EH&S Management Systems: Easy to Understand, Difficult to Successfully Implement

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Over the past decade and especially since the 1996 introduction of ISO 14001, environment, health, and safety (EH&S) managers have moved toward a "management system" approach to implement EH&S programs. Environmental management systems (EMSs) have the potential to yield significant value through the systematic implementation and continuous improvement of EH&S programs.

The concepts that form the foundation of an EMS are very simple to comprehend and articulate. So too are the concepts underlying many other business techniques such as reengineering, enterprise resource planning (ERP), and total quality management (TQM). Indeed, TQM forms much of the substructure of an EMS. As simple as these business strategies are conceptually, they are deceptively challenging to implement and achieve their full value. Rolling out an EMS is no exception. You may have an EMS in place, but is it delivering the full benefits you expected? This article discusses a number of key, but often overlooked, steps in implementing a successful EMS.

THE EMS EVOLUTION

The EH&S profession has been around since the dawn of the industrial revolution. Only during the past decade has the nature of EH&S work grown so intricate and so integrated with other business functions that management systems are necessary to "keep all the pieces together." Indeed, the authors' primary focus early in our careers was on a relatively narrow list of items: (1) compliance with end-of-the-pipe regulations; (2) pollution control systems; (3) remediation; (4) EH&S training; and (5) crisis intervention. On second thought, crisis intervention was first.

Beginning around the mid-1980s, things started to get very complex. Departments grew, costs escalated, responsibilities overlapped with those of other departments, industry problems got front-page coverage, and management wanted more information and better control. Attention was shifting from end-of-pipe controls to the manufacturing processes themselves. The issues were no longer the exclusive domain of the EH&S staff departments, but were now everyone's responsibility.

Today, there is no shortage of support tools and options to choose from to establish an EMS. This should be easy, right? Well, it is not.

EH&S managers need business skills to manage the issues and identify competitive opportunities. With few road maps, they independently devised management systems to continuously improve their programs. EH&S managers shared their experiences (as they so often do), and a common body of knowledge evolved into guidelines for successful EH&S departments.

By the late 1980s and early 1990s, "codes of practice" that contained many of the basic elements of a well-managed EH&S program started to appear. One of the most widely recognized was the 1991 International Chamber of Commerce (ICC) Business Charter for Sustainable Development (see Table 1).[1] In 1992, the first national standard for EMS, BS 7750, appeared, soon followed by the regional standard, Eco-Management and Audit Scheme (EMAS), developed by the European Union in 1993. In 1996, the first international EMS standard, the ISO 14000 series, was published. Around the same time, literature, training programs, and assessment manuals became available to help design and evaluate progress in implementing an EMS.[2]

Against this backdrop of emerging EMS standards and codes of practice, guidelines on corporate EH&S reporting appeared that further defined key elements to consider when developing an EMS. In the context of shaping an EMS, one of the best of the more than 30 corporate reporting guidelines and standards is the 1994 "50 Reporting Ingredients Model," written by the United Nations Environmental Programme (UNEP).[3]

UNDERSTAND THE *REAL* OBJECTIVES

Today, there is no shortage of support tools and options to choose from to establish an EMS. This should be easy, right? Well, it is not. The authors have found that all too often these programs are poorly designed and executed because of lack of attention to some of the most basic steps.

The most critical step for management, including and *especially* business management, is to clearly understand

Table 1. ICC principles for environmental management.[6]

Business Activity	Principle
Policy Setting	1. Corporate Priority
	5. Prior Assessment
	6. Products and Services
	10. Precautionary Approach
Systems and Procedures	2. Integrated Management
	8. Facilities and Operations
	9. Research
	12. Emergency Preparedness
Implementation and Education	4. Employee Education
	7. Customer Advice
	11. Contractors and Suppliers
	13. Transfer of Technology
	14. Contributing to the Common Effort
Monitoring and Reporting	3. Process of Improvement
	15. Openness to Concerns
	16. Compliance and Reporting

the reasons why an EMS is being established and what will be achieved. Objectives such as, "We need our sites ISO-registered"; "We need to demonstrate environmental excellence"; and "Our competitors have EMS programs and so should we" are common. They do not, however, clearly define

- what executive management *really wants*;
- the EH&S *vision and direction* for the company; and
- what is *fully possible* from an EMS.

