



JANUARY 2017

Transforming a Central Data Repository into a Dynamic Information Management System

A Case Study Featuring The United States Postal Service



This case study is part of NAEM's report on "Approaches to EHS & Sustainability Data Management." This series of case studies explores how organizations from different industries meet their unique data management challenges. To read the full series, visit www.naem.org.

Letter from the Executive Director

If NAEM's benchmarking research has taught us anything, it's that no two companies solve the same problem the same way. Even in a field where environment, health and safety, and sustainability programs often have similar elements, individual leaders need to understand how to adapt core concepts to the particularities of their own company's organizational structure, operations and culture. This is nowhere truer than in the area of EHS&S data management, where commercial software systems offer centralization and automation, as long as practitioners understand their organizations well enough to configure these systems to their needs.



And there is no one practice or approach for solving a complex problem like that.

To understand a challenge like data management, it's useful to hear from a variety of peers, to learn what worked and didn't work so well, and allow their experiences to inform your own. That is what this report is intended to do. As the latest installment in NAEM's research on EHS&S Software and Data Management, this report gives you a peek inside how a diverse group of companies use software tools to organize their EHS&S information and communicate their performance.

In reading through these case studies and interviews, I was struck by what a creative a problem-solver you need to be to find the best solution for your company. Insofar as no two companies are alike, one system does not always fit all. I was also reminded of a maxim that seems to emerge at every NAEM Software and Data Management conference we've hosted since 2001: Data Management is a long-term journey that requires vision, leadership commitment and continuous improvement.

We hope that this report helps you understand how your experiences compare to those of your peers and gives you some ideas you can use to help you refine your path forward.

Sincerely,

A handwritten signature in black ink that reads "Carol Singer Neuvelt". The signature is fluid and cursive, written in a professional style.

Carol Singer Neuvelt
Executive Director, NAEM

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The National Association for Environmental Management (NAEM) empowers corporate leaders to advance environmental stewardship, create safe and healthy workplaces and promote global sustainability. As the largest professional community for EHS and sustainability decision-makers, we provide peer-led educational conferences, benchmarking research and an active network for sharing solutions to today's corporate EHS and sustainability management challenges. Visit NAEM online at www.naem.org.



Case Study on Data Management



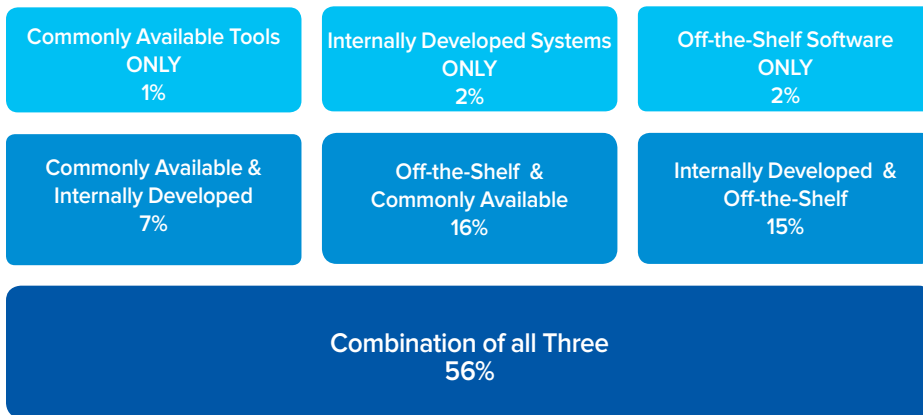
For any EHS and Sustainability leader who has had to manage vast amounts of data, it's tempting to think that there might be a software tool, or one strategy out there, somewhere, that could meet all of your needs. Unfortunately, the experience of those who have selected, implemented and managed these systems suggests this is not the case.

Indeed, a number of variables help shape a company's EHS&S data management strategy, including organizational design, internal culture, types of operational risks and the level of external scrutiny to internal operations.

It's perhaps not surprising then, that among the 165 software users NAEM surveyed about their company's data management approach, 56 percent are using a combination of commercial systems, internally developed software and commonly available tools, such as Microsoft Excel.

Current Data Management Approach

Figure 1



N=164

As the EHS&S software offerings become increasingly sophisticated, more companies are adopting commercial systems to centralize data collecting and reporting.

Common Reasons Why Companies Use More than One System

While software tools for the environmental, health and safety, and sustainability professional have rapidly matured over the past decade, more than half of those surveyed by NAEM still use a combination of commonly available tools, internally-developed software and commercial systems to manage their data. The reasons, according to research participants, may include:

- Decentralized structures may not lend themselves to a centralized reporting systems
- Diverse operations may produce a variety of data types
- Individual operations may have unique risks that require targeted solutions
- Internal culture may value decentralized decision-making
- Acquired businesses may have their own software tools
- Legacy tools may be better aligned with organizational needs



Even so, the scope of these implementations vary widely from company-to-company. A single company may use an enterprise-wide system to manage its corporate standards, for example, while its individual business units use different combination of software systems to meet their own unique needs.

This is often the case for companies that have gone through a merger or acquisition, where the new business entities bring new assets but also their own approaches to data management.

All this makes standardizing corporate processes, or adopting any single system, exceedingly difficult. But as Jason Schmitz, Director of Trinity Consultant's T3 Group points out, perfect integration and standardization may be an unattainable ideal.

“It’s very easy for the human brain to say, ‘We’d really like to have everything in one nice, neat, tiny bow. The fact of the matter is that these organizations are diverse; they grow; they contract; people come; people go; the organization restructures; people get new roles and responsibilities.”

“It’s okay to not have perfect data because you’re not going to have perfect data...you’ve got to figure out what you can tolerate,” he said.

Regardless of a company’s EHS&S program maturity, business objectives or budget, software tools remain just that—a conduit for collecting information. It’s how well an organization aligns around a vision and commits itself to continuous improvement that truly holds the key to success for any data management program.

“The hope is that you master one area and then you go onto the next top priority and master that,” Mr. Schmitz said. “Data management is an evolution.”

In the interviews and case studies that follow, we will examine how different companies evaluated unique data management challenges, and identified solutions to address their business needs. We’ll also explore how they solved problems today while positioning their programs on a long-term path for growth.



Transforming a Central Data Repository into a Dynamic Information Management System

Given the breadth of its reach and the number of employees it has, the United States Postal Service may be in a category of one. In this case study, Asif Ansari, Manager of Environmental Compliance and Risk Management, explains how the organization evaluated its unique software requirements, and selected a path to best meet its needs.

Company Overview

The United States Postal Service (USPS or Postal Service) is one of the largest civilian employers, with a work force of over 400,000 employees. As a \$64 billion self-funded agency, the Postal Service runs one of the world's largest logistics operations, manages more than 30,000 buildings and operates a fleet with over 225,000 trucks.

Description of our EHS Data Management Challenges

In order to monitor environmental compliance and communicate business needs to stakeholders, we literally have to track thousands of permits and plans, and capture vast amounts of environmental data in a timely and standardized manner. This includes information on regulated equipment, environmental permits and plans, compliance deadlines, training needs and many other regulatory required activities, including inspections and sampling. Yet given limited resources and the geographical breadth of sites with environmental requirements, the environmental function must constantly prioritize compliance strategies to minimize operational disruption.

Description of the Business Problem

Environmental Tool Kit (ETK) has been the official USPS environmental compliance information system and data warehouse for almost two decades. ETK was built and enhanced over the years in a collaborative manner between USPS and a third part vendor and contains critical site-level information on regulated equipment and permits/plans, compliance schedules, environmental audit results and corrective actions, and provides storage and access to environmental records. It also provides national and regional roll-up reports that aggregate site-level data.

Before our updates, USPS staff and contractors had different methodologies for entering data into the system. Contractors used various formats (including paper) to capture, digitize, and finally upload the information into ETK. The lag time from site visit to data upload into ETK would take a month in some cases. Not only was this approach time-consuming and inefficient, but some contractor processes were not supported by the USPS IT platform. This resulted in a loss of quality control and a significant lag in the availability of environmental information necessary for decision-making.



In addition, the system was not originally designed to serve as a direct auditing tool. Audits were performed outside of the ETK environment and compliance deficiencies and corrective actions were later uploaded to ETK. This lag time was also significant.

Simply put, ETK was not positioned to be a near real-time information management system platform and would require further enhancements to support the Postal Service into the future.

As part of continuous improvement, the Postal Service developed a strategic plan to enhance ETK. The goals include:

- improving the user interface;
- standardizing data collection and audit processes and
- allowing for “near real” time access to environmental data and audit results.

Our vision is for ETK to become a complete environmental management system platform with robust auditing features and near instant visibility to critical environmental action items. Standardizing all the various data collection processes and non-postal platforms to an internal USPS IT-supported iOS mobile application platform is critical to this outcome. Under the proposed plan, the USPS IT function will develop a mobile application platform internally. Postal Service environmental staff will utilize standardized tablets that run the mobile platform, and contractors will be required to use the same standardized USPS mobile application on their own devices.

The Options We Explored

In order to find the best solution, we went into the process with an open mind.

Option 1: Continue as is with existing ETK platform. Due to reasons listed above, we decided early on that this was not a viable solution. It would not protect the organization from the environmental compliance risks and maximize efficiencies.

Option 2: Scrap our ETK platform and go with a new third-party solution: Using NAEM’s EHS & Sustainability Software Conference as a resource, we essentially reviewed all the EHS compliance software platforms in the market. This type of forum presented an ideal environment to network with peers about their data management challenges, learn about how they are addressing this issue, and finally to observe first-hand the various industry EHS platforms that are available. This process was very helpful.

We then diligently conducted “deep dive” sessions with a select group of EHS software providers to observe the functionalities in detail and make suitability determinations. There are some wonderful products out there, but we determined that they did not meet our needs, due to two main challenges: the final total cost of ownership and the IT security challenges. The Postal Service has unique needs in terms of the number of users, licensing arrangements, software ownership, and most importantly its very strict corporate IT “firewall” requirements. Due to these constraints, we decided to not pursue this option.



Option 3: Upgrade existing platform and introduce “best practices” from industry leaders and peers: The final option we considered was to learn from industry best practices and under a project/change management approach to strategically enhance ETK to be a robust information management tool. In the end, we selected this option, as it provided the most cost-effective and comprehensive solution.

How We Transformed Our Environmental Tool Kit to Meet Emerging Needs

One of the important things we learned from coming to NAEM conferences is that we needed to have our own mobile solution. Per the strategic plan discussed above, the environmental function worked closely with USPS IT function to specifically modify ETK for use on smaller screens and touch-screen capabilities of smartphones and tablets. A mobile application for ETK was developed and deployed in 2016. This application was designed on the iOS (iPad) platform because it is the official tablet approved to work on the Postal network. The Postal Service also procured iPads with Wi Fi and cellular coverage for the environmental staff as part of the strategic plan.

The 2016 release allowed for on-site evaluation and collection of ETK data fields for regulated equipment as well as environmental permits and plans. The Postal Service is now working with environmental contractors and internal staff to transition from existing data collection checklists and processes to the ETK mobile application. Moving forward, contractors and environmental staff will use the mobile applications to collect data in the field and instantly update ETK. This will allow for “near real-time” visibility of data for regulated equipment and environmental permits/plans.

The auditing feature which includes regulatory updates at Federal, State, and local level is currently not mobile enabled and resides outside of ETK. Plans are now under way to bring this auditing capability internal to ETK and to operate in a mobile environment as well. The mobile application software paired with the iPad hardware will ultimately enable ETK to be used as audit tool operating in “near real” time.

Additionally, ETK will be modified to enhance the current user interface, including site-level dashboards, to present critical environmental information and action items in an organized manner. This will improve the customer experience at multiple organizational levels and facilitate timely response actions. The site-level dashboard will include a more robust calendar features to better present a facility’s compliance actions and regulatory due dates.

The Results

ETK is being positioned to upload data and critical information to the system in a standardized manner, in real time. Once the information goes in, the dashboards will also be more user-friendly and more robust to facilitate decision-making. We anticipate several corporate benefits as the mobile platform replaces multiple existing processes:

- 1. Improved Decision Making:** Instant to near instant access to environmental compliance data for USPS management to make sound decisions and reduce potential environmental risks, liabilities and potential monetary fines;



Case Study on Data Management

- 2. Improved Customer Experience:** Organized and simplified presentation of critical environmental action items and information will facilitate site-level understanding of compliance obligations;
- 3. Increased Opportunities to Identify Risks:** Expansion of audit capabilities and reach for USPS compliance personnel and contractors with ability to conduct full-scale or targeted environmental compliance reviews using tablets during site visits and reduce risks by immediately identifying corrective actions;
- 4. Convenience and Efficiency:** Instant access to environmental compliance information for USPS compliance personnel and contractors in the field using a tablet;
- 5. Adaptability:** Improved flexibility to fast changing environmental regulations and requirements.

