those who have been called upon to develop or manage documentation teams in remote non-international locations (international teams are the subject matter for a different column). We’ll explore each in a little detail.

♦ Managing and mentoring new hires and “legacy” technical writers
♦ Establishing a unified “team” environment among remote sites
♦ Aligning the team's operation with the strategic, functional, and corporate cultural needs of the business

MANAGING AND MENTORING NEW HIRES AND LEGACY TECHNICAL WRITERS

Over the course of my career, I’ve interviewed hundreds of people for various positions (many of them for remote sites), and one of the things I and the interview teams had to wrestle with regarding a promising candidate was: “How good a fit will this person be for this team?” It is extremely important to assemble a team of skilled, talented individuals who share a spirit of cooperation and of “covering each other’s backs” during peak periods of project activity. Such a team generally has more success with self-management and also requires fewer “unnecessary” interventions (trips you have to make to the remote site) from you because they are better able to resolve issues among themselves.

When assuming management responsibility of remote team members who report to someone else within the company, it’s wise to keep the best interest of the employees (learned through conversations with former managers and with the employees themselves) and the corporation at the forefront of any changes you plan to make. If you have to make changes, do your best to ensure that the changes simplify things rather than make them more complicated—and announce those changes in person whenever possible. If you demonstrate fairness and firmness immediately, you’ll find that the management end of things is a bit easier as the remote team grows.

Your role as a mentor to all team members is one in which you share your knowledge and experience with employees. You teach by serving as a model; you encourage by supporting and challenging all of your teams; you counsel by listening and advising; and you befriend by accepting the individuals on your teams and relating to them on a personal level.

ESTABLISHING A UNIFIED TEAM ENVIRONMENT ACROSS ALL SITES

This can be one of your toughest jobs as documentation manager. Establishing a unified team environment across all sites involves not only using all communication media available to you but also ensuring that the corporate culture and structure effectively support the remote teams. All too often, “remote” is conceived by those “closer” to the corporate culture/environment (the corporate headquarters) as “different from us.” Such an attitude is one that is divisive and corrosive to the success of

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Donn Le Vie helps companies design, implement, and manage technical and scientific communications solutions. He has been involved with creating and distributing mission- and project-critical information since 1978. Donn's latest book, Designing eCommerce Proposals that Win New Business, will be available in 2001.
remote sites and the teams operating within them.

One way to prevent such attitudes from spreading is to use every communication means available to you. Frequent communication among all sites helps minimize the “us and them” attitude. Use emails and phone calls for daily communication with the team leaders at the remote locations. Use teleconferencing once a week or so for project updates (people can relate voices with names) and videoconferencing on a regular basis (to relate faces with names and voices) to promote the unified team concept. Monthly videoconferencing would be great if your company’s IT infrastructure and budget can support it.

If your company has quarterly or annual employee meetings, encourage executive management to include the remote site teams either by videoconferencing or flying them in if the remote sites are not too geographically dispersed. The emotional and psychological benefits of meeting and interacting with members of other teams help solidify the unified team concept and reinforce the necessary alignment of teams with corporate strategy, function, and culture.

I’d go one additional step and see if the enterprise would support an annual meeting of all technical writers and managers, complete with presentations and facilitated discussions on strategic planning, functioning in a team environment, and other topics. At one time, Motorola supported the Motorola Technical Communicators Association (MTCA), a company-wide organization that met the two days immediately following the annual STC conference in the same city. The presentations and informal discussions from technical writers around the world and in different business units showed where internal standards were needed and where the Motorola technical communications community could offer solutions that crossed many business units.

**Aligning the Team’s Operation with the Strategic, Functional, and Corporate Cultural Needs of the Business**

Some of this information was covered under the previous topic, but let me add that aligning the team’s operation with corporate objectives sometimes means that you as documentation manager will have to serve as a filter for negative gossip, corporate political battles, and other distractions. Such background noise can interfere with the successful operation of remote teams. You can’t completely eliminate such distractions, but you must be able to put a spin on such news that reinforces the best interest of the team members and the corporation.

The Cape Canaveral site manager of a previous employer of mine was also an executive vice president and vice president of Knowledge Systems. He managed a team of a dozen or so very brilliant software developers who were hard at work getting the company’s first in-house product ready for launch. At the time, the executive management team was undergoing internal struggles, and investors were demanding changes, but this vice president shielded his team from all the unnecessary rumors and conversations so they could focus on meeting the product launch schedule. He’s hailed as a hero by his team and others in the company for his ability to put the interests of his team and the company first.

