Selecting, Implementing, and Using EHS Software Solutions

The EHS Guidebook
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Look Under the Surface: 4 Things to Ask a Compliance Software Vendor

In this day and age, very rarely do people buy anything without doing their research. This rings true when it comes to the buying process for enterprise software systems. In many ways, the buyer has so many tools available to research vendors and understand the pros and cons, we see a much more informed and educated enterprise buyer. Web-based research will give you some of the key areas to rate a vendor on, such as:

- Market expertise
- Features and utilities
- Broad company overview
- Pricing and support structure
- Breadth of applications offered

All these things can be commonly found after some basic research, and a few discovery demonstrations. However, we still see cases where a company has selected a vendor, and that vendor continues to fail on their delivery of the solution. You would think that these failures would be picked up on during their extensive, informed research, but there is more to a company than the above bullet points. Below are some additional considerations to be aware of when selecting an enterprise vendor—those that go beyond pricing, features, and tools.

1. Implementation Track Record: One of the primary reasons software implementations fail is a lack of communication and project management within the implementation team. To put it more simply, the project scope goes over time and over budget. Often (and especially in the Compliance software market), the software sale draws so much focus, that the service element becomes an afterthought. Look for a vendor that has a proven track record of implementing their solutions successfully, and make sure to spend some time reviewing their strategy. Proper implementations, whether large or small, should incorporate some element of project management that involves both parties. The best way to find out if the implementation methods are "proven" is to look for proof from existing customers.

2. Customer Satisfaction: Today's enterprise software buyer will no doubt ask for references. Most vendors will gladly turn you towards their go-to reference or load you up with case studies. And most buyers will discuss the cursory questions—"What do you like about the software," and "does the software meet your needs," etc. When doing your reference call, it's also a good practice to delve into some more intangible questions. Remember, enterprise software is not only an investment in a solution; it can be an investment in the people within the company. Questions like "What do you think of your account manager or service manager," or "Do they respond to your needs at this company," or even "What is their user conference like" will give you a deeper insight into how this company operates. These types of questions (which may seem silly at first) add dimension to the vendor, and also give you an indication of the health and longevity of the company. You want to invest with a company that will be around for as long as you continue to work with them.

3. Financial Well-Being: As stated above, you are investing in an enterprise solution and the company behind it—it's critically
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Getting Started on Your Journey

It’s like a “test-drive” of the system on your terms and using your processes. What makes it powerful is that you can get a glimpse of how your future relationship with the vendor will be, and how they work when implementing your solution. These workshops can be time-consuming (and occasionally a pay-for exercise), so reserve this for special circumstances.

In our world where we have all the information at our fingertips, it’s sometimes easy to say we know everything. But there are still those data points that are not publicly known, and getting the right answers can make a big difference in your decision. So it’s important to do your research and come to the table prepared, but don’t be afraid to ask for more information on your enterprise software solution.

Important that you feel comfortable about the company’s financial well-being as well as their product offering. In this day and age, software companies are being bought and sold, and a company’s control is sometimes in the hands of a venture capitalist rather than a software architect. In some cases, the software vendor is a minority shareholder in their own company. Venture capital investment, loans and lines of credit to keep operations going—truth is, a software vendor may have more debt than equity. Don’t hesitate to get financial information from the vendor.

Now many may not be apt to opening their books for you, and that’s fine—there are a few ways to get an accurate financial picture:

a. Search the Web for Investment News: Vendors may not actively promote when they are bought or invested in, but the investors love to talk up their portfolio. Look for press releases from investors on your vendor, and read carefully on whether the investment firm is providing capital, or actually purchasing the vendor.

b. Ask for a Debt to Equity Ratio: This is a great way to see the financial health of an organization without prying into their books. The Debt to Equity ratio will indicate how much they owe versus how much they own. Be wary of vendors with high ratios—chances are they may be burning more cash than they are bringing in.

