# The Evolution of Strategic Standardization Management

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■ **When we were asked to submit an article, it was requested that it be based on a business case. We chose to write about the evolution of Strategic Standardization Management (SSM)™ because of its importance as a management discipline and methodology in today's dynamic business environment. The concepts behind SSM are based on sound business principles, driven by the globalization of markets, increasing domestic and international competition, a rapidly developing technology, and sophisticated manufacturing facilities, just to name a few. SSM *is not* about standards; it is about leveraging all aspects of standardization in an effort to optimize an organization's global competitiveness.**

This article is based on the experiences of many best-in-class companies, and strongly suggests that, when properly applied, SSM can enhance competitive position. Our primary objective is twofold: to have the reader examine the benefits realized by leveraging the strategic management of standardization and to initiate appropriate analysis and subsequent strategies for implementing SSM.
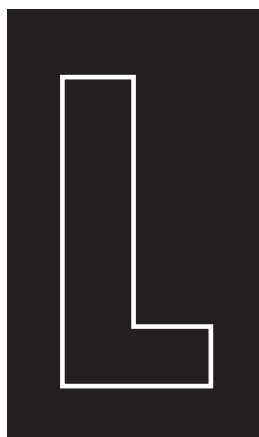
L et's begin by considering a few basic questions to help evaluate management of standardization issues (not standards).
  Does the company

— know what the critical standardization business issue are?
— know who is in charge of coordinating activities on which issue?
— know the potential impact on the business?
— have a strategy and plan for participating in standardization activities, is standardization part of the corporate strategy, part of the business plan?
— know which standardization meetings are attended by which employees?

Does the company
— know that the persons attending these meetings represent a corporate position? (that is the ruling perception!)
— have a process for tracking and budgeting standardization activities?
— know how much it spends on standardization activities?
— know how many people participate across the entire organization?
— know who the people are, what activities they are involved in, and what happens at those meetings?

  In most cases these questions are not easy to answer and, in fact, only a handful of best-in-class companies can answer most of them with any degree of accuracy. But if an organization's executive management were to ask these questions, how much effort would it take to get the answers? Where would one start?
  Most companies today are going flat out to increase workloads and flatten organizational structures. However, being very busy is not a substitute for the need to keep abreast of global standardization trends. Today's global standardization initiatives often

have a significant impact on companies, industries, and ultimately, nations. Efficiently managing and acting on these initiatives is a formidable challenge. The human and capital resources required are more than the vast majority of corporations are prepared to commit, unless the SSM methodology is applied. Such was the case with the work of the International Organization for Standardization (ISO) on Quality Management Systems, now globally recognized as the ISO 9000 series. Although ISO 9000 is still not fully understood, most companies are in the process of obtaining ISO 9000 certification at a significant cost—even though they had little influence in its definition and developmnet. A similar situation has developed with ISO's environmental management system (EMS). This effort is now formalized under ISO/Technical Committee 207, whose output will carry the ISO 14000 EMS series designation. But this time U.S. industry has the opportunity to be proactive in the development of the standards and to influence their outcome.

Lessons learned from the ISO 9000 experience have demonstrated that most companies need a practical methodology and strategy for assessing and managing the broad spectrum of critical global standardization issues. When critical standardization issues like ISO 9000 and ISO 14000 are grouped together with an organization's quality initiative and analyzed with a strategic, unified corporate approach, there is a very different result than the one produced by traditional "engineering standards" thinking. Global issues also require a different discipline and infrastructure for appropriate evaluation and consequent action.

Still, people may say "we already do this well in our company" or "we have a group that takes care of that for us." Answers to the questions at the beginning of this article should provide the reader with an insight to the reality of the situation. In fact, there are horror stories, known to many of us, about critical standardization issues that were mishandled by major companies, and in some cases entire industries, while

Contrast Between the "old" Standards Disipline (Little s) and the New Strategic Standardization Management (Big S)

This chart, adapted from Juran's model* of "old" quality (Little q) and new quality (Big Q) shows the parallels between the quality imperative and the new imperative to rethink the role of standards and standardization in today's global business environment.

Topic	Content of Little S	Content of Big S
Products	Manufactured goods	All products, goods, and services whether for sale or not
Processes	Processes directly related to manufacture of goods	All processes, including buisness
Industries	Manufacturing	All industries
Standards viewed as:	Technical issues	Strategic business issues
How to think about standardization	Based on internal departments	Based on a global perspective
Standardization issues are included in:	Manufacturing goals and specifications	A company's strategic business plan
Participation in standardization activities is directed at:	Product/service performance	Company preformance, competitive advantage, and market position
Evaluation of standardization is based on:	Conformance and compliance	Long-term value to the company
Coordinated by:	Standards managers	A corporate office of Strategic Standardization Management

*Adapted from Juran on Quality by Design, Macmillan, 1992.

FIGURE *ONE*

they believed that everything had been satisfactorily resolved.