**Conclusion**

I’m running out of column space, but I think that the one resounding theme in this subject is people management, and people respond to the best of their ability when the corporation shows that it cares and helps nurture that success.
Creating Product-Specific Help Using XML

Charles Cantrell, Ontario Systems Corporation

When an application is highly configurable to best meet customer needs, how do you write documentation that will continue to match the application? Technical communicators at Ontario Systems are using three strategies to meet this challenge.

Ontario Systems provides innovative hardware and software solutions to the industry's leading receivables management companies. The company’s healthcare clients are among the nation’s top 100 hospitals, and our third-party receivables management clients include six of the top ten firms in the industry.

To maintain our leadership in this market niche and allow our company to expand into others, Ontario Systems announced that we would release our next generation of products in a “highly user-configurable application environment.” This environment would provide Ontario Systems’ clients with access to powerful component-building tools, allowing our company to customize products to suit nearly any of the workflow demands of our own international and domestic customers.

Documentation Strategy

Because clients would be able to change the look and behavior of our application, the technical communicators determined that our documentation system should be as flexible as the application. This primary goal led our technical communicators to identify three tactical goals for the documentation system:

- assemble it based on installed application modules
- deliver it online from the application
- provide a way for our clients to change our delivered documentation, as well as incorporate their own components

One of the most important elements of this documentation strategy was that documentation would be written as relatively small “components” that could be assembled as needed to produce larger documents. These components would be included in the application and attached to the application modules that were delivered.

Because we would deliver the documentation electronically, the components could be assembled into requested documents based on the delivered configuration, and the documents would be accurate as long as the application was not modified.

To help our clients reflect their changes to the application in the documentation, Ontario Systems planned to provide a method for our clients to document the features they created or modified, as well as a way to integrate their documentation with ours.

If successful, this goal would allow Ontario Systems to meet a long-standing customer request: “Give us the ability to document all of our business processes in your application.” This request occurs because some of the steps of our clients’ business processes do not involve the computer, even though they merge with the computer processes. For example, the current FACS product is used to pursue accounts through the legal system. Some of the steps in the client’s process actually take place at the courthouse or an attorney’s office. Because these steps merge with steps performed on the computer, our clients would like to include them in the documented procedure. However, because these steps are different for every client, the client must be able to add to the documentation themselves.

XML Technology

When we began to consider the technology options, the technical communication team clearly needed a way to treat information content like data. The team wanted to select and control the documentation content in the same way we controlled the application. When researching technologies to support Ontario Systems’ documentation goals, the team realized we would need a way to manipulate documentation components programmatically: to locate and assemble the components based on a user command.

Ontario Systems provides world-class receivables management solutions to organizations that manage large volumes of accounts receivables. These include hospitals, banks, collection agencies, utilities, and leasing companies. As the largest provider of receivables management products, including FACS® and CT Vision®, Ontario Systems is recognized throughout the receivables management industry as the leader in technology and customer service. With operations in Indiana, Ohio, and Washington, Ontario Systems is a wholly owned subsidiary of Ontario Corporation, a privately held company based in Muncie, Indiana.
One possible technology that could meet our goals was SGML (Standard Generalized Markup Language). Yet, while SGML has been a documentation standard since 1986, it has not been widely accepted because SGML tools are generally more expensive than other tools for text editing and SGML is very complex to implement. However, SGML does have the technical characteristics that Ontario Systems wanted. In particular, SGML supports programs that locate and assemble document components.

During our investigation, a related technology, XML, emerged. XML (eXtensible Markup Language) has similar benefits to SGML, but it is less complex and less expensive. Also, due in part to these factors, XML is more widely accepted. As Ontario Systems researched XML, the development team decided that XML fulfilled our requirements, and that the company should continue to investigate XML’s potential.

After some proof-of-concept development, we moved an XML document into a prototype of our new application and used application calls to display the document in Microsoft Internet Explorer 5.5 (IE5). This delivery mechanism extracted and merged information content from the application database, applied an XSL style sheet, and delivered the resulting document to the browser.

**Document Planning**

As our documentation project progressed, the Technical Communication department began to plan the changes that would be required in our work processes. As a part of our planning process, we hired an outside consultant to help us analyze our documents and determine the suitability of the document structure for a single-source environment.

Fortunately, Ontario Systems has been using a consistent format for user guides, reference manuals, and other information products for several years. Ontario Systems has also been using style guides for some time to control the writing styles used by its group of about twelve writers. For this reason, the document analysis work was relatively easy to complete, although the company decided to make a number of structural changes to improve document quality.