For an EMS to be truly successful, an EH&S manager must know exactly what is expected and how the EMS will contribute to attaining these goals.

Obtaining an accurate read on what constitutes success in the eyes of business management can be challenging. For example, the board of directors, the chief executive officer, and individuals within the top management group may have vastly differing opinions on what should be achieved. In addition, EH&S is a sensitive public relations issue. Politically acceptable rhetoric can work its way into what began as clear and explicit marching orders. "Environmental excellence" or "second to none" may be the stated goal, yet the approved budget is limited to actions to maintain compliance.

If there is a disconnect between marching orders and the support for programs to achieve what is defined as "success," managers need to find out what really is going on. Understanding individual expectations will go a long way in minimizing false starts and frustration. This is such an important issue that a future *EH&S Advisor* will be devoted to this topic: working with business management to arrive at a common vision and nonambiguous goals and objectives.

CUSTOM OR OFF-THE-SHELF EMS?

There are many EMS models. Why reinvent the wheel, especially when ISO 14001 is so universally recognized? If your company's primary goal is to attain ISO registration for its facilities, ISO 14001 may be a good choice, but is it the right choice?

In practice, teams implementing ISO 14001 start with—and often get mired in—a complex process of identifying their environmental impact and regulatory obligations. They then add their business needs and some pollution prevention ideas. The requirement in the standard to go through the process illustrated in Figure 1 can make it quite difficult to stay above the detail and develop an EMS with a strategic environmental direction.

The standard does not require that firms establish performance improvement baselines or goals, only that a process is created to facilitate this action. Indeed, compliance with ISO 14001 does not automatically assure basic regulatory compliance. It is a *procedural* standard, not a *goal-driven* standard. It is a good starting tool, but it is not the end point or a substitute for a strategic environmental business evaluation.

Proceduralizing any business activity tends to minimize strategic thinking. In many respects, ISO 14001 illustrates both the best and worst trends in environmental management. At its best, the ISO standard is an excellent, step-by-step approach to an EMS. At its worst, a very narrow implementation of ISO 14001 substitutes a bureaucratic, one-size-fits-all process for a more comprehensive, strategic process. It may create the illusion in executive management that all must be well because the process is in place; management's attention may shift from stretch performance goals to completing a procedure.

Riva Krut, author of *ISO 14001, A Missed Opportunity for Sustainable Global Industrial Development*,[4] noted in an interview, "There is a continual tension between the procedural objectives of the ISO 14001 standard and getting registered; and the environmental performance objectives that are the business of management—and should be the business of any management system."

Indeed, if the entire goal is to get ISO certified, the EMS implementation focus may shift to registration, regardless of actual performance.

We recommend a "back to basics" approach to implement an EMS. Examine all of the possible options and program elements and custom-design your system. Indeed, the process of developing an EMS from the ground up yields much of its value. Bring the participants together to work out differences and set a common framework. Circulating an "off-the-shelf" EMS for approval will never achieve this unity of purpose.