We describe events and business objectives that lead to a discipline and methodology called Strategic Standardization Management. Many world-class companies believe that SSM is little understood, and is today where "quality" was in 1975. (See the contrast matrix between "little s and BIG S" shown as Figure One.) History already tells us about the dominating influences of the quality imperatives and the consequences to those companies who have not paid attention to quality.

Paradigms

A paradigm is a set of rules and regulations that establishes and defines boundaries and shows how to behave successfully within them. A paradigm tells you how to play the game, so a paradigm shift is a change to a new set of rules for an existing game. These kinds of changes can create new trends or dramatically alter existing ones [Barker 1992].

All of our data was gathered from business professionals involved in standardization, and confirms a worldwide shift from the traditional paradigms of the role and function of standards and standardization. Everyone may not agree—people who have been practicing successfully within the traditional paradigm may feel they do not need to change. This belief often prevents companies, industries, and even nations from being objective and accepting the new rules. A new paradigm means that both management and standardization professionals have to rethink how the game is played and adjust their strategies and tactics accordingly. There are numerous definitions for what a standard is; however, in order to continue this discussion objectively, we use the following definitions.

— *Strategic Standardization Management.* A management discipline and methodology that investigates all aspects of standardization across a business and/or industry, then defines, recommends, and implements appropriate strategies and policies to leverage standardization so that a firm can gain competitive advantage and avoid disadvantage.

— *Strategic Standardization.* Integration of several standardization products, services, processes, and subsystems to facilitate implementation of a complete system. These systems can then be implemented quickly and efficiently; e.g., McDonald's, Wal-Mart, Marriott Courtyards, Microsoft Software.

— *Standardization.* Development, use, and application of standards in products, services, processes, and systems to attain business objectives (e.g., using nuts that comply to the ISO 4032 standard in the manufacture of a tractor).

— *Standard* (ISO definition). "A technical specification or other document available to the public,

drawn up with the cooperation and consensus or general approval of all parties affected by it, based upon the consolidated results of science, technology, and experience, aimed at the promotion of optimum community benefits and approved by a standardization body" ISO 4032; for example, the standard for a coarse pitch metric hex nut.

Strategic Standardization Management is not about standards. It is a process and methodology consisting of many elements, many of which extend globally, with the potential for a major positive or negative impact. In 1991, key industry leaders had begun to acknowledge the shifts in standardization. In the keynote address delivered at the 1992 American National Standards Institute (ANSI) Annual Conference in Chicago, George Fisher, then chairman of both Motorola and the U.S. Council of Competitiveness, stated that "American companies must understand that standardization is a strategic business issue that has a direct impact on new product development." [Fisher 1992]. Shifts in standardization activities led a core of ANSI company members to sponsor a series of benchmark studies to investiage all aspects of the environment surrounding standardization. This group has taken the lead in a series of major research projects to confirm the paradigm shift from standards to strategic standardization. Their work has contributed greatly to the concept of Strategic Standardization Management and to the formation of a center for SSM to enhance the competitive advantage of U.S. companies through the practice of SSM.

BENCHMARK STUDIES

The studies were performed by a leading benchmark consulting company, with the participation of 28 others. The companies benchmarked had 1991 revenues ranging from $202 million to $123 billion, with annual budgets for standardization from $5 million to $125,000. The benchmarked "Best-in-Class" companies exhibited the following characteristics relative to internal standards:

— The standardization action plan was linked to business issues and strategy and there was a well-documented compliance policy.

— There was a well-defined standards development process, with a focus on efforts to speed up standards development and to reduce cycle time. And there were leveraged centralized standards administration activities.

Relative to external standards, the companies were proactive in areas identified as strategically significant. They were able to identify these areas early on, involve themselves, and thus become influential in them. These companies also made use of the most current standards available.

Of most importance are the key trends identified by the benchmark study:

— Most companies are moving away from using internal, company-generated standards toward external national and international standards.

— External standardization activities focus on business issues such as product acceptance, strategic alignment, and new market entry.

— The role and function of standards and standardization are shifting from a technical to a more business focus.

— Standards are a high-leverage opportunity for most companies when approached on a strategic and anticipatory basis.

— External forces are creating a dynamically evolving standards arena, forcing global standardization.

THE FOCUS GROUPS

Another research and analysis initiative driven by the ANSI Company Member Council-Executive Committee was a series of six four-hour focus group meetings with thirty-five Fortune 500 companies in the first half of 1992. The objectives, in relation to standards and strategic standardization, were as follows:

— to identify corporate "best practices" and "best-in-class" companies; identify how to improve the U.S. competitive position; identify trends and needs of U.S. business in the area of standards, standardization, and strategic standardization;

— to learn of solutions others are utilizing to solve common problems;

— to enable participants to "benchmark" their company's involvement relative to others in the industry.

The key findings of the focus groups were that:

— There are relatively few industries actively using standardization strategically to gain competitive advantage.

— Traditional standards departments, focusing on technical standards only, are being downsized. At the same time there is an increase in the SSM function.

— Many corporations do not know how many of their employees participate in standards-related activities, who they are, nor the level of expense involved.

