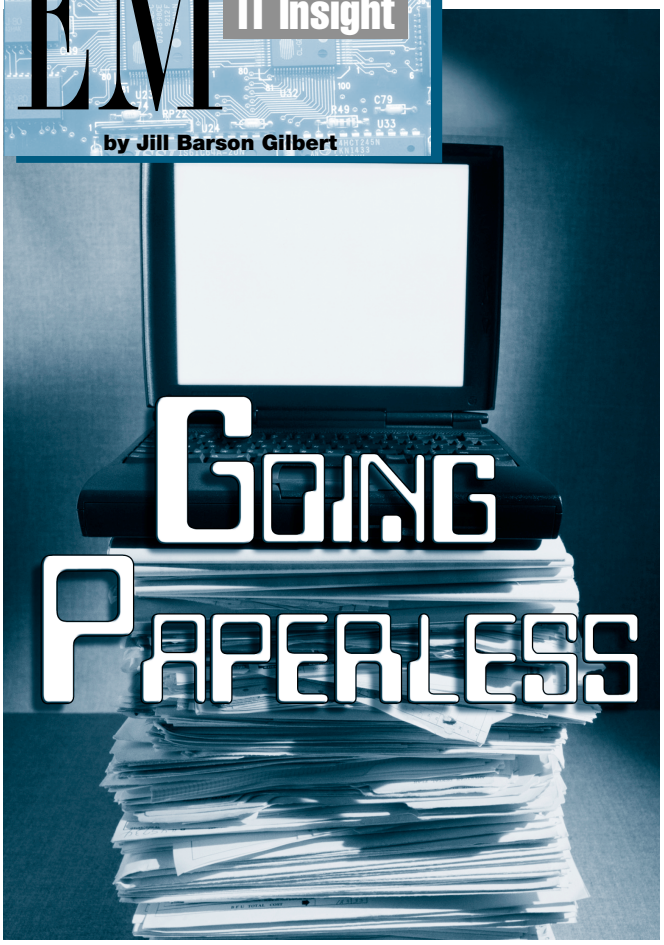
EM IT Insight

by Jill Barson Gilbert



Going Paperless

For the past 10 years, I have helped organizations better manage their environment, health, and safety (EH&S) data, often using computerized systems. For some clients, the transition from traditional (paper) to electronic (paperless) data management systems is far from straightforward. On a recent visit to a Houston area chemical company, I walked into my client's office and could barely see him above the stacks of paper. Since my client's main concern was air issues, we discussed how he planned to demonstrate compliance with the thousands of Title V permit requirements for his large facility. He said something on the order of, "I'll use what I have on my desk; I don't have money for computer systems." Another client recently called in a panic because the company's mission-critical laboratory information management system had "crashed" and they needed a database administrator pronto. The seven-year-old hardware and database were no longer stable, but the company lacked the necessary expertise onsite and there was little or no budget to fix the problem.

If these scenarios sound familiar, you might wonder what you can do to ease the paper burden. And is it possible to live in a paperless EH&S world? This month's column offers observations on making the transition from paper to paperless.

MAKING THE TRANSITION

A number of issues must be addressed before making the transition from difficult-to-retrieve, isolated pockets of *data* to connected, integrated *information* that can be used anytime, anywhere.

- **Early EH&S regulations were developed in independent functional groups within agencies (e.g., air, water, noise, waste), so interactions or impacts on the whole system (i.e., the environment and the community) were overlooked.** As such, installation of a wet scrubber to remove air contaminants potentially leads to wastewater issues, which potentially lead to other air emissions and/or solid waste issues. Our existing EH&S management systems were developed in response to this nonholistic environment—an array of independent paper and electronic systems that don't look at the bigger picture and don't communicate with each other. Only in recent years have we seen multimedia requirements appear in EH&S regulations.
- **Prescriptive regulations result in overlapping, but often conflicting, data needs.** There is only so much EH&S data. Each set of requirements requests the same general types of information from a finite set of data, but in a slightly different way. Paradoxically, this is the type of situation that today's technology tools can easily handle. However, very prescriptive reporting requirements limit the regulated community's flexibility to adopt technologies to help ease the reporting burden.
- **Electronic reporting of EH&S data is spotty at best, and does not take full advantage of today's tools and technology.** Sometimes agencies design to the lowest common denominator to ensure that the entire regulated community is able to comply with requirements. This can result in tools that are outdated and out of step with technologies that the majority have at hand. Some of today's automated reporting tools mimic paper forms originally developed for an old IBM Selectric typewriter, rather than being developed for the Information Age. Consider the Automated Form R (AFR) and the monthly wastewater Discharge Monitoring Report (DMR). Commercially available databases can handle both of these reporting challenges. However, it is difficult to generate the reports in an acceptable format because the reports must be facsimiles of the U.S. Environmental Protection Agency (EPA) forms.
- **Some electronic reporting tools are proprietary.** Technology exists to transmit data directly from the regulated community to the regulators, thus bypassing "paper" reports, but the EH&S community has not adopted electronic reporting standards. An example of a proprietary reporting tool is the air emissions software used in Texas. Such proprietary tools can make it difficult to acquire, implement, learn to use, and maintain the tools. Instead, stakeholders should agree on reporting technology standards