Your company's performance goals and culture should dictate what system is ultimately decided upon. No two companies are identical, so why should every company have the same system? For that matter, the corporate EMS may differ from those within individual business groups or subsidiaries. For

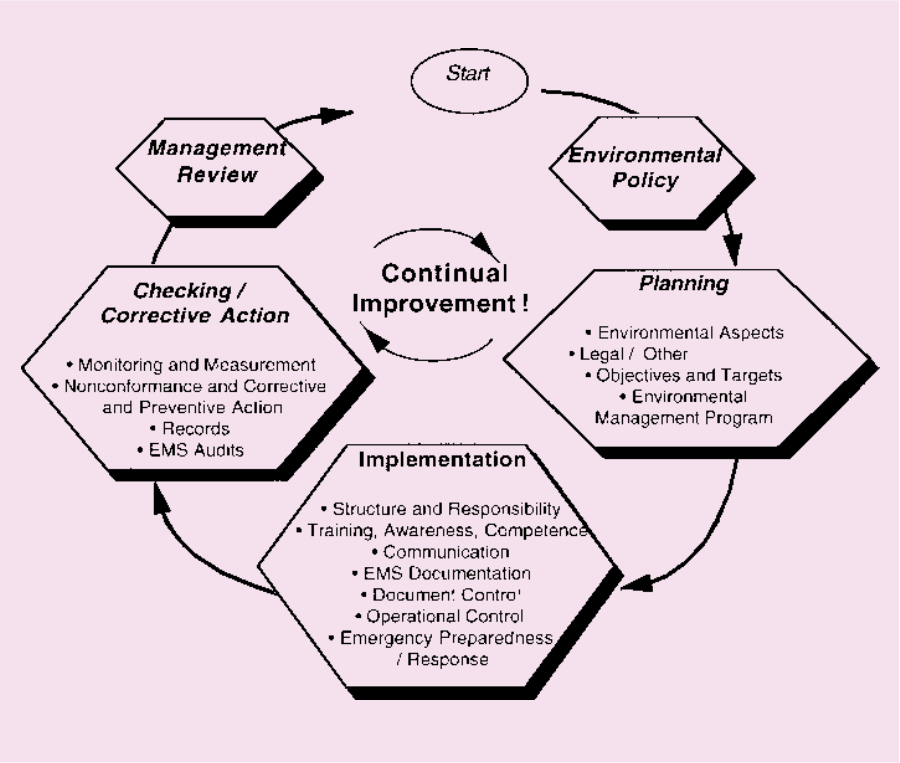

Figure 1. Elements of an ISO 14001 EMS.[7]

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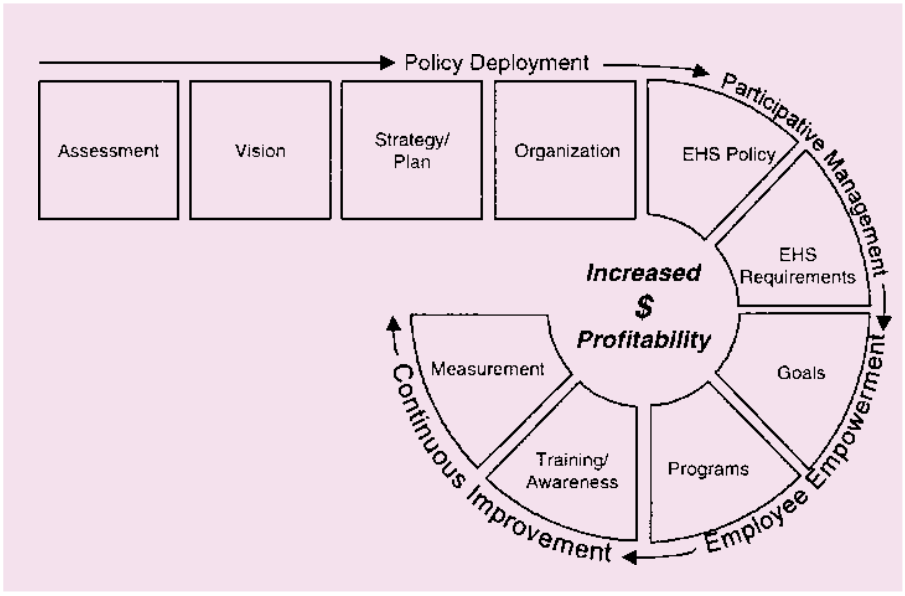

Figure 2. EH&S management system, Anheuser-Busch Co.

example, the corporate EMS may set very specific requirements on *what* must be done (e.g., complete an emissions inventory), but the business groups may differ on *how* this should best be accomplished. You may want to consider getting some outside help to ensure that you are maintaining a strategic focus with no energy wasted in arguments over who should do what and how.