— Many corporations do not have a corporate policy regarding standardization activities. Generally, decisions are made by local managers.

— Corporate senior management does not clearly understand the value of standardization as an enabler to major strategic business issues. The impact of standardization strategies on global competitive success is all too often driven by daily operating practices and needs, both short and long term.

— There is a need for help in the transition from the traditional standards orientation to the new strategic standardization management orientation.

— Standards themselves are not as important as is guidance to the company from a corporate-level standardization office in addressing critical standardization issues.

— There is a major need for training for participation in national and international standardization activities (e.g., a sense of purpose, negotiating skills, operating procedures). Too many engineers approach the process as a collegial, not competitive one. More than ever, standards meetings are competitive battlefields. This is not evident to the poorly prepared, since much of the key negotiating and alignment takes place before and around the actual meeting.

Anticipatory Standardization Strategies

In the recent past, standards were often published only after a technology had been developed. Today, in the face of rapid technological change, many standards are being defined *before* a product or technology is fully developed. The rise in importance of an anticipatory standards development strategy is a relatively new and critical part of the SSM discipline.

In his article, "The Competitive Advantage of Nations" Michael Porter [1990] suggests that "a company must adopt a global approach to strategy" as a prerequisite for sustaining competitive advantage. He then states the following as part of a global approach:

> Anticipating standards that will spread internationally gives a nation's companies a head start in developing products and services that will be valuable elsewhere. Easing standards, however tempting, is counter productive.

Similarly, Robert Reich, now a member of President Clinton's cabinet, also identified standardization as "one of the six steps along the path to technological preeminence." His recommendation is as follows:

> The U.S. must manage the early adoption of industry-wide standards that render emerging technologies compatible with each other and speed commercial acceptance. [Reich 1989]

Today, standards are often written with a technological bias without ongoing involvement from business management or a continuous customer need process.

Globalization

Globalization of markets and competition are drivers of the paradigm shift as well. An article in *Business Week* [Oster and Gagetta 1992] alerted American industry to the globalization of markets and the related standardization issues. It focused on international business and raised concerns that European standards may be used as trade barriers. Further, it stated

that American industry was showing little concern. According to experts polled by *Business Week,* there is a general belief that the failure lies with American industry because it is not organized to help shape standards or to respond to the introduction of new ones. The next month another article in *Business Week* [Levine 1992] delivered a similar alert. The article, in the Science and Technology section, ran the caption "Companies Can Comply with Europe's Standards or Stay Home." This time the warning was about the ISO 9000 series of quality management standards. We believe that this information further supports the notion that SSM can play a significant role in enhancing a company's competitive advantage. Perhaps more importantly, SSM can provide assurances that the company will not find itself at a competitive disadvantage.

Key Trends in Standardization

The *use* of standards is shifting from internal (company generated) to nationally and internationally accepted standards. At the same time, the *type* of standards activity is shifting from compliant to anticipatory, and the *purpose* of standardization from primarily technical to strategic and business-driven.

These shifts support the finding of the focus group meetings that, in many companies, "traditional" standards departments with a focus on technical documents and document processing are being decentralized and downsized. The exceptions are where standardization activities are aligned with business objectives. These companies were actually increasing standardization activities and staffs. A key trend here is that companies are using the SSM discipline as a strategic management tool to add value to their products and enhance their competitive advantage.

The most significant trend thus far is what some standardization professionals call the "invisible" mega-issues. One of them is the emergence of horizontal sta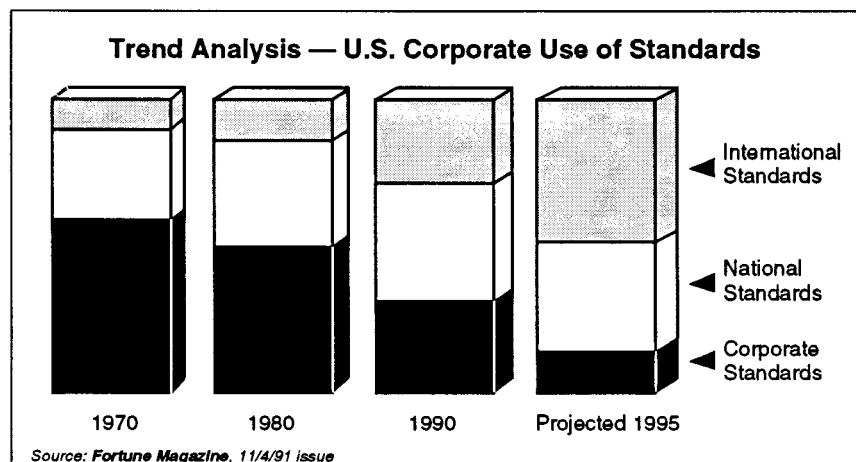ndards that impact the entire spectrum of business activity within a company and are related to corporate culture and the workplace. These standards have a major impact on industry and the world, but somehow companies either do not foresee them or believe that they will remain unaffected by them. The important issues of horizontal standards arise from the implications of their implementation, impact, and possible use.