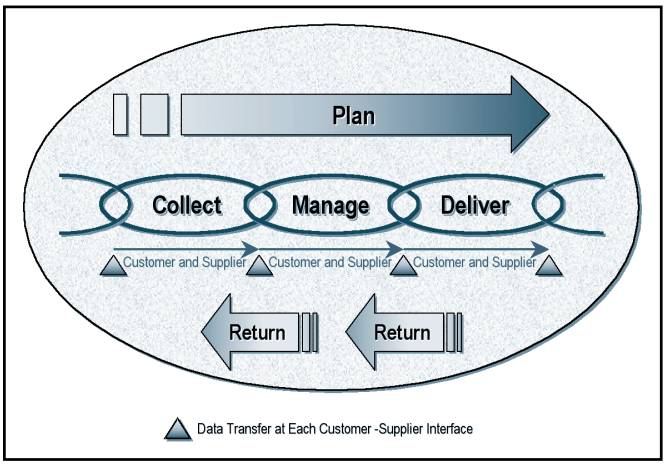


Figure 1. The data supply chain.

and market forces should be allowed to make these tools commonplace, affordable, and easy to use.

- **Information technology (IT) is underutilized in the EH&S arena, with EH&S often the last to gain the benefits of IT.** Automated document management systems, EH&S management information systems, and knowledge management systems are not pervasive, paralleling the way EH&S is viewed in many organizations. Manufacturing, purchasing, accounting, and human resources are typically among the first business processes to get automated, even though EH&S cuts across all of these areas, and more.

Managing *data* to provide useful *information* can be viewed as a data supply chain (see Figure 1). Each link in the chain is both a "customer (user)" and "supplier" of information. The data supply chain entails a life cycle, starting with data generation/collection to management to delivery, along with the ultimate return of data for storage or disposal. Data, left alone and not maintained, at best become outdated or useless, and at worst, a liability. Proper maintenance and management can turn data into valuable information- or knowledge-based assets.

Making the Transition from Paper to Paperless

Taking full advantage of tools and technologies for data entry and retrieval, document management, electronic data import and export, and other aspects of the data supply chain requires a team effort.

- **EH&S professionals** need to take the lead in developing technical standards for managing EH&S data electronically.
- **A team of professionals** schooled in EH&S business rules and processes, IT, and operations should work with the generators and ultimate end users of the data.
- **International standards organizations** should provide guidance regarding standards development and should ultimately publish the standards.
- **Different end-user constituents** should provide input. EH&S data management systems should consider the end users, whether they are people in the community, agency officials, corporate senior management, or shareholders.
- **Educators and trainers** should help to develop curricula and implement training programs to prepare people to take advantage of new paperless technologies.
- **Governmental agencies** that are on the leading edge of data management technologies should share their knowledge with other, less IT-sophisticated, agencies.
- **Hardware and software providers** should be helpful in educating all teams on current and next-generation technologies.
- **Senior managers** need to provide a supportive, collaborative environment to allow the above to occur.

A PAPERLESS EH&S WORLD?

Can EH&S professionals live in a paperless world? Maybe not entirely, but we can make significant advances by automating data collection, storage, management, and reporting processes. The technology exists. I know it's possible, because I've seen complex international EH&S due diligence projects completed for 30 sites in 30 days, without a single paper report ever being generated. I've seen a variety of document types, such as digital photos, text documents, instrumentation diagrams, and Web documents, all accessed from one portal. I've seen the benefits of using "chat" technology to minimize the use of paper, e-mail, and telephone calls. I've seen companies place EH&S documents in electronic libraries, allowing users to access them anytime, anywhere, as long as there is an Internet connection. And I've seen selected governmental agencies make significant progress, serving as true leaders through their IT initiatives. These systems not only fit well with governmental and corporate records retention policies, but also enhance and improve the quality of the information because the systems can archive data when they no longer are needed. This can help organizations minimize business risks and maximize business knowledge-based assets.

About the Author

Jill Barson Gilbert, QEP, is president of Lexicon Systems, LLC. She helps organizations increase business value by designing and implementing EH&S management solutions that leverage technology. A respected author and speaker, Gilbert chairs A&WMA's Information Solutions Committee. She can be reached at *JBGilbert@Lexicon-Systems.com*.