

Environment, Health and Safety

Going Beyond Compliance

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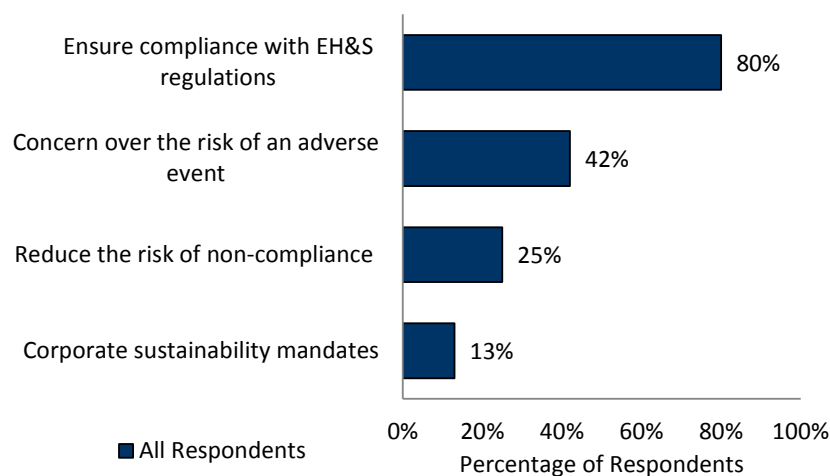
Environment, Health and Safety: Going Beyond Compliance

The need to ensure compliance with Environment, Health and Safety (EH&S) regulations and concern over the risk of an adverse event is driving an increasing number of manufacturers to reevaluate their EH&S program. Indeed, companies that are not able to comply with EH&S mandates in an effective fashion are at risk of losing their competitive advantage. In Aberdeen's third annual study on EH&S, we will be providing a roadmap to an effective EH&S initiative within an organization, and supporting technology solutions that can help organizations get on track towards not only being in compliance, but to go beyond that.

Business Context

Compliance to a myriad of regulations, and the need to manage operational risk has compelled organizations to manage Environment, Health and Safety (EH&S) issues in a consistent manner across the organization. The goal is to reduce the cost of compliance, reduce the environmental impact of your operations, improve the safety of people, processes and product, all while ensuring that you're meeting the corporate goals. Between January and March of 2012, Aberdeen surveyed 110 executives about their EH&S processes and the interconnected business process that they have implemented to address these pressures. This year, 80% of surveyed organizations chose compliance as a top market pressure, followed by the risk of an adverse event as a distant second, at 42% (Figure 1).

Figure 1: Pressures Driving Focus on EH&S



Source: Aberdeen Group, March 2012

Analyst Insight

Aberdeen's Insights provide the analyst's perspective on the research as drawn from an aggregated view of research surveys, interviews, and data analysis

"We incorporated EH&S training in with ISO-9000:2001 weekly training activities which have led to a better employee reception and understanding of the importance of EH&S to meeting our quality goals."

~EH&S Manager, Metal and Metal Products

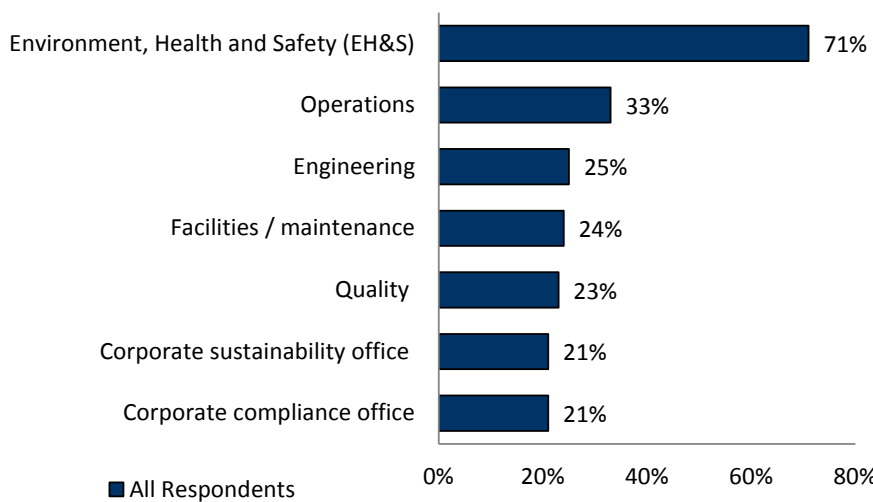
This comes as no surprise since compliance has always bubbled to the top, over the last three. The consequence of not being in compliance far outweighs all the other pressures. It can lead to penalties, fines, plant shutdowns and even in some cases, fatalities. In addition, if a manufacturer operates in a global environment, they would need to stay on top of mandates specific to a particular region and geography. All of this makes it extremely overwhelming for organizations to make sure that they are in compliance. By the same token, as shown in the results, manufactures also understand the importance of identifying the various risks within ones' operations that could result in non-compliance or an adverse event. Indeed, EH&S risks not only threaten employees, but also the bottom line.