Our consultant also contracted to help us write our Document Type Definition (DTD), which is the controlling document used by the XML editor to determine whether a document is valid or not. A valid XML document follows all the structural rules built into the DTD. The consultant’s help reduced the amount of time needed to write a usable DTD.

**Our User’s Editorial Environment**

As we considered ways for our clients to make changes to our documentation and add their own documentation components, we were sure that many of our clients would not want to learn XML or incur the expense of buying an XML editor. We decided to provide, at least initially, a simplified editorial environment.

Our plan, at this time, is to provide Web forms that mimic a simplified version of our DTD. An initial Web form will ask the users to specify the application feature for which they want to add documentation. Once the feature is specified, another Web form will display the current help (if it exists) with a series of fields to complete or change. If the feature has been added by the client, and they have not yet added documentation, a blank Web form will appear. Our client will then edit the documentation in the Web form fields or add new information. When the client submits the Web form, our application will parse the documentation and store it for presentation when help is next requested.

As an enhancement, our application will include a suite of editors for a variety of features in the application. When that enhancement is available, we plan to integrate a full-featured XML editor.
**Remaining Concerns**
During the writing process, our writers grappled with a significant concern. How were they to write components of documentation that would read coherently after they were assembled into an integrated document? Our current approach is to write everything in present tense and make use of a stringent style guide that helps our writers write in a consistent manner. Our writers are used to, and support, this approach because we have been using a style guide for some time prior to this project.

**Conclusions**
Once fully in place, our system will allow us to deliver an application that our clients can modify to process accounts in nearly any part of the workflow process. They will be able to record and track whatever account data is important to their process and control workflow based on that data. Furthermore, using the Ontario Systems documentation system, our clients will be able to maintain the accuracy of their documentation by adding their own components and integrating them with the ones provided with the application.

Those considering implementing an XML single-source system might consider the following recommendations:

- Take time to learn the technology. Do a great deal of reading and studying. Elliotte Rusty Harold’s *XML Bible* provides very useful information. (See sidebar for reference information.)
- Allow adequate time for planning and preparation. Things always seem to take more time than you expect.
- Institute standards-based writing in your Technical Communication department. Implement style guides and structured writing before you start this type of project. They will improve your current documentation and prepare your team for the change.
- Involve your writers in the design and planning phases. If the writers support the project, it will go more smoothly.
- Select good tools and vendors that can provide good customer service and support. You will need them.
- Allow plenty of time for testing and prototyping. Without a prototype, you can’t be certain that your process will work. And, the prototype will reveal problems you didn’t think about.

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**Ontario Systems’ Documentation Process**

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Ontario Systems' Documentation Process
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- **Editor** (FrameMaker, Epic, Adept)
- **Document** (Hynet, Canterbury)
- **CMS** (CMS: Cache)
- **Component Management System (CMS):**
  - SQL API
  - DTD Spec
- **Output**
  - Print
  - HTML File
  - On-Line Help
  - PDF
  - PowerPoint
  - CD-ROM
  - Other
- **ComArchitect**
  - SQL API
  - DTD Spec

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Elliottte Rusty Harold
*XML Bible.*
1999, Foster City, CA.
IDG Books Worldwide, Inc.
ISBN 0-7645-3236-7
Considering the Color-Blind

Imagine your life experience if you saw the world in limited color ranges. Imagine sitting in front of your computer surfing the Web. Most of the pages you visit are illegible because the information is presented for normal eyes only. You can’t see some of the links, can’t read a great deal of the text, and the graphics—there are graphics?! Welcome to the world of the color-blind; it’s not just about driving anymore!


Some form of color blindness affects 8% of men and .5% of women. Being color-blind is not like seeing black-and-white TV. Cones in the eye sense a range of wavelengths in red, green, and blue. In the color-blind, cones are genetically “wired” abnormally and react to a different range of light than they should. Other causes of color-perception problems include tumors, aneurysms, and glaucoma.

There are two types of color sensing deficiency: dichromacy and anomalous trichromacy. A dichromatic person has weakness or severe shifting of the wavelengths sensed by the cones. An anomalously trichromatic person perceives red shifted into green or green shifted into red. Ninety-nine percent of people with either type of color blindness have trouble with red and green. For example, when a dichromatic person sees a green object or text, the green and red-shifted-to-green cones make the object or text appear to be yellow. If the green object or text on a Web site is on a yellow background, the object or text disappears.


Another slightly less accurate method of seeing how your images would look to the color-blind uses Paint Shop Pro 4 or 5.