c. Annual Growth Rate: Average growth percentages over a 3-5 year period are nice, but the vendor could have had one great year in year 1, and the next 2-4 years they declined. Compounded Annual Growth Rate provides a more accurate depiction of how the company has fared financially over the past few years.

d. Annual Net Income Growth Rate: Another good metric to assess the health of a vendor is to examine the net income growth, which is essentially the vendor’s profitability. They could have a decent revenue stream, but are they profiting enough to sustain themselves? Net income will give you an idea if the vendor can stand on its own two feet. These are just some basic ways to understand the health of the company. A healthy company that invests money back into their product and plans for the long-term will ultimately result in more product innovations, providing you with services for years to come.

4. Proof of Concepts and Workshops: If you get to a point where two vendors are equally adept, then it might be time to suggest a workshop or proof of concept. These are typically 1-2 day engagements with the vendor whereby you give them a simple set of requirements, and ask them to implement it on a small scale.
ROI: Assessing Value in a Quality and EHS Management System

Everyone seeks out value. Whether you’re a coupon clipper, a sale shopper, or a garage sale stalker, people look to get some sort of value out of their buying experience. And if the product is purchased at retail, you look for ways to get the most out of the product you purchased.

The software sale is no different, and potential customers are looking for ways to demonstrate a viable Return on Investment (ROI). Let’s dispel any misconceptions first—software is not just a tool, it’s an investment. Quality and Environmental Health and Safety (EHS) management solutions require upfront costs, and upfront effort to get it up and running, and the returns only come after you’ve put financial investment into the product and financial investment into the implementation. The key is how quickly you expect to see a return.

In this market, ROI needs to happen quickly. We have entered a time when IT departments are cutting budgets and looking for ways to consolidate and integrate business systems. As such, IT is looking for ways to cut systems that are draining resources, protect budgets for larger-scale implementations, and seek out solutions that are low-cost alternatives. The Chief Information Officer (CIO) is looking for ways to demonstrate immediate ROI on projects, to the tune of seeing returns within a Quarter. This need has had an effect on the “Software Middle-Class”—those systems that are high-cost with long timelines to ROI.

You have three real scenarios in this IT solution model:

1. The “Too Big To Fail”: These are the long-term, high budget projects that are simply too big to abandon or too critical to the business to scale back. SAP is a prime example—the solution touches so many parts of the business, and has so much stake in the success of IT, that it will never be scaled or abandoned.

2. The “Software Middle-Class”: These are specialized solutions that serve a singular need (or the needs of a few), but come at a high-price of entry, and no definable ROI in the near future. These are solutions that end up on the chopping block with people looking for lower cost alternatives.

3. The “Low Entry, High Return”: These are specialized solutions that have carved out their niche in a particular function, and have certain “out-of-the-box” qualities that make the product have a low entry cost, but due to the configurable nature and flexibility, can yield a faster ROI than their middle class cousins.

So, what does this mean for Quality and EHS solutions? Well, it means that companies are looking for more value from their systems; Quality Management Systems (QMS) and EHS solutions are expected to do more and provide more immediate value. The CIO will look at their infrastructure and say, “can my too-big-to-fail systems handle the processes we need, and if not, what systems can we put in place that will integrate with these systems and provide me with quick ROI?” QMS and EHS are prime examples of systems to accomplish this goal. Here’s what these systems offer:

1. Workflow and Business Process Automation: Look for a system that has the flexible workflow to not only accomplish the task of Quality and Health and Safety, but to also provide value in all business process initiatives. Can the system be configured to do more for the organization? Leading systems integrate PLM, SCM features into Quality, and add Sustainability to EHS that the software middle-class once handled; this provides additional value to the system and makes it a lower-cost alternative to these middle-class systems.