Questions are often asked about horizontal standards: How much will it cost my company? Why were these standards introduced? Who is the "real" customer? Who stands to gain? What are the consequences of not complying? Certainly these questions are strategic in nature.

One example of horizontal standards is ISO 9000. When a company is ISO 9000 certified, it means that it has a component of a quality management system in place, and is then registered as an ISO 9000 supplier. Most industrialized countries have, to some degree, adopted ISO 9000 as their national quality systems standard. But the U.S. appears to still be enamored with the Malcolm Baldrige Award, Deming's Total Quality Management (TQM), or other in-house quality programs. While none of these standards are mutually exclusive, it is becoming increasingly apparent that ISO 9000 certification will be a requirement to operate globally. Yet, as recently as February 1993, *Marketing News* reported that

> In a recent survey by Grant Thornton of 254 midsize U.S. firms, with annual sales between $10 million and $500 million, 48% of the senior executives polled had never even heard of ISO 9000 and only 8% plan to become certified. What's more, of the ones who said they had heard of ISO 9000, 26% thought it would not affect them at all! [Miller 1993]

The latest mega-issue is the ISO environmental effort. It began with a group called the Strategic Advisory Group on the Environment (ISO/SAGE) which was sanctioned in August 1991 by ISO to "advise" on environmental issues that may require standardization. In

Trend Analysis — U.S. Corporate Use of Standards

International Standards

National Standards

Corporate Standards

1970   1980   1990   Projected 1995

Source: *Fortune Magazine,* 11/4/91 issue

a year's time, the ISO Technical Committee 207 on Environmental Management was formed. This group had its inaugural meeting in June 1994. The committee's scope covers standardization in the field of environmental management tools and systems. The first standards from ISO/TC 207 are expected to be approved as early as 1996. A common belief among standardization professionals is that, in the near future, companies will have to be certified to some type of environmental management system analogous to the ISO 9000 series.

HISTORICAL PERSPECTIVE: INDUSTRY

Before any conclusions are drawn, there is a need to explore some of the reasons why U.S. industry has behaved the way it has in regard to standardization. For quite some time, the driving force of the U.S. industrial engine has been innovation, leading to the formation of new products, services, and companies. Many of today's larger companies were founded by innovators who succeeded because they introduced novel products, e.g., Polaroid. Such products were seldom built on standardized platforms, with little external cooperation. This phenomenon has historical roots in the Sherman Antitrust Act of 1890 and the Clayton Antitrust Act of 1914, which have been legal obstacles to major U.S. industries interested in cooperating with each other. So present laws allow General Motors to engage in a joint venture with Toyota that will effectively attack Ford and Chrysler, but will not permit a joint venture with Ford to repel the Japanese [Thurow 1992]. The result is that the concept of strategic collaboration with competitors has been virtually unknown in the U.S., in antithesis to Europe and Japan where consortia and government support for business are a way of life. This helps to explain, and suggests one reason, why U.S. companies are slow to embrace SSM.

Regardless of perception and behavior, standardization often requires competitors to work together and reach consensus. In this setting, there is a *fear* that standardization is synonymous with little product differentiation, leading to less competitive advantage. Nothing is further from the truth. Standardization and standards are key factors to innovation and are useful as interface facilitators between interacting systems or subsystems of a product. This is important because most companies do not sell products that stand alone, instead the products are usually parts of systems. SSM simply says that "base" components can, and should, be strategically standardized for maximum customer acceptance, global market share, and of course, lower manufacturing cost. Then the "key" components of a product become the differentiators and source of competitive advantage. An example of many innovations within a standardized framework is the film for the 35mm cassette.

There is also a perceived *promise* that standardization can open world markets, lead to increased revenues, and enhance competitive advantage. The *trap*

in this logic is that standardization leads nowhere commercially unless it is intertwined with corporate vision and strategy. The strategic standardization management program *must be* aligned with corporate purpose and integrated with, not separate from, the technical and business strategy.

Conclusions and Trends

Data indicates a worldwide shift in the role and function of standards and standardization. Many forces have created a rapidly evolving global standards environment, some are international horizontal standards initiatives like the ISO 9000 Quality Management Standards and the work of the ISO/TC 207 Committee on environmental management systems. These two international initiatives alone are causing companies to reevaluate how they manage those areas.

The data also shows that future necessary actions by companies will include anticipatory involvement in the development of standards and "constructive" government involvement that emphasizes assistance in, rather than the actual creation of, standards. Government involvement is a definite change from the current U.S. business paradigm. Proof that the government is getting its act together is contained in OMB Circular A-119, a document issued by the Federal Office of Management and Budget that directs all government agencies to create a standard *only* when a private sector standard does not do the job. Each government agency has assigned a person to coordinate the activities pertaining to Circular A-119. Here, the government is leading the paradigm shift with a defined policy.