1. Open your image in Paint Shop Pro.
2. From the Colors menu, choose Channel Splitting and Split to RGB. Three grayscale images are created.
3. From the Colors menu, choose Channel Combining, and Combine from RGB.
4. In the Channel Combining box, remove the check for “Sync blue and green to red.”
5. Choose blue in blue, green in green, and red in green. Now you can see how your images would appear to a color-blind person.

In a survey, Newman asked a color-blind population to evaluate some popular Web sites. Respondents stated that too many Web sites are hard for them to read. For more information, his survey and color-blind questionnaire page is located at <www.newmanservices.com/colorblind>.

Newman has the following advice for designing Web pages using colors that can be seen and understood by all:

♦ Black and white work best.
♦ Initially design your page with black and white, using image, shape, positioning, and text for emphasis.
♦ Use links with an underline or other graphic such as an arrow; links that consist of only a different colored word within a string of text and no underline are not perceived as links at all. (A visual cue, please!)
♦ Links as a menu on one side of the page are helpful.

If you currently accommodate visitors with older 256 color or 640 x 480 pixel screens even though they make up fewer than 5% of cur-
rent Web surfers, you should also consider accommodating the 8.5% of the population having some form of color blindness.

Going Global

Going global with your Web site, e-business, intranet, or extranet means more than just translating from English to multiple languages. Like anything worthwhile, more work is involved than you might initially suppose. Howard Schwartz tells us how to achieve globalization in his article, “Going Global—Hungry for New Markets,” in the September 2000 issue of Web Techniques.

Fifty percent of Web users are from outside the US, and non-US Internet commerce is predicted to increase from 26% to 46% by 2003. Although many people speak English outside the US, English is the native language in only 8% of other countries. With an English-only Web site, you’ll be missing about half the global market.

At Web sites in the native language of users, visitors stay twice as long and are three times more likely to buy—a powerful incentive to go multilingual.

Schwartz breaks the globalization process into two parts: internationalization and localization. These words, he tells us, are “commonly” shortened to I19N (for the 18 letters between I and N) and L10N, respectively.

Internationalization involves re-engineering software to recognize and process different languages. Localization means the varying content, style, and language to meet the preferences of a local people and culture. Localized translations must use the correct dialect and terminology. Localization also means culturally adapting all parts of a product, including the user interface, help, and documentation. Local content may include changes in currency, taxes, measurements, and images and colors.

To internationalize, one must first consider all the back-end systems that interact with your site; can they handle various language character sets, currencies, and so on? Schwartz recommends using the new Unicode standard instead of ASCII. Unicode uses 16 bits instead of 8 and can handle many different alphabets, such as Korean, Hebrew, and Chinese. He also recommends keeping text in a separate, external file or a database so that the text can be translated more easily into all the languages you want to use on your site.

Judging by his focus on the subject, localization is by far the more complex process. First, Schwartz discusses machine vs. human translation: “Grammatically correct localized content requires human intervention.” (Schwartz, p. 56) This quote is one to embroider and put on the wall! It’s an axiom!

Schwartz recommends using repositories of multilingual content for repeated text, a single-source strategy. Multilanguage single sourcing means translating—and paying—once. Since translation costs by the word, single sourcing is a good way to save money.

To determine how much of your content needs localization, Schwartz separates it into categories: global, regional, and local. (Sometimes regional is local enough.) Some content, such as logos and trademarks, aren’t changed. On a regional level, product information, marketing materials, and site interfaces require changes. Local information may need to be written “from scratch” for a specific market. Market-specific items might include local office and management information, in-country promotions, and country-specific legal information. For the translation of localized content, Schwartz recommends using someone who has lived locally for some time. A fluent speaker who has been living elsewhere will be out of the loop on local details, new words, and slang. The localized content supply chain goes from the translators to Q & A, to legal review, and to cultural and marketing experts to ensure accurate and appropriate content.

Schwartz describes three methods of achieving localization. The first method involves using a localization house that sub-
contracts freelancers all over the world. Although the primary vendor provides a single point-of-contact, disadvantages might include less ability to track a project and maintain its quality and consistency. Freelancers may use different software, and different freelancers may be used on each job. Inconsistency in the translation of key concepts could result.

The second method involves using in-house translators. The advantages are increased control of content, tracking ability, and consistent translations. However, the disadvantage is in not using someone native to the area.

Schwartz’s third method, and the one he not surprisingly recommends, is an approach using a Web-based repository that allows for centralized control while sharing data with freelancers from all over the world. By using workflow software, work can be automatically routed to the next step in the localization process.