2. Integration Capabilities: Again, the CIO will ask whether the “big project” systems like SAP can handle the process, and if it can’t, then can it be integrated with these QMS and EHS systems. Look for solid and certified integration points that will enhance your “too-big-to-fail” systems. Leading QMS and EHS systems offer various levels of integration—enough to fill the gaps that are necessary to round out the infrastructure.

3. Provide Immediate Value: When looking at these systems, take time to realize the ROI is critical. The nature of QMS and EHS systems is in their configurability—they are inherently built to be configured quickly and adapt to changing processes with little to no programming or custom development. This enables them to provide value within a short span of time, usually within a Quarter.

4. Demonstrate Definable ROI: This one is tricky—how do you define ROI? Many companies look for quantifiable ROI, but often have no baseline to compare it to. As many organizations are not tracking ROI metrics on a particular software solution, they seek ways to determine how much value a system like Quality Management or EHS Management will provide. Here are just some sample cases where ROI is provided on QMS and EHS systems:

   a. Time Savings: One area is in saving time over manual or cumbersome processes. The nature of workflow-based
automated Quality and EHS is that it reduces the cycle time to complete otherwise manual process. One organization had a Quality Control process that took upwards of 45 days to complete a cycle in a manual process. This was due to diverse locations and compiling data from various sources. Using automated solutions, the QC process was reduced from 45 days to a single day. While not immediately quantifiable, the time savings is staggering.

b. Systems Consolidation: Creating a centralized resource for Quality and Safety is important to demonstrate value. Another company had a diverse portfolio of business systems managing their processes, which would grow over time as new divisions adopted business processes. At its high point, they had over 700 business systems driving processes, with various levels of complexity. Using a single, holistic solution, they were able to reduce the number of systems from 700 to a single system. This alone saves time and money in maintenance, but also provides a more efficient method of tracking Quality and Safety.

c. Administrative Overhead: Manual or cumbersome processes take up resources. Whether this is in man-hours, administration time, or physical bodies, this is time spent on the system, rather than the business. One such example came when an organization purchased a system to manage Audits. The system enabled them to automatically schedule audits versus manually scheduling them. This reduction in time and overhead resulted in a resource savings equal to 5 full-time employees. These employees are now freed up to do work more relevant to the business, and not on scheduling.

So, ROI is all in how you perceive value in the system. Look for a solution that not only is able to provide value in a short period of time, but demonstrates the value in a way that you can relate to your organization. The above are just specific examples. You would need to use these as a base, but will have to determine your own metrics based on your unique business needs. The take-away is that ROI comes in all shapes and sizes, and not only do leading QMS and EHS system provide the low-entry, high value mix, but are prime examples of gaining ROI in a short period of time.
In these tough economic times, companies are always looking for a way to maximize their investments. Whether it's streamlining operations, reducing overhead, or consolidating systems, these measures help to not only keep a company going, but also help to improve in the long-run.

With respect to IT, a growing trend lies in their efforts to improve processes by integrating and consolidating systems. Often, companies "tack-on" new systems to operate processes, until you have a dozen or so systems that have similar functions. IT is now looking to say, "What can we combine to make our lives easier?" For our industry, this is happening in two very similar areas—EHS and QMS.

If you think about it in terms of ISO standards, ISO 9000, ISO 14001 and OHSAS 18001 have strikingly similar components. In fact, over 70-80% of the requirements are virtually identical—a name change here and there, and you have three systems that could potentially be converged into a single, holistic system—the Quality Health and Safety system (QEHS).

In all reality, IT is looking to improve processes. By integrating your EHS and your QMS you are able to do several things:

1. **Enhanced Productivity:** In an integrated system, end users are operating in a single environment, as opposed to "jumping" from one system to the next. Furthermore, employee training is reduced and job tasks are combined. This allows for less time adapting to multiple standards and multiple systems, and more time being productive.

2. **IT Consolidation/Cost Savings:** It's more cost effective to have one robust system as opposed to separate systems. For example, training time is reduced, the management review is combined, and some functions of the EHS system are identical to QMS and can therefore be combined. Combined systems result in a single source, which ultimately leads to better administration and easier implementation. This is because the organization does not have to juggle multiple systems.