In follow up conversations with executives, it is impossible to have a conversation about EH&S without the discussion revolving around the Deepwater Horizon oil spill. Even though it has been two years, manufacturers have not forgotten the impact an adverse event can have to not only your organization's bottom line, but also brand image. It truly was a tipping point, raising the profile of the EH&S role in the organization and creating an environment where manufactures have become laser focused on ensuring compliance in EH&S.

Definition

The Deepwater Horizon oil spill (also known as the Gulf of Mexico Oil Spill or the BP Oil Spill) is the largest marine oil spill in history, and was caused by an explosion on the Deepwater Horizon offshore oil platform about 50 miles southeast of the Mississippi River delta on April 20, 2010

Figure 2: Who is In-Charge of Sustainability?



Source: Aberdeen Group, March 2012

As shown in Figure 2, when we asked survey respondents who was responsible for the sustainability strategy within the organization, overwhelmingly 71% of all respondents indicated that it fell on the shoulders of the EH&S team, while the remaining responses varied from manufacturing operations, to engineering to quality to the corporate sustainability office. In the remainder of this document, we will uncover the role EH&S plays in supporting the sustainability agenda.

The Maturity Class Framework

Aberdeen used four Key Performance Indicators (KPIs) to distinguish the Leaders and Followers:

- **Audit action items completed on-time**, defined as the percent of time audit action items are completed on time
- **Recordable injury frequency rate** is expressed as the number of injuries recorded per 100 full time employees per year
- **Overall Equipment Effectiveness (OEE)** is a composite metric accounting for availability, performance, and quality averaged over all assets (no penalty for unproductive assets when the asset has scheduled down-time)
- **Operating margin vs. corporate plan** is measured as the percentage difference between last year's actual operating margin and budgeted operating margin

These metrics are used to determine Leaders and Followers, and are critical to measuring the success of any EH&S program, as it not only takes into consideration the metrics around safety of the workforce and workplace, but also the metrics that distinguish organizations that are performing as leaders in defining productivity and operational metrics.

Table 1: Top Performers Earn Best-in-Class Status

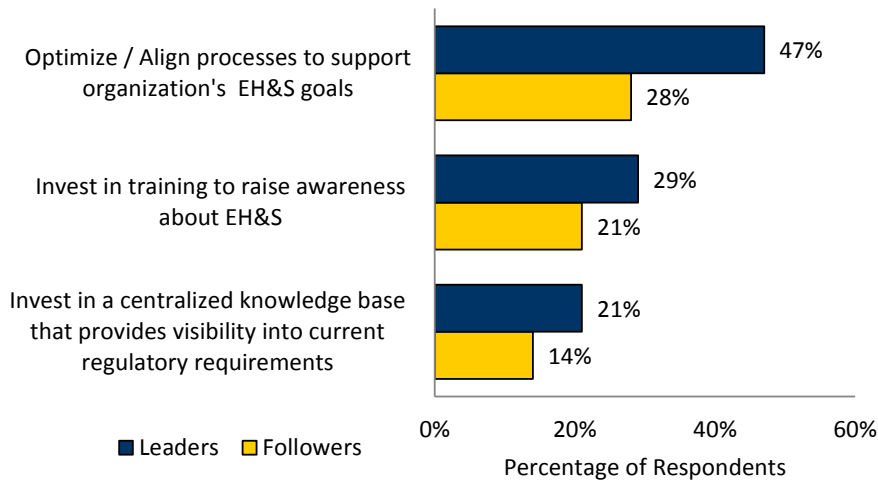
Definition of Maturity Class	Mean Class Performance
Leaders: Top 35% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 97% audit action items completed on-time ▪ 0.3 recordable injury frequency rate ▪ +12% operating margin vs. corporate plan ▪ 91% operational equipment effectiveness
Follower: Bottom 65% of aggregate performance scorers	<ul style="list-style-type: none"> ▪ 86% Audit Action Items Completed On-Time ▪ 2.5 recordable injury frequency rate ▪ -2% operating margin vs. corporate plan ▪ 77% operational equipment effectiveness