That said, there are common, underlying principles that all well-developed systems should share. Robert Kloepfer summarized these into 10 basic steps:[5]

1. organization and staffing;
2. policies and procedures;
3. planning items;
4. program management systems;
5. review and evaluation;
6. management information systems;
7. budgeting and scheduling;
8. commitment and outreach;
9. legal and regulatory surveillance; and
10. risk and loss management.

The terminology, sequence, and subsets of each element may vary, but overall, each model shares many of the same characteristics.

SEQUENCE MATTERS

Implicit with the previous discussion, it is important to do your homework early in the process and gain a basic understanding of what business management wants to achieve. There is a deliberate sequence, as illustrated in Figures 1 and 2. From a practical standpoint, many elements of an EMS may already exist to some degree. The danger is to jump ahead of the process and commit resources toward refining subsequent steps before the substructure is complete.

The classic error is to initiate a major design of the measurement and reporting aspects of the EMS before it is clearly understood what you are trying to accomplish. In part, this rush to the endpoint may be a result of the tremendous advances in environmental management information systems (EMISs). Indeed, an EMIS can be a unifying structure for your entire EMS and can help

ADVISOR CHECKLIST

Implementing an EMS

1. **Get back to basics!**
   - No matter how well developed your programs are, start from the beginning. Everything is up for reconsideration.
   - Now is an especially good time to rethink the company's policy, vision, and strategic objectives.
2. **Seek business management involvement, including executive management, to define goals and objectives.**
   - Sounds simple, but this is the step most likely to be superficially covered, if at all. A future "EH&S Advisor" will be devoted to working with business management to arrive at a common vision and nonambiguous goals and objectives.
   - Management may have only a vague understanding of the issues and needs. They may need some coaching and options clearly laid out.
3. **Do your homework on EMS design.**
   - There is a wealth of information. The references in this column provide a starting point.
   - The danger is to pick an off-the-shelf model and fail to explore all the options.
4. **Be strategic!**
   - Don't focus on "going through the procedure": it's the strategy, not the process, that is important.
   - If business management appears exclusively focused on one result—having the process in place—you may have a problem. Return to step 1, above.
   - Don't let the information system (EMIS) drive the EMS implementation. Measurement and information management come later in the implementation, after the metrics have been defined.
   - Use an outside sounding board to make sure that you have not overlooked anything or have gotten myopic in your focus.
5. **Relentlessly educate employees.**
   - Full integration of an EMS can take years.
   - Develop a visual to help employees conceptualize how the components work in an EMS in harmony.

facilitate its implementation. But a software system is no substitute for the basic groundwork that must be first done.

RELENTLESSLY DRIVE THE MESSAGE

It is essential to form a shared vision of where the corporation is headed and how the EMS will help get it there. In many respects, this process is no different than the development and implementation of any strategic business plan. EH&S programs, however, have some unique issues requiring additional attention. Management, for example, may be unfamiliar with EH&S practices in general. There may be disagreements over performance metrics. The net result is that unless these issues are addressed early, they will undermine the EMS implementation.

An EMS model helps senior management and others understand how the individual elements fit together as a whole. It also acts as a strategic road map to communicate EH&S goals and objectives. It should define to internal, non-EH&S audiences how these can be achieved in terms that they can understand and in language carefully avoiding environmental jargon. Identifying the issues, carefully considering the program, and documenting the strategy will greatly aid in the communication process—from sitting down with executive management to working with front-line employee groups.