It is clearly evident that most U.S. companies are not alert to the significance of subtle standardization

Traditional		Emerging
Operational/vertical	→	Strategic/horizontal
Product standards	→	Process standards (ISO 9000 and 14000)
Company standards	→	Industry and global standards
Technically driven	→	Strategic and business driven
Market reactive	→	Market driven/proactive
Stand-alone product	→	Products are parts of systems and solutions
Technology trailing	→	Leading technology
Local/U.S. driven	→	Globally driven
Local manufacturing	→	Global manufacturing
Single issue standard (vertical)	→	Complex issue standards, horizontal (corporate impact, i.e. ISO 9000, etc.)
Single business involvement	→	Multibusiness/ corporate involvement (including competitors)
Standards were the issue	→	Strategic Standardization Management is the issue

Evolution of the Standardization Paradigm

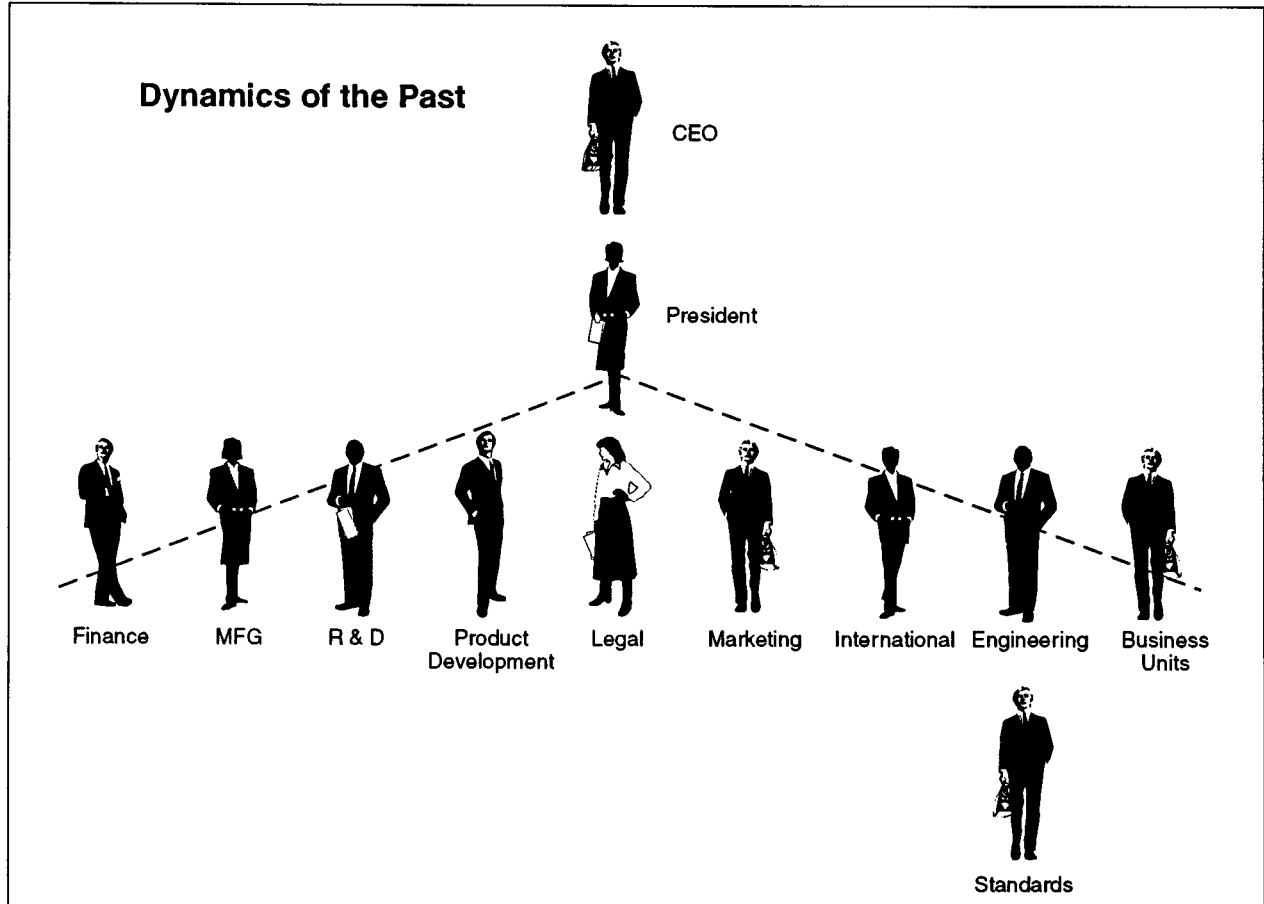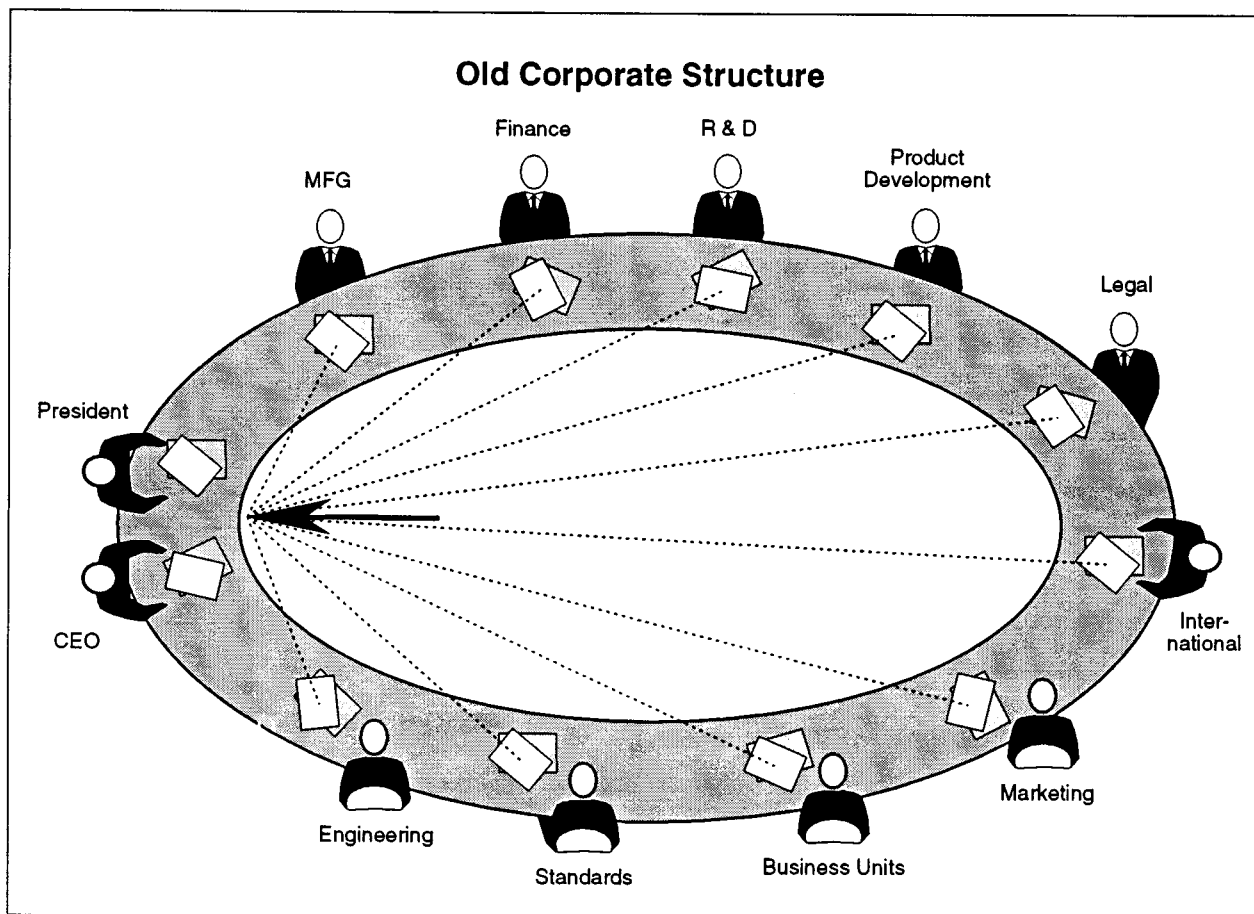| Standards	Standardization	Strategic Standardization	Strategic Standardization Management