Key Takeaways

As an organization, our infrastructure and IT security concerns did not favor opening our systems to outside vendors. That was not a deal-breaker, but it made the prospect of pursuing this option very, very difficult. And when it came to the cost, we were not able to make a compelling business case that this is the IT infrastructure risk for outside sources to come in. Ultimately, investing in our existing system was a better fit for our organizational risks. Adopting any type of software system requires considerable investment of time and resources. The solution has to fit with what your organizational risks are. In our particular case, our needs and the costs to use a third-party platform would not have matched our needs from a financial standpoint.





Lessons Learned

No matter the maturity of your data management program, there are certain lessons that seem universal to all companies. These include:

1. **Data management begins with establishing a basic set of standardized work flows:** “If you don’t have the processes where we have a common definition and terminology for how we do things and what information we collect, and what exactly that information means, you can’t deploy any software much less an off-the-shelf version.”

2. **Every EHS&S data management system will need cooperation from other functions to be effective:** “The art of organizational change management is huge for putting in new data management systems, especially if you’re relying on a network of people or upstream business processes.”

3. **A data management system is only as accurate as its users:** “If executed properly, [most business processes] produce high-quality information. The problem is that without the knowledge, the skill and the capability, people sometimes just get it wrong.”

4. **Each solution has its quirks:** “There’s no system that users say: ‘It’s so great, I really love it,’ People always have their complaints.”

5. **Data Management is a journey of continuous improvement:** “Sometimes you’ve got to put a stake in the ground and move forward and use that mark as your starting point for [further improvement]”



6.

Don't rush into a decision: "Take your time to review what is out there because an EHS software platform is a long-term commitment. It's not a project that you do for one or two years: This becomes a corporate solution."

7.

Know your Audience: Work for the target audience or customer base. Know who will be using the system and what it will be used for. Organize data or information that makes sense to the user and helps them make decisions in a timely manner and take action.

8.

A complicated problem doesn't require a complicated solution: "It is best to match your organizational requirements and assess as to what solution works for you. The solution must be cost-effective relative to the compliance risk. Don't buy "Cadillac" if the need is not there."

9.

Progress is not always a straight line: "As you continually improve, you get the curveballs of change that may take you two steps forward, one step back. Whenever you're in the middle of that, it might not look so pretty but as long as you're vectoring in the right direction, I think that's the most important thing when it comes to data management."


10.


The more data, the more work: "Once you create more data for yourself, you create more problems for yourself. You never used to know about those incidents that occurred. Now that you've got that granularity, you've got a problem that you've got to deal with. The overwhelming amount of data that you're going to create might actually make your job harder, so you've got to be cognizant of that."



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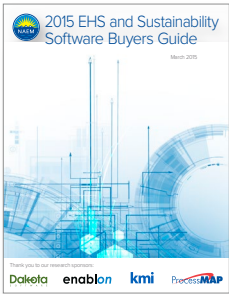
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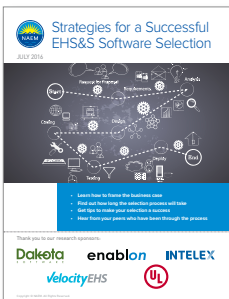
NAEM provides valuable resources for corporate EHS and sustainability leaders and IT professionals who are responsible for selecting, implementing and maintaining software systems, and who are looking to better manage and report their data.



2015 EHS&S Software Buyers Guide

This report, which includes data from 165 in-house EHS and sustainability leaders, addresses common questions from a peer perspective, including: business objectives for software purchase, the desired software capabilities, peer spending and expected maintenance costs. The detailed analysis also incorporates the perspective of past purchasers to provide shoppers with a comparison between their expectations and the experiences of those who have recently gone through the process. An update to this report will be published in March 2017.

Download Free Report: www.naem.org/?survey_2015_ehsmis



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For More Information: www.ehsmis.naem.org/



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