Source: Aberdeen Group, March 2012

Differentiating Strategies

In order to overcome the pressure of meeting compliance mandates, the Leaders are investing in a centralized knowledge base that provides visibility into current regulations. Providing a single source of truth enables the Leaders to collect, create and report on regulations in a timely manner.

Figure 3: Strategic Actions



Source: Aberdeen Group, March 2012

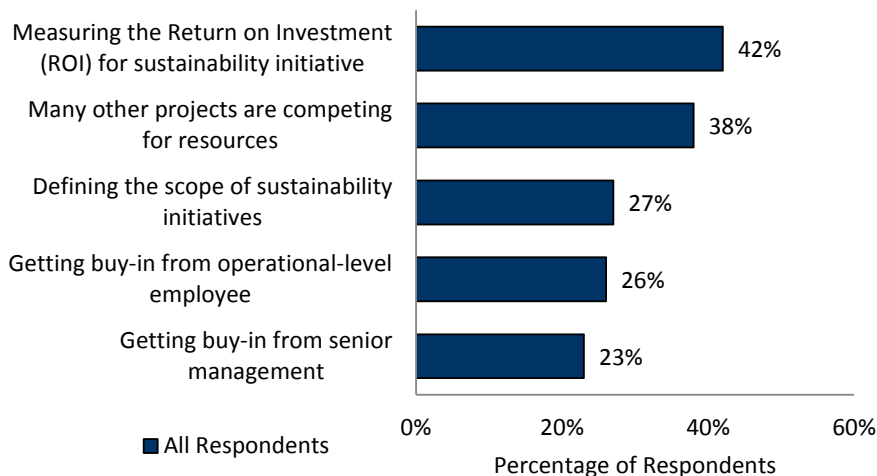
“The key to our success was that we understood that it was extremely important to get everybody on board with the new EH&S and quality management system. We got everyone involved (from every region and business unit) upfront in order to get buy in from all levels of the organization. Without their buy-in, the management system would have been useless. As a result, we’ve moved from having siloed systems to having a single system that tracks all EH&S and quality data.”

~Associate Director of Global Quality, Consumer Products Manufacturer

In addition, the Leaders are optimizing their production, maintenance, quality and safety (among others) to meet their safety and environmental goals. Also, the Leaders understand that an EH&S program cannot be managed in a siloed manner, but rather holistically. For this reason, the Leaders are investing in training to raise awareness about EH&S and getting everyone across the organization on board with the EH&S initiatives. In doing so, they are able to effectively create a socially responsible culture.

While these strategies may seem easy enough to implement, there are several challenges that need to be kept in mind before implementing an EH&S strategy (Figure 4).

Figure 4: Challenges with Executing an EH&S Strategy



Source: Aberdeen Group, March 2012

Often, the challenge with investing money and resources into an EH&S strategy is the fact that it is extremely difficult to measure the Return on Investment (ROI). Secondly, in a difficult economy, organizations are often running on stretched resources. Therefore, it is often the case that the EH&S department is competing for budget and resources against other corporate initiatives. Something that should not be overlooked when implementing an EH&S strategy is that you need to get buy-in from the shop floor to the top floor. Without the buy-in from all parts of the organization, it will become extremely difficult to implement the necessary processes and technology needed to gain central insight and control into the EH&S data. Indeed, readers can use this paper to build the business case for EH&S.

Technology and Business Capabilities

To support these strategic actions, the Leaders have invested in a number of different business capabilities and technology enablers that span all aspects of the organization.

Table 2: Critical Business Capabilities

Business Capabilities	Leaders	Followers
Established formal EH&S program endorsed by executive sponsorship	58%	55%
Established cross-functional teams	58%	45%
Standardized EH&S processes are effectively implemented and adhered to across all functional departments	75%	70%
Establish a formal Risk Management Organization to measure and guide the risk activities across the enterprise	56%	50%

Source: Aberdeen Group, March 2012

The Importance of Organizational Structure

In order to implement a holistic EH&S strategy, organizational structure plays a key role in achieving this. To truly enable change in the culture, the organization needs to have a long term vision to EH&S, and in order to implement true change, an organization needs to first have an executive leading the charge. The Leaders understand the importance of having executive sponsorship to drive collaboration across functional groups which will enable this initiative to get the resources and budget required to make the program successful.

In addition to corporate sponsorship, the Leaders have established cross-functional teams to ensure that the strategies made at the board level are implemented on the plant floor. As mentioned in the previous section, one of the challenges with executing an EH&S strategy was getting buy-in from executives and operational level employees. By creating cross functional teams across engineering, manufacturing, production, quality and safety,

Leaders can get the buy-in needed to make the program a success. In some cases, some organizations have recognized the process similarities between their quality and EH&S department and they have taken the collaboration a step further and have implemented a single solution to manage both their EH&S and quality data. This is exemplified in the following case study.

Case in Point

Take for example a multi-billion dollar company, with over 50,000 employees, and a diverse product portfolio ranging from consumer products, medical devices and supplies to professional products. In 2009, after executing a lean initiative for continuous improvement, the company recognized that they had too many disparate systems across their five diverse business units, which created a roadblock for intelligent decision making. The company needed a solution to support its 126 facilities and report accurate information about EH&S and quality incidents up to corporate as well as down to its employees.

To address these challenges, the company created a design team consisting of personnel from various business units and departments. One of the key areas of focus for the team was to invest in an EH&S and quality platform across all of their manufacturing facilities, providing employees a single version of the truth. The company wanted a single solution that could handle both EH&S and quality issues. With this requirement in mind, the team was able to narrow down to three potential software vendors that could address their goals of providing the right information to decision makers. The company selected their current solution provider because of its 'ease-of-use' and 'out-of-the-box' capabilities. "It was important to bring on a system that was essentially 'out-of-the box'. Our product portfolio is very diverse (from toilet paper to a class 3 medical device), and we have a lot of sites, so we wanted to minimize problems when it comes to software upgrades or language changes," explained the Associate Director of Global Quality of Regulatory Affairs Group.

Since the implementation of their holistic EH&S and quality management system, the company has seen several benefits. The company was able to ensure consistency in the way they capture near-misses, accidents, injuries, and events. By collecting the information in a standardized way, the company was able to benchmark and measure EH&S performance by facility and region. In addition, through having a centralized system, global reporting became substantially easier. As with any global company, meeting the various compliance mandates is critical for selling and providing services to a global market. In the past, this process was highly manual and labor intensive. Additionally, their EH&S and quality system improved communication between facilities and business units and more importantly, data accuracy.

continued

Case in Point

As the Associate Director of Global Quality of Regulatory Affairs Group explained, “Our system has been valuable in helping us understand our business better. We are better able to mitigate risks – and on a higher level – corporate can keep track of what is going on at each facility through the reporting capability and provide assistance before an event might occur.”

Process - Formal Frameworks

The results of the survey revealed that 28% of the survey respondents are challenged with defining the scope of their sustainability and EH&S programs. The Leaders are addressing this challenge by establishing an enterprise-wide framework that provides a clear understanding of the organizations EH&S program. Establishing such a standardized process will ensure that employees have a clear understanding of the processes established and how these processes are connected to the success of their sustainability program. This means that the Leaders are standardizing how they collect and monitor safety and environmental information. In doing so, the Leaders are ensuring close monitoring of issues that could result in an incident, injury or adverse event.

In addition to this, the Leaders are establishing a formal risk management organization to identify all the various risks within their enterprise. At the highest level, this risk management approach focuses on four major aspects of managing risk: identification, quantification, prioritization, and mitigation. Taking such an approach provides decision makers with a clearer picture of all the risks throughout their industrial plants (whether the risks are associated with their aging assets or unsafe operating procedures) and allows them to be better equipped in defining strategies to address and mitigate these risks. Conducting a risk analysis in a manufacturing environment without a formal risk management strategy and the supporting risk management capabilities can be challenging because of the variables in an industrial environment that are often difficult to define and quantify. However, with a detailed and proactive risk assessment strategy, manufacturers can chart the course for improving EH&S processes and plant productivity. Implementing such a strategy will minimize the risk of non-compliance and adverse events.