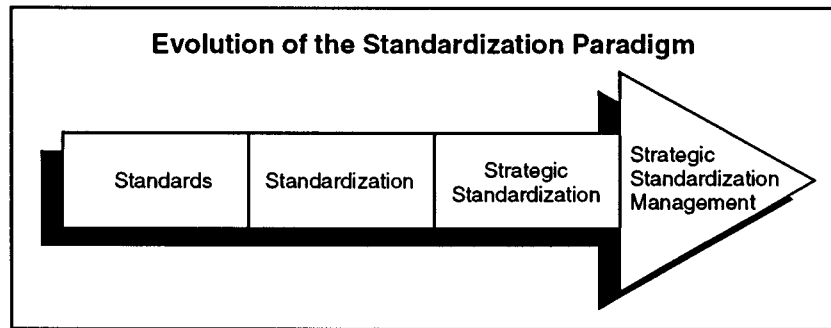
issues that can create competitive disadvantages. This is partly because, in the past, standards and standardization have not been very important to corporate strategy, and hence were not considered at executive levels. However, the recognition of significant paradigm shifts is helping to change executive awareness. Several of the major paradigm shifts are listed in the table on page 122.

The emphasis of the "traditional" standards paradigms was primarily vertical in application, static, and dealt mostly with technical issues. For instance, operating within the old paradigm did not help most U.S. companies learn about, assess the impact of, or participate in the development of the ISO 9000 standards. As the potential impact of these shifts is acknowledged, companies with traditional standards functions and roles are moving to business-driven corporate strategic standardization plans. The new emphasis is global, horizontal, corporate, and strategic in application, as well as anticipatory in nature.