THE ANHEUSER-BUSCH MODEL

Figure 2 presents the EMS model the co-author developed in 1991 to support the various elements of the company's EH&S programs. It illustrates all of the points discussed in this column. For example, this model was developed to serve a strategic business need: to maintain the company's competitive edge. It took scores of meetings with executive management and years of hard work to gain a shared vision of the needs and objectives.

The model was developed years before the ISO 14001 standard, yet it shares many of the same basic elements. This management model was used to achieve the ISO registration of the Fairfield, CA, brewery, the first Anheuser-Busch facility to undergo registration. While this model is customized to Anheuser-Busch's needs, in many respects it is universal, containing in one form or another the 10 key steps described above by Kloepfer. The model has been used for nearly a decade to educate employees and management on the overall system employed by the company to protect the environment and achieve health and safety goals. It has been an enormous help to employees in visualizing the steps that must flow together.

The model has also been useful to drive home the point that the program continues to evolve based on the principles of continuous improvement, as illustrated by the model's "loop back." At Anheuser-Busch, the ultimate compliment came when other business functions began using this same continuous improvement strategy taken directly from the EH&S model principles.

The strategy and plan are constantly evolving in this continuous improvement loop. However, the first two steps in the model—assessment and vision—may need to be revisited if there are major changes in external or internal forces. For example, a company may need to re-assess its current EH&S programs in the context of the movement toward greater emphasis on corporate social responsibility. Whatever model you choose, it needs to be robust enough to handle emerging issues.

CONCLUSION

Business managers do not use "canned processes" to address their unique planning, market forecasting, or other strategic business functions. They may draw from proven management techniques, but ultimately they rely on their own inventiveness to make the strategy fit the company's individual needs.

We recommend that you take the same approach: design a management system robust enough to address the company's

unique needs. First and foremost is to determine exactly what business management wants to accomplish. What *should be* accomplished, considering the full spectrum of emerging issues? Some management education may be in order. How well is the company doing against key indicators, and for that matter, is it tracking the relevant ones? How will all stakeholders in all countries view the company's performance? How will its performance stack up against your competitors' results?

If you get the basics right and you have everyone informed and headed in a common direction, you'll be well on your way to success.

REFERENCES AND NOTES

1. Others include (1) the 1988 Chemical Manufacturers Association Responsible Care Program; (2) the 1989 Coalition for Environmentally Responsible Economies (CERES), formerly the Valdez Principles; and (3) the 1992 United Nations Conference on Environmental Development (UNCED) Earth Summit Rio Declaration.
2. For example, *Environmental Self-Assessment Program* (based on the ICC's Business Charter for Sustainable Development), November 1994 and *the ISO 14001 Environmental Management System Self-Assessment Checklist*, March 1996, both publications by the Global Environmental Management Initiative, Washington, DC.
3. United Nations Environmental Program. 50 Reporting Ingredients Model; 2nd edition; In *Engaging Stakeholders*, Volume 1: The Survey, Volume 2: The Case Studies, 1996.
4. Krut, R.; Gleckman, H. *ISO 14001, A Missed Opportunity for Sustainable Global Industrial Development*; Earthscan Publications Ltd: London, 1997.
5. Kloepfer, R.J. *Ten Steps that Integrate Environmental Management Functions*; Corporate Environmental Strategy, PRI Publishing: Metuchen, NJ, 1995; Vol. 2, No. 4, pp 63-68.
6. Formally introduced in April 1991. Full text available at *http://www.iccwbo.org/home/environment/charter.asp*. The numbers refer to the sequence of the 16 principles.
7. *Environmental Management Systems: An Implementation Guide for Small and Medium-Sized Organization*; NSF International: Ann Arbor MI, November 1996.

Please Ask, Please Tell

Is there an EH&S topic you would like to address in the EH&S Advisor? Do you have information to share with your colleagues, and are you interested in possibly co-authoring a column on the subject? *EM* is very interested in your ideas. Please contact Richard MacLean at phone: (480) 922-1620, or e-mail: maclean @competitive-e.com.

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