Enabling Visibility into EH&S and Compliance Data

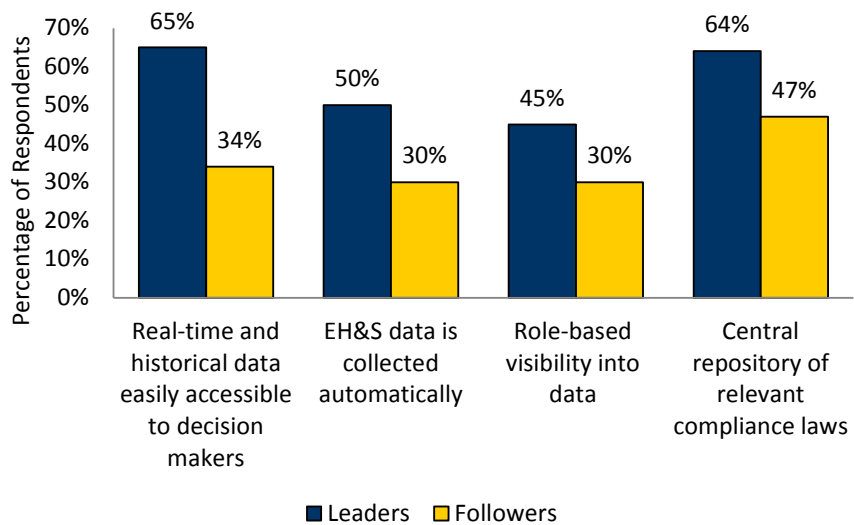
To reduce energy consumption, emissions, waste and safety issues in manufacturing operations, the first step is to provide visibility into this information. The Leaders are 66% more likely than the Followers to automatically collect EH&S data and store it in a central location. While

“As we moved towards making more highly regulated products, we needed to move away from our manual and labor intensive processes to finding a way to automate this process. Our current system allows for a central repository of all of our quality and EH&S data which makes it extremely easier to create reports and meet the various FDA quality.”

~Associate Director of Global Quality, Consumer Products Manufacturer

many manufacturers are already tracking this data, it is often done in spreadsheets and done in an error prone way. In addition to this, the Leaders are almost twice as likely as their competitors to provide this data in both real-time and historical fashion. To ensure that the data is provided at the right time, in the right form and to the right person, the Leaders are also providing role-based visibility. This ensures that the information is shared coherently from the operational level employees to the executives. The Leaders are leveraging this information to get a better understanding into what's happening at the operational level and make the necessary changes in their processes to improve the safety of employees, products and environments. In addition, this information also becomes important in finding ways to improve productivity without sacrificing safety.

Figure 5: Enabling Visibility into Key EH&S data and Compliance Mandates



Source: Aberdeen Group, March 2012

While it is critical to gain insight into EH&S data, the Leaders also recognize that they needed a way to get easy access to relevant compliance laws. The Leaders are 36% more likely to have a central repository of compliance mandates. This is especially important when manufactures work in global environments and need to keep on top of the various mandates from region to region and country to country.

Case in Point

Take for example a government owned utility company. The company oversees generation, transmission, and distribution of electric, and employs over 20,000 employees and has over 4 million customers. It also has an additional 25 remote networks that provides electricity to northern community.

The company consists of six divisions, consisting of production, transportation, distribution, construction, IT and administration. Previously, each division had its own EH&S management system and is accountable for reporting of their EH&S performance separately. In 2004, the company created its own internal database to manage all of its environmental information. By the end of 2008, the company realized that it was a very inefficient way of managing the information. Not only was it difficult to enter information into the database, but also to have the ability to look at the data to perform analytics. As the Environmental Performance Coordinator explained, "We always faced the challenge of knowledge transfer, we had a rotation of people who managed the system, and whenever a person left, we often found it difficult to manage the information."

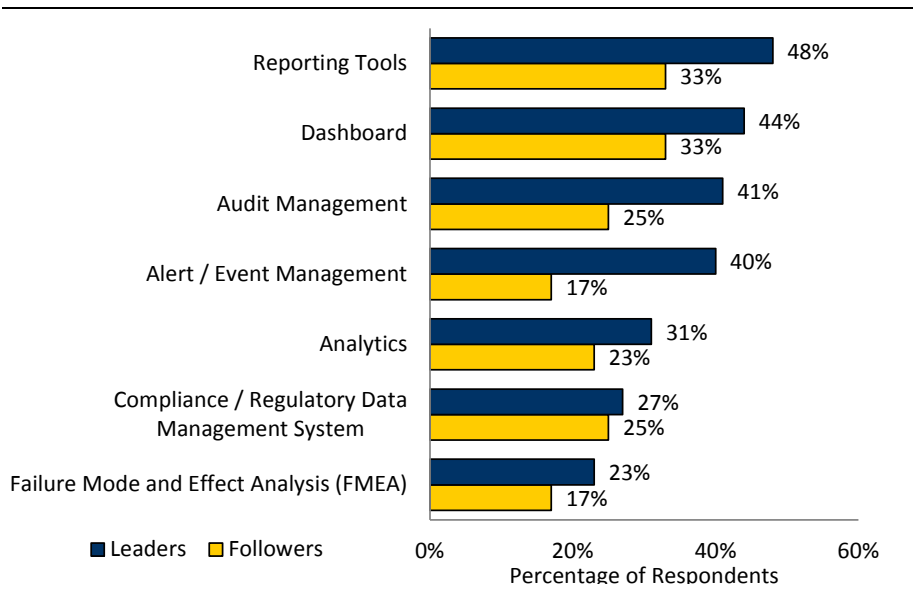
Recognizing these challenges, the EH&S team created a business case for implementing a single platform across all of their units. They were able to identify 15 software vendors that could address their challenges. After they included a qualification process, in which they identified if the product met their business needs, the company was able to narrow it down to five vendors. They invited these vendors to demonstrate the breadth of their solution and provided them their own live data to work with. Through this exercise, the company was able to identify a French-based software provider of Corporate Social Responsibility and EH&S management tools that provide the ability to manage EH&S performance across their enterprise.

Their EH&S management tool offers a user friendly way to input, access, consolidate and analyze the massive amounts of environmental data. In addition, an added benefit of the solution is the automation and workflow of the data. Previously, the process of opening and starting an action item was very manual and time consuming. Now the tool sends alerts and updates automatically, and thus minimizes the risk of an action item not being completed and done properly. As the Environmental Performance Coordinator explained, "Our EH&S management system has changed the way we manage our information, the way we communicate cross-functionally and our culture. We've become a more socially responsible organization because the visibility into this data enables us to make better decision that helps the environment."

Technology Enablers

Investment in technology to gain access to critical EH&S information is one of the major differentiators for Leaders performance. At the highest level, these enablers are tools to automate business process areas, integrate cross-functional processes and effectively identify, quantify, track and report on key EH&S drivers, actions and outcomes. These functional capabilities allow organizations to better manage either risk or compliance; with some additional capabilities focused on improved analytical capabilities and decision making.

Figure 6: Technology Enablers



Source: Aberdeen Group, March 2012

“In order to improve our EH&S processes, our organization has invested in training of personnel across the board to make employees and contractors aware of corporate and compliance requirements. We have standardized processes where we discuss incidents/events at daily pre-start meetings and have gotten employees to input this information into software for easy tracking of corrective actions by management.”

~Graham Brown, Corporate Management, Engineering Services

Being that compliance is top-of-mind for all manufacturing executives, the Leaders are able to collect, report and audit their processes through the implementation of a robust compliance management system. This provides the Leaders greater consistency in how they manage their operations, processes and ensure compliance to a diversity of regulations. A compliance management system helps manage the massive amounts of complex data related to energy, emissions, safety and compliance.

The Leaders are better able to control the risks and minimize the number of safety incidents by implementing an audit and incident management system. These tools help these Leaders better track whether or not a near miss, report or incident has been followed up on. Utilizing these tools makes it easier to create an action item and provides a single repository for all of these action items. In addition, it ensures clearer communication into the root causes of an action item and minimizes the risk of an adverse event.

As mentioned, there is an enormous amount of data created from EH&S processes. It becomes extremely difficult to derive trends and insights from

this data. The Leaders overcome this issue by leveraging analytics, dashboards and reporting tools. These tools enable a more integrated way of pulling the EH&S data within the system and make it easier for the key decision maker to digest the information. Reporting tools are critical and are a key factor in delivering the right information to management. Without the ability to report and provide visibility into EH&S performance, management will be running the organization blind. These reports need to be created quickly and accurately. Therefore, rather than relying on multiple spreadsheets to get into this information, the Leaders have invested in dashboards, reporting and analytics tools to be able to quickly and easily pull the necessary data to view the EH&S KPI's of all of their facilities.

The overall adoption rate of all the technologies mentioned is not that high, even for the Leaders. However a big percentage of companies have plans to invest in these solutions in the near future. Companies that have yet to invest in these tools should look into investing into these key technology enablers to manage the massive amounts of complex data related to safety, compliance, energy, and emissions to provide their employees and executives the ability to make connections between the day-to-day tactical operations and the strategic business goals.

However, when looking to invest in a solution, one of the things to consider is the ability to find the right tools that can adapt to your existing business processes and flexible enough to change and improve as your business processes change. Therefore, it is important not to compromise. Find a solution that is truly flexible to your business needs. EH&S is critical to the business, and therefore organizations should find the right tool for your business needs rather than the cheapest solution. In order to truly go beyond compliance and achieve the performance benefits of the Leaders, organizations need to view EH&S as more than just a compliance exercise but the ability to take the organization to the next step of improved productivity and financial benefits.

Key Takeaways

Any manufacturer looking to better address issues in regards to EH&S, should follow the Leaders and consider taking the following actions:

- **Assign an executive champion.** The importance of having executive-level responsibility for company-wide EH&S vision and program cannot be over-emphasized. Without an executive champion, EH&S initiatives are more likely going to lack a holistic and clear vision for the implementation strategy, and can take longer to implement and are less likely to yield the desired results
- **Gain buy-in from the plant floor through cross-functional collaboration.** In order to drive the vision of the executive, collaboration amongst key functional groups is critical: EH&S, quality, safety, manufacturing, engineering, production and even the supply chain. Without regular sharing of vision and effort, it

“Our EHS management system has changed the way we manage our information, the way we communicate cross-functionally and our culture. We’ve become a more socially responsible organization because the visibility into this data enables us to make better decision that helps the environment.”

~Environmental Performance
Coordinator, Utility Company

becomes far more difficult to achieve the performance benefits of the Leaders.

- **Implement a comprehensive risk management strategy.** Implement a risk analysis to identify, quantify, prioritize and mitigate all risks in both manufacturing assets and operating procedures. Not being able to manage these risks can lead to the possibility of penalties, fines, erosion of shareholder value, plant shutdowns and in some cases even fatalities.
- **Invest in automation.** The Leaders have benefited from the early adoption of automation to support reporting, compliance and data management capabilities. But even today, the adoption levels of these software solutions are considerably low across all performance categories. For those that haven't yet, companies should look to automate the collection of critical EH&S data.
- **Provide role based visibility.** Once an organization has automated the data collection, the next step would be to provide role based visibility to this information. Providing visibility to key decision makers through the use of tools such as dashboards and analytics will ensure that the decisions are made intelligently and at the right time to prevent any adverse events that can result from a catastrophic failure.
- **Tie the data together.** When planning on investing in technology, companies should look to implementing an enterprise wide solution rather than creating islands of separate data sheets. This will ensure that everyone is looking at one source of a solution to make the decisions needed to improve safety and operational performance. Moreover, this will ensure stronger collaboration between cross-functional teams. Implementing an enterprise-wide application also enables companies to manage compliance across different plants, geography, and product lines through a single solution.

“We’ve been able to leverage our quality and EH&S system in unique ways. One of the things that we’ve been able to do is include training and requirement data for a particular job into the system. When an employee wants to operate particular equipment, they would input their personal information, and the system would identify whether or not this individual is certified to operate the piece of equipment. If they are not certified or trained, the system would provide information on how to be certified. Essentially, we are using technology to make a safer working environment and prevent injuries and fatalities”

~Associate Director of Global Quality, Consumer Products

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Related Research

[Compliance Management in Environment, Health and Safety](#); April 2011
[Environment, Health and Safety: Managing Risk and Compliance in Manufacturing Operations](#); April 2010
[Sustainable Production: Good for the Plant, Good for the Planet](#); September 2009

[Energy Management: Driving Value in Industrial Environments](#); April 2009
[The ROI of Sustainability: Making the Business Case](#); May 2009
[Sustainability Matters: The Corporate Executives Strategic Agenda](#); March 2009

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