3. **Visibility:** In integrated systems, visibility is substantially increased across the enterprise in reporting. For example, overlapping issues are more effectively brought to light, better enabling an organization to notice trends and to link those trends to the underlying cause of adverse events. Visibility is also enhanced in management. With reports that span Quality and EHS, there is no loss of communication or data due to disjointed systems, enhancing the reporting process significantly.

4. **Ease of Compliance:** Due to the similarities between the ISO 9000, ISO 14001, and OHSAS 18001 standards, regulatory compliance becomes easier. A QEHS system combines the common elements of the three standards, further consolidating the compliance requirements.

5. **Ease of Auditing:** Audit plans can be easily consolidated to span the standards since the QEHS system provides overlap in process requirements. A QEHS system eases the process of auditing because there is no need to audit the same tools twice. For example, a separate EHS and QMS solution will both have Document Control system that must be audited for each system. However, combining these systems will result in having to audit only one Document Control system that covers all the standards, cutting both time and costs for the company.

Here’s a quick look at how the systems can be combined:

There are many benefits of combining the EHS system with the QMS—IT is happy because they’ve consolidated and integrated. Management can see a bigger picture. Employees can operate in a single system. Overall, this is a trend that will not only help with the bottom line many of us seek, but also give us a better, streamlined process from which we can operate more efficiently.
In the previous chapter, it was discussed that in an effort to consolidate and/or integrate business systems, many software solutions would need to serve a dual purpose, or converge. Specifically, QMS and EHS Systems share enough commonalities that they can easily be converged into a single system.

If we were to take the ISO standards for Quality (ISO 9001), Environmental (ISO 14001) and Health and Safety (OHSAS 18001), we would see that they match up quite nicely with each other (with a few exceptions, of course). It stands to reason that creating a converged system can work.

However, converging the systems by matching common business processes in not enough. The end users—your employees—need to be factored into this model. In fact, employee training and adoption of convergence is key to success.

When looking at Quality and EHS processes, organizations can examine the employee’s role. For example, employee training requirements span Quality, Environmental and Health and Safety disciplines. An employee-focused approach would capture all of the requirements applicable to the employee’s role, independent of the discipline from which they derived. The employee would use the same system to, for example, certify to requirements regardless of discipline, thereby negating the need for three systems. All three disciplines provide a Corrective and Preventive Action (CAPA) system.

An employee-focused approach would enable a user to launch a CAPA for any event, regardless of the nature of which it occurred (Quality, Environmental, Health or Safety).

Integration at the process level helps to mitigate the risk of duplication that could occur when juggling multiple standards. Best in class, integrated solutions include an Employee Training feature to seamlessly manage the responsibilities of each employee, as well as to provide a method for scheduling and recording training.

So, when you think about the concepts of integrating and consolidating your systems, the process is not the only consideration. Taking the employee-centric approach to a converged system will not only improve the system consolidation, but reduce the training burden on your employees.
Sustainability Performance in EHS Systems

With many organizations adopting sustainability initiatives in the past few years, one thing has become evident—there is a lot of data being fed into the system. Energy management, waste management, emissions, commissions, permissions and the like—there is a ton of data to be tracked. Organizations have invested in software and hardware to detect and record environmental metrics, collecting this data in to historians and controllers.

This may leave an organization with several questions—what do we do with that data? How can we track our performance of all these metrics? How can we take action on the sustainability metrics we’ve worked so hard to gather?

Using EHS management systems, you have the ability to make sense of the data, organize it into a logical group, and take specific actions to correct and improve sustainability performance. Let’s look at some of the areas where EHS systems can provide a platform for sustainability excellence:

1. Tracking Aspects and Targets: A critical part of sustainability management is outlining all the environmental aspects your company has to track. EHS systems provide the platform for identifying the various aspects and tying them to specific areas within your organization. Using a hierarchical structure, you can identify the aspect, the units of measure, and what your target goals are.