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Authoring Tools Survey Report

Julie Price, Comtech Services

Introduction
In November, the Center for Information-Development Management launched a survey regarding authoring tools. Although this survey is by no means comprehensive, we hope that the information we gathered will give our membership and participants a snapshot of the industry as it stands now and a taste of where the industry is moving.

Methodology of the Survey
The Center for Information-Development Management (CIDM) made a brief seventeen-question survey available to both members and non-members from November 3 to December 1. The survey was organized to obtain a sampling of the industry. We restricted participation to one participant from each department so that results would not be skewed by the participation of many members from the same department. Nineteen of the 123 responses we received were discarded for this reason.

From that data and from our own experience working with information-development departments from around the world, we are able to analyze the results and draw conclusions.

Findings
The actions of the information-development departments closely parallels the technology customers described in Geoffrey Moore’s Technology Adoption Life Cycle in his book, Crossing the Chasm, and can be better understood in light of Moore’s model. (See the sidebar for reference information and see the figure on the right side of this page.) Innovators and Early Adopters are beginning to use XML, the Early and Late Majority are using Adobe FrameMaker (63%) and Microsoft Word (55%). Some respondents (20%) are using SGML (some of them in conjunction with Frame) and slightly fewer, the Innovators and Early Adopters, are using XML-based tools (18%).

Presently, a small number of respondents, the Laggards, are using older or unsupported tools such as Interleaf, PageMaker, and WordPerfect. The vast majority of respondents, the Early and Late Majority, are using Adobe FrameMaker (63%) and Microsoft Word (55%). Some respondents (20%) are using SGML (some of them in conjunction with Frame) and slightly fewer, the Innovators and Early Adopters, are using XML-based tools (18%).

Standardized templates are more the rule than the exception for the departments surveyed. If your department is not using a standard template for authoring, you are in the 8% minority. Ninety-two percent of respondents are using a standard template and have someone chiefly responsible for maintaining it. Not all who have standardized templates actually monitor compliance with it (83%).

Over the past year, 80% of respondents have remained with their primary authoring tool. Twenty percent have changed tools. Some of those who have changed tools have moved from outdated tools to majority tools. As one respondent said, “Adobe FrameMaker is the industry standard,” a statement validated by our survey results. Others who have changed tools in the past year have forged ahead into

Geoffrey A. Moore
Crossing the Chasm.
1991, New York, NY
Harper Business.
the world of the Innovators and Early Adopters by testing and using XML.

Respondents use Adobe FrameMaker and Microsoft Word for the same reasons. For both tools, stable functionality, company requirements, and ease of use were ranked at the top. However, Word and Frame users both want new functions in their tools as well as increased ease of use. As for the older tools such as Interleaf, respondents say their company requires their use, but they find the tools hard to use, they want new functions, and for Quark particularly, they want bug removal. Current use of Arbortext Editor appears to be mostly in the piloting or testing stage. Users of Arbortext ranked stable functionality first but say it needs some improvement in ease of use, functionality, and bug removal. These issues are exactly why the Late Majority adopts a "wait and see" attitude, only moving to new technology when the wrinkles are all ironed out. These test pilots are performing a service to all by refining the tools so that the Early and Late Majorities can accept and adopt them.

Reasons given for use of XML–based tools were interesting. Comments were mostly along the lines of “We plan to in the next year,” “We’re investigating the possibilities now, but have not decided yet what to use,” and “No, but we are looking at XML-based authoring tools.” These comments are obviously from the fence-sitters in the majority. Some reasons people are using XML include client requirements, flexibility, future growth, output to multiple platforms and media, re-use of content, and producing custom documentation for clients.

SGML use is primarily driven by customer requirements. We typically note its use in federally regulated industries such as airline and automotive. Some departments use Frame+SGML as an intermediate step on the way to or instead of adopting XML.

In the next year, most respondents (67%) indicate they plan to continue using their primary authoring tool. Almost exactly half of that (33%) plan to change tools. Those continuing to use their primary authoring tool into the next year include about half of Microsoft Word and Adobe FrameMaker users. This more conservative group represents the Late Majority. The other half of Word and Frame users plan to change tools in the coming year. This group, less reluctant to change, represents the Early Majority. One Early Majority comment of note: “[We’re] waiting until Web content standards are more firm, and XML authoring tools are tuned better to these standards.” The Early Majority is evaluating and testing XML with plans to move to it for single sourcing. On the conservative side of the bell curve, one of seven Interleaf users, one of five PageMaker users, one of eight Quark users, and both departments using WordPerfect will change tools. On the less conservative side of the bell curve, the Innovators and Early Adopters will remain with their XML tools, Arbortext Editor and XMetal.