The oldest and most traditional standards discipline is where a standards department reports to another unit with some very specific tasks to perform—typically within an engineering group. This perspective is mostly concerned with technical and compliance issues.

Dynamics of the Past

CEO

President

Finance   MFG   R & D   Product Development   Legal   Marketing   International   Engineering   Business Units

Standards

Old Corporate Structure

The next stage of "standardization" is where more organizations are involved, but in a self-serving fashion. There is little attention paid to cohesive corporate purpose and strategy. The drawback is that there is little coordination. This may lead to, for example, several people from one company attending a standards meeting but remaining unaware of each other. All standardization activities ought to be tied to corporate objectives. They cannot be part of uncoordinated microstrategies.

Finally, research indicates that a centralized office for SSM (or an SSM council as a first step) that gathers inputs from all the units and then recommends a cohesive strategy for corporate and business unit approval can maximize the benefits of strategic standardization. Implementation includes strategic coordination and management of all standards and standardization activities for enhanced corporate efficiency.

With a centralized office for SSM, the process by which decisions are made and the administration of activities is orderly and traceable. Certainly no company wants 100 people making different standardization decisions, yet that is what happens in many companies now, without their being aware of it (as identified in the focus group meetings). Centralized coordination also allows a company to keep track of expenses (something that the benchmark study and focus group meetings identified as a problem as well).

Strategic Standardization Management has emerged as a horizontal management discipline and methodology to investigate all aspects of standardization across a business and/or industry, and to define, recommend, and implement appropriate strategies and policies by which a firm can gain competitive advantage or avoid competitive disadvantage. It is important to keep in mind that SSM applies to other corporate functions such as human resources, finance, telecommunications, procurement, packaging, environmental, and distribution, to name a few, that are generally not considered by traditional standards organizations.

Global companies can realize major benefits if standardized policies and procedures are applied horizontally, where appropriate. For example, a company with facilities in several countries significantly reduced processing time when headquarters implemented a single standardized procedure for accepting requests for capital funds. The new procedure included accepted analysis methodologies and document routing for quick resolution.

An example that begs implementation of SSM is that of a finance organization whose job is to gather the monthly budgets, forecasts, and finance reports from several overseas factories and then consolidate them with domestic financial data for submission to headquarters. For some time each decentralized organization has been delivering financial data to the corporate finance unit in different formats. The finance unit that has to consolidate the data is frustrated because it sees a lack of support and coordination at the highest corporate levels, support and coordination that would make this monthly task tolerable. The irony is that executive management is always complaining that financial reports are untimely and often inaccurate, yet, it cannot clearly address the issue because of long-established corporate organizational obstacles.

Even though there are numerous examples that clearly show the benefits of SSM, the discipline may still be difficult for some people to understand because they hold on to the old perceptions of standards. These perceptions develop into obstacles that need to be addressed and clearly understood.

SOME OBSTACLES AND CRITICAL ISSUES FOR SSM
— insufficient understanding of standardization issues and their potential impact,

— inadequate knowledge of the process (standardization and regulations),
— current corporate culture and history,
— corporate economic condition,
— external and internal operating environment,
— flatter organizations with reduced resources,
— poor corporate coordination of standardization activities,
— inappropriate infrastructure for communicating relevant issues,
— lack of management commitment to leverage standardization,
— poor understanding of the cost of nonstandard approaches,
— using traditional methodologies to measure the value and return of SSM,
— training and education on the importance of standardization, and
— execution and implementation of standardization strategies.

Insufficient understanding of today's standardization issues and their potential impact is a major hurdle for many organizations to overcome.