2. Sustainability Performance Management: Keeping record of the aspects and targets will give you the road map of where you want to be with respect to your sustainability initiatives. The next important step is how you organize the data that comes in from the various environmental controls. The EHS system is a prime platform to collect and analyze this data. Using EHS Sustainability Performance Management, you can input all the data around your sustainability initiatives, compare them to the targets you’ve set and uncover the various trends centered around sustainability.

3. Taking Action: Here’s where the EHS system proves the most benefit to sustainability. Uncovering the visibility into sustainability performance will ultimately drive decision-making and the need to correct environmental events within your system. This is where the workflow behind EHS systems comes into play. Using best practices and intelligent rules-based workflow, EHS systems can take action on sustainability events through processes such as:

   a. Corrective Action: If there is an environmental event, the most important catalyst for change is Corrective and Preventive Action (CAPA). CAPAs enable the organization to systematically investigate, correct and verify the effectiveness of environmental impacts.

   b. Change Management: Another important factor is the management of change within the organization. As you take steps to improve your ecological impact on the world, having a dedicated Change Management system can help to drive the deliverable to execute on that change. EHS systems provide the core functionality and workflow to not only make sure that change is executed within the company, but also that it’s executed on time and within the specified parameters.

This is just a simple, quick look at the concept of EHS systems interconnecting with sustainability management in an organization. The EHS system provides the platform and functionality to not only set the targets and record the data, but also to provide trending and analysis and foster organizational and ecological change within the business.
Where do QMS and EHS Management Systems Fit into SAP?

SAP Administrators are the champions of the SAP effort, but don’t always have visibility into the operations of Quality and EHS management. Quite simply—they need to know what the vision of Quality and Safety is in order to effectively weave it into the fibers of the SAP implementation.

What Quality and Safety managers need to do is demonstrate the various scenarios in which Quality and EHS software solutions would be the best fit into the SAP paradigm. SAP Administrators also need to know the various scenarios in order to accurately map Quality and Safety into the SAP family.

1. SAP Enterprise Resource Planning (ERP): Also known as SAP Enterprise Core Component (ECC), this provides the platform for many of the operations in businesses today. Inventory, inspection, planning, development, and production; all are functions of this product.

   Scenario—QMS Nonconforming Materials (NCM) linked to SAP: SAP is able to handle many of the transactional data surrounding production and quality notifications. What a QMS can do to enhance this is provide the granular level of how to handle a quality notification. When a notification is triggered in SAP, the QMS can take over in an NCM process, which provides the platform and workflow for investigation, material review, and corrective action. The workflow is able to feed information back to SAP as needed, providing important updates on the status of the product on hold. This allows the production team to more efficiently plan and determine when a held lot is going to receive a disposition type. When the QMS is finished with the NCM workflow, SAP then knows what to do with the lot (release with deviation, scrap, rework, etc.) and can better plan their inventory and meet demand.

2. SAP Supply Chain Management (SCM) and Supplier Performance Management (SPM): The SAP SCM and SPM are primarily responsible for handling the logistics, supplier information, and supplier planning within the organization’s supply-chain.

   Scenario—QMS Supplier Quality and Scorecarding linked to SCM and SPM: One of the key areas in Supplier Management is selecting the suppliers with the best Quality record. This can be both qualitative (history, reputation) or quantitative (timeliness, defects per lot). The QMS can pull in supplier information from SAP, link them to supplier Quality Management, and begin to record NCMs and corrective actions attributed to supplier performance. It can then generate the quantitative quality information into a comprehensive Supplier scorecard rating, and then push this information back to the SAP SCM or SPM. As a result, SAP is now enhanced not only with their existing supplier rating to select preferred vendors, but also with a Supplier Quality component to add to the score; this is a powerful function to bring Quality to the forefront of supply chain decision making.