This point seemed at first to be an anomaly as the figures told us that several Arbortext users were planning to change tools in the upcoming year. Upon further investigation, however, we found that those respondents had listed Arbortext Editor as one of two or more primary authoring tools. Their comments told us that they were in the process of changing to the XML tool and remaining with it next year.
Robert Kaplan and David Norton in *The Balanced Scorecard* make clear that a business strategy is a set of if-then statements that attempt to predict how changes we make to our organizations and people will result in improved financial performance and customer satisfaction for our corporations. For example, consider this cause-and-effect sequence:

If we train our employees to study our customers and their information needs, then they will be able to design and develop more effective information products. If the information products they design are successful, customers will be able to lower their costs of doing business with us and increase their staff productivity in the process of using our companies’ products. If customers are more successful, they will buy more products from our companies and increase our profitability and success.

Although the final measurements of success in this business strategy are financial, note that along the way we will be able to institute many other measurements of success:

♡ We need to be able to evaluate our customers’ satisfaction with our information products.
♡ We need to know if we are effectively developing and implementing new processes that result in increased customer satisfaction.
♡ We even need to investigate the success of our training efforts by measuring to what degree they have succeeded in transforming our organization.

The Balanced Scorecard approach puts teeth behind many levels of organizational planning by accounting for a company’s “intangible and intellectual assets” (“high-quality products and services, motivated and skilled employees, responsive and predictable internal processes, and satisfied and loyal customers”). Kaplan and Norton argue that, in a new information age, we cannot afford to fixate on bottom-line, expense-released, and often lagging measurement systems. We need to find new ways of predicting future success. The authors’ solution is the Balanced Scorecard (BSC).

Traditional accounting measures tell us about what has occurred in the past, not what is likely to occur in the future. But what measures can we use to foretell the future?

**The Four Perspectives of the Balanced Scorecard**

To foretell the future, we need to approach carefully the four key perspectives of the BSC:

♡ Financial
♡ Customer
♡ Internal Business Process
♡ Learning and Growth

The BSC’s key perspectives are derived top-down from our vision of the future and our strategy for getting there. (See the figure on the next page.)

♡ Financial perspective—Are our actions contributing to the company’s bottom line?
♡ Customer perspective—Are our actions contributing to satisfying customers?
♡ Internal-business-process perspective—Do we have the best processes in place to contribute to customer satisfaction and the bottom line? Are we creating entirely new processes to create better products and deliver better service in the future?
♡ Learning and growth perspective—Are our actions with regard to people, systems, and organizational procedures creating long-term potential for improving and growing the business?
If we develop our business strategy to include all four perspectives and to make measurements everywhere, Kaplan and Norton believe we can achieve a proper balance between outcome measures (customers and finances) and future measures (processes and abilities). Such a balance includes both objective and subjective measures, going beyond bottom-line calculations. At the same time, they ask us to connect our strategic plans to our corporation’s or our department’s financial goals. The authors point out that it is not enough just to improve internal processes; all process improvement and learning investments need to focus on improving the results for customers and shareholders. In planning and implementing a Balanced Scorecard, we need to make sure that all the pieces are carefully linked.

**Why use a Balanced Scorecard Approach?**

I believe that information-development managers can use a BSC approach to both drive and measure the success of organizational change. With the BSC, we can align with our organization’s strategic vision and turn this vision into explicit objectives and measures for our own departments.

Kaplan and Norton like to point out that they agree with the maxim: “Measurement matters. If you can’t measure it, you can’t manage it.” However, they insist that we need more than standard financial measures to evaluate the success of a strategic business planning activity. As many business leaders have reiterated, a focus on financial measures among US companies has increased the importance of short-term gains (the latest stock market evaluation or the results from the last business quarter). Because financial measures are lagging...
indicators (we measure only after the damage has been done), they don’t show what is being created or destroyed by current management actions.

The Balanced Scorecard provides executives with a more comprehensive framework to translate a company’s vision and strategy into a coherent set of performance measures than finances alone.

Remember that a strategy is a set of hypotheses about cause and effect. A good BSC shows how the planned actions are linked in a cause-and-effect relationship. If we do this, then this will happen. However, hypotheses are just that—hypotheses. We need a way to measure outcomes and drive performance improvements if our hypotheses are going to turn into fact.

In many cases, as we plan a business case, we know what outcomes we want:

- Customers who are positive about the information products they receive
- Fewer calls to customer service because answers are found in the documentation
- Faster mean time to productivity because getting-started information is effective
- Less customer down time because information makes it possible to troubleshoot and solve problems more quickly

We know what we want, but we are still faced with a set of lagging indicators. What about the leading indicators? What do we have to measure about the performance of our staff to ensure that we get the outcomes we want?

It’s important to point out a truism that Kaplan and Norton mention—Quality improvements don’t always translate into financial success. Many process-improvement campaigns lead to improved capacity to perform the work (we’re more efficient, we’ve eliminated unnecessary steps), which may mean that we now have resources that are really not employed very effectively. Process improvements mean that we have unused capacity but have realized few actual reductions in spending.

By taking a BSC approach, we link process improvements directly to customer satisfaction and financial gains. We also measure all along the way to ensure that we are spending our process and employee re-skilling dollars effectively.

**Financial Perspectives**

The starting point of any BSC analysis concerns finances. Kaplan and Norton point out that we need to understand the goals of our corporation, business unit, or individual product line. Three financial strategies are typical: growth, sustain, and harvest.

- Growth. Grow revenues, grow sales, invest in new products, infrastructure, distribution, customer relations, and so on.
- Sustain. Enhance profitability. Increase the return-on-capital-employed. Increase the return-on-capital-invested.
- Harvest. Make no significant new investments. Instead, maximize cash flow from existing products.

They point out that in a high-growth environment, a company may not really be interested in controlling the costs of its resources. Rather, it may seek to build resources and ensure that they can respond quickly to changing needs.

As information-development managers in high-growth environments, we need to figure out how to use our assigned resources effectively to ensure that revenues and sales increase. Our businesses’ financial objectives may be reflected in developing new products as quickly as possible or finding new applications of existing products, new customers for existing products, new solutions in which more of a product line is sold, or in shifting the product market (for example, moving a product to less skilled customers and providing more services).

In a high-growth environment, productivity improvements are likely to be viewed as more strategic than cost reductions. Our com-
panies want us not to save money but to increase the revenue generated by each employee. They want us to do more business with the same number of people.

For sustaining businesses, the situation is just the opposite. Because such businesses or product lines are not growing, they look more favorably upon strategies designed to reduce unit costs. The questions asked may include—Where are we spending money? Can we produce more efficiently (fewer people, more output, greater efficiencies)? Can we reduce the cost of a transaction (for example, by moving information online for customer self-service rather than calling a customer-service representative)? Our strategies must be designed to lower the cost of doing business.

If you’re in a sustaining business, it would be wise to investigate the operating expenses of the competition. It will be important to reduce expenses. But any reduction in expenses must be balanced on the scorecard with the quality of customer service and the implementation of efficient processes. Many sustaining companies see operating expenses as a burden that must be contained or eliminated. However, that viewpoint can be counterproductive when quality is reduced beyond recovery. In fact, Kaplan and Norton argue that managers should not focus on decreasing spending but on increasing efficiency. We need to closely examine the benefits being produced and not endanger customer relations by cutting in the wrong places. I have long argued, for example, that bypassing a customer needs analysis is the wrong place to cut costs.

In a sustaining environment, we need to look closely at asset utilization and investment strategies. By measuring and reducing time to market, for example, we can make better use of our people and capacity assets by decreasing the time before revenues are realized. We may also successfully argue for a centralized publications organization so that we can increase the leverage of a capital investment (equipment, facilities, production) by sharing the investment across more of the company. By leveraging a capital investment, we choose not to replicate physical and intellectual assets any more than absolutely necessary.

In both sustaining and harvest lines of business, we need to practice strong risk management around our resource costs. Risk management might include better forecasting of expenses and better project estimating. Our companies want fewer surprises that increase costs unexpectedly.

In a harvest environment, the best approach may be to eliminate costs altogether. Organizations that have decided to orphan (stop making any changes to) harvest products have usually made the right decision by drastically cutting costs.

Thus, our first step in constructing a BSC is to determine the financial goals of our organization and determine how to measure success.

Customer Perspective
If we are to meet our financial goals, we need also to ensure that our customers are well served by our products and services. We measure our success by acquiring new customers and retaining existing ones. We assess customer satisfaction and market share, in addition to measuring the profit that we accrue from each customer segment. We know, however, in information development that mere measurements are not enough. We need to be proactive in ensuring that we provide our customers with value in return for the commerce.

In information development, we attempt to provide value by providing information that will assist our customers in using our products quickly and effectively. We help them to get started through installation and configuration instruction, and we help them perform tasks easily and efficiently by providing the right information at the right time. We also innovate methods of delivering information to our customers through electronic methods, as well as traditional paper-based publications. We attach information to products themselves, provide built-in training opportunities, and even work to make the products more intuitive.

Kaplan and Norton once again ask us to consider how to measure our contributions to meeting customer needs. They ask us to focus on timeliness, quality, and price. In information-development terms, timeliness equals finding ways of delivering information at the time it is needed and quality equals accuracy, accessibility, and usefulness. Price should be measured, not by the price per page of document-development, but by the cost-savings that come with assisting customers in reducing
the cost of implementation and maintenance of our products in their environment.

Information-development managers actively seek out customer measurements of performance, but they would be well advised to consider studying the cost of implementation and use. If a product comes with excellent information resources, customers get started more quickly, require less training, make fewer mistakes, and experience less down time. Each of these measures leads to a lower cost per unit and increased customer profitability. Real measures like these can be shown through customer research more easily than we can demonstrate that excellent information products generate additional sales.

**Internal-Business-Process Perspective**

Perhaps the most exciting aspect of the BSC is the emphasis Kaplan and Norton place on innovating new processes to meet identified financial and customer needs rather than improving existing processes. If we begin by understanding what customers value about information products, we have an opportunity to find new ways to provide information solutions. Although we are all under pressure to reduce cycle time and spending on development efforts, we need to balance these pressures with the importance of developing innovative information products that effectively respond to customer needs. Too often in information-development we argue that because we have to reduce time-to-market, we cannot afford to innovate. However, that conclusion means that we spend time making poor processes more efficient rather than finding better processes that might result in delivering innovative products to customers.

To account for a process perspective, we need to identify the critical processes that we must perform very well if we are to meet the objectives for financial growth and customer satisfaction that we have already identified on the BSC. Once we have identified the critical processes, we need to find ways to measure their success. For example, if our customers value accurate installation instructions, do we have a way to measure whether we are producing them? If we are not creating accurate instructions, do we have a way to measure the effect on our customers? Can we find innovative ways to improve accuracy without increasing costs drastically?

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**Learning and Growth Perspective**

If we want to implement innovative processes and better meet customer information needs, we need the right mix of employee skills. To achieve the right mix implies that we provide employees with opportunities to learn and grow within the context of the organization’s strategic vision. Traditionally we have measured success by evaluating employee retention, satisfaction, and productivity. We have learned that employee satisfaction drives retention and may drive productivity. However, we must be careful to ensure that the productivity is going in the right direction. As we know, employees can be very productive producing the wrong product.

The BSC asks that we evaluate how effective our employees are in directing their learning and growth toward organizational goals. For example, if we want to develop information products that better meet customer needs, we need to put in place new processes, like customer needs analysis. To do so means that we need employees who can perform customer needs analysis and use the results to create new and improved information products. Cadence Design implemented just such a program a few years ago and measured its success by tracking the number of employees who had not only successfully completed training in needs analysis but had also actually completed a customer site visit.

Too often, learning opportunities (seminars and conferences) are simply viewed as perks without a real connection to results. If we institute a Balanced Scorecard, we are obligated to demonstrate how learning has
resulted in growth, how growth has led to new processes, and how new processes have led to improved customer measures of satisfaction with learning products.

**Outcome Measures Are Not Enough**

As you plan your BSC, remember that measuring outcomes is not sufficient to evaluate the success of your new business strategy. Outcomes are often too late. As lagging indicators, they tell us only what went right or wrong. They give us no tools to judge current performance or ways to predict the future. Every BSC must include, indeed focus on, the leading indicators that drive performance. We must take time to decide what change will look like as it happens. Will we see more staff members engaged in creative information design? Will a significant percentage visit customer sites and learn about information-use patterns? Will we find more staff anxious to change what they write and how they deliver information? Such evidence is the proof we need to show that our attempts to institute new processes and engage in strategic learning have paid off.

The Balanced Scorecard is a great tool for information-development managers. By implementing a BSC, you demonstrate how closely your organization is aligned to the goals of your corporation.

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**MANAGER’S CALENDAR**

Please visit our Web site [<www.infomanagementcenter.com>](http://www.infomanagementcenter.com) for more information on these and other events.


- **Studio 2001–The Conference on Designing the User Experience.** March 6–8, 2001, Seattle, WA. Sponsored by Influent. 888-333-9088 [<www.influent.com>](http://www.influent.com)

- **Developing Standards for E-Communication.** March 8–9, 2001, Phoenix, AZ. Sponsored by Seminars in Usable Design, taught by JoAnn Hackos. 303-234-0123 [<www.usabledesign.com>](http://www.usabledesign.com)