Structure for the Future
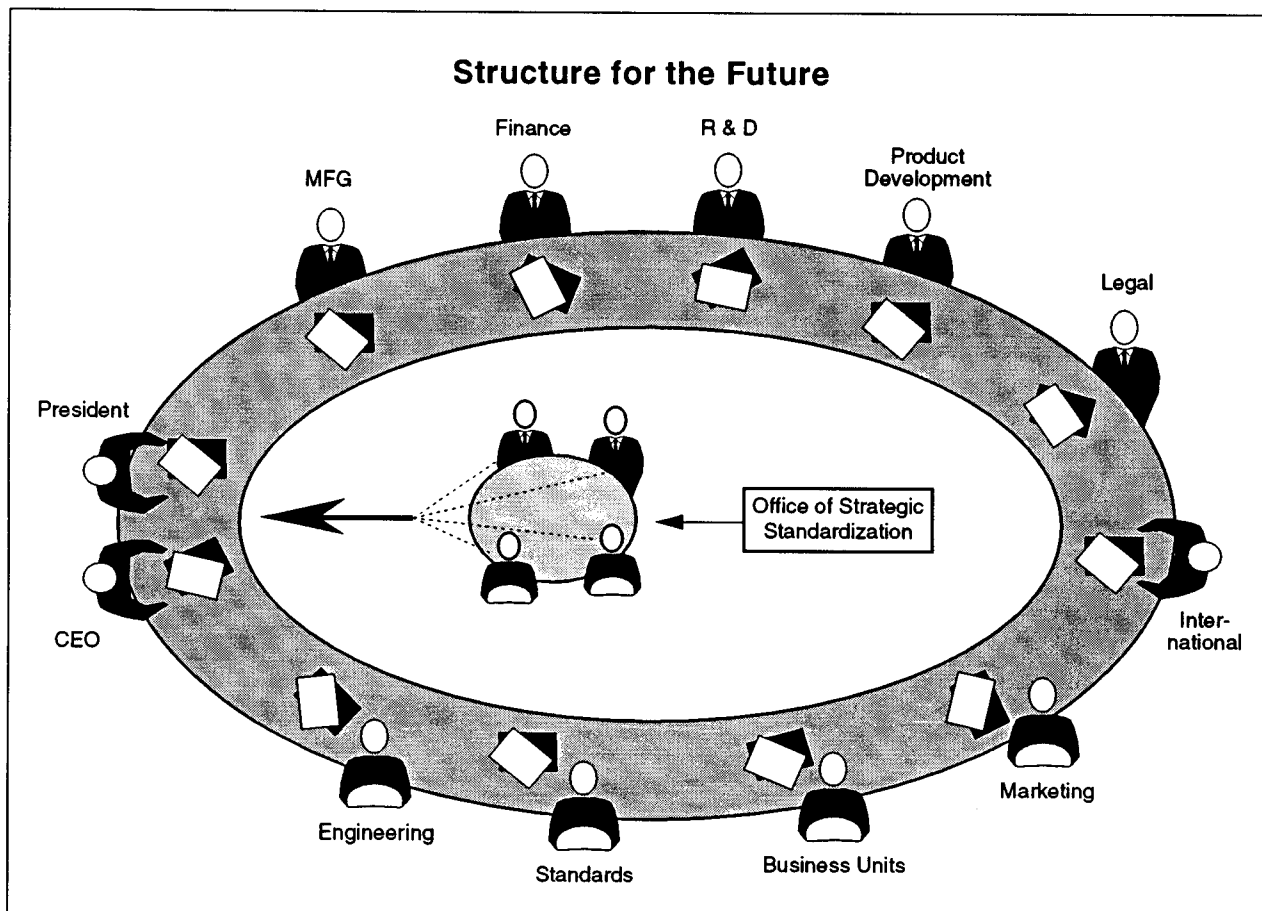
OPPORTUNITIES

Most companies would be surprised to find out how much they can do to influence the world of standardization. SSM can be used to manage a significant number of the elements of the standardization equation to enhance a company's competitive position. To successfully practice SSM, an infrastructure must be created that enables a company to utilize the discipline within the realities and framework of its culture and resources. There is substantial evidence that some changes in management of standardization activities provide significant opportunities for improvement across many other functions and enhance competitive advantage. However, it is important to acknowledge that the internal implementation of SSM will differ depending on an individual company's needs (e.g., the standardization needs of a chemical company will differ from those of a computer hardware manufacturer). Management of standards can be improved by implementing a well-functioning coordinated strategic methodology based on sound business principles. This improvement has been achieved by some companies with a small centralized core group functioning as an office of strategic standardization management and/or a corporate strategic standardization council.

A critical factor that maximizes the benefits of SSM is the ability to influence the development of new standards as part of an anticipatory strategy, especially useful when developing new products. Project managers often say: "tell me what standards our product needs to adhere to and we will do it." That is fine if you are concerned only with compliance. However, compliance is not the only issue for a new product in today's rapidly developing technology. If you can buy the standard, it may be too late. Companies need to know if there are any organizations working on a standard that will affect any aspect of their new product. Companies practicing an anticipatory strategy will join such an organization and influence the development of the standard so that they do not find themselves at a competitive disadvantage.

One of the best ways to learn about the development of new standards is through active coordinated participation in standardization activities external to a company, by joining technical committees and governance organizations. Participation also expands and strengthens relationships with other companies and helps influence the standardization process so as to not be at a competitive disadvantage. The importance of the dynamics of the "off meeting" relationships where many of the decisions are made and alliances formed cannot be exaggerated. Participation increases a company's knowledge of the market, of its competitors, and its customers. To help companies align themselves with future technologies and products requires commitment and continuity.

Enough material has been presented to give the reader a reasonable understanding of what Strategic Standardization Management means and to provide some tools for applications. Models that can lead a company successfully through the different phases of the standardization decision-making process are useful tools; and the authors will present some of them in future papers. (We are currently working on reports that address SSM and new product development, the formation of a leadership team, measuring the return of SSM, and other themes.) If SSM is still not clearly understood as a management discipline, then the lessons of the past and their consequences can provide learning experiences. The threshold issue for companies is acceptance of the fact that the standardization paradigm has changed and that they must adjust their strategy accordingly. It took Deming 20 years before U.S. companies accepted TQM as a management discipline and initiated appropriate action. We cannot afford the luxury of waiting that long for Strategic Standardization Management. **SV**

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