3. SAP Human Capital Management (HCM): SAP is also capable of handling the organizational structure and data from within the SAP system. It ties the people of the organization to the SAP systems and grants access, records information and provides direction on employee transactions with respect to corporate goals.

   Scenario—Linking EHS Injury / Illness reporting to HCM: Workplace safety is an important part of ensuring EHS goals are met, and organizations operate in a safe environment. EHS systems have the workflow and investigative processes in place to record safety incidents and take action on systemic problems as a result of gaps in safety and health. By integrating with HCM, the EHS system can pull data on employees and organizational structure and tie them to incident reports, conduct the investigation and actions necessary to correct systemic issues, and provide training on new procedures arising from these incidents. While the EHS system conducts its workflow-based process, it’s feeding this data back to SAP HCM, updating employee records with safety and training information.

4. SAP Customer Relationship Management (CRM): Customers are the driving force of businesses today, and SAP has developed the tools necessary to manage and track customers, handle interactions with customers, and record the transactions that each department has with the customer base.

   Scenario—SAP CRM linked to Complaint Handling in a QMS: Not all interactions will be positive, and for that, many companies adopt Complaint Handling systems. This is to ensure that information is recorded properly, and investigations and actions are taken to ensure corrections are made to satisfy any concerns. Linking SAP CRM to a QMS Complaint Handling system not only enables a company to automatically pull in the customer data from SAP into the Complaint system, it also allows the QMS to properly investigate the concern, take any
necessary corrective actions, and provide constant feedback to SAP CRM on where the concern is in the complaint process. This not only effectively and efficiently addresses the concerns of the organization and the customer base, but also provides the visibility to assure the team that complaints recorded are being taken care of quickly.

5. SAP Product Lifecycle Management (PLM): In order to manage the product lifecycle, from design to production to release, SAP has a system that manages the logistics, parts, and production elements involved to ensure the product is created on time.

Scenario—QMS Specification Management linked to SAP PLM: One of the key areas in many leading QMS solutions is in controlling documents. Specifically, hierarchical documents such as specifications can be linked together and have relationships to each other (such as parent-child). QMS Specification Management can pull in the product and part data from SAP PLM, update the specification data, and provide a place to ensure any changes to specifications are done in a workflow-based change request. This helps to ensure that proper documentation is up-to-date, and fed back to SAP PLM, making certain that the PLM system is using the most recent and valid specifications within the organization.

Scenario—QMS Change Management, linked to SAP PLM: Another point to add is the concept of change management. As companies receive post-market feedback (see Complaint Handling), the Quality data needs to be translated into change management activities. This is to help ensure that feedback from the customer base is reaching future product versions. The QMS’s workflow and project management capabilities are a prime environment for managing change—they provide an efficient process for ensuring changes are reflected in design, production, marketing, sales and all other areas of the organization. Tying these change management activities back to SAP PLM is critical to continue to update product records, part information, and related information within the product lifecycle.

6. SAP Master Data Management (MDM): SAP’s MDM is the central platform for synchronizing all information within the SAP family, and makes sure that all data is harmonized and consistent throughout the organization.

Scenario—Linking QMS and EHS data to SAP MDM: This is a more overreaching concept, but in general, any data that needs to be recorded in a QMS or EHS system should be able to pull from SAP MDM whenever necessary. Customers, Suppliers, Partners, Products, Employees and similar data can be pulled in from SAP and eliminate double-entry. Similarly, any data that can be enhanced from use of a QMS or EHS system (investigation data, quality records, corrective actions, etc.) can be pushed back into the SAP MDM. This provides the seamless collaboration more SAP administrators look for when thinking of SAP integration with other systems.

These are just a few of the basic scenarios many Quality and Safety managers encounter when looking to demonstrate the value of a QMS or EHS system to the SAP team. The key is not so much to explain the entirety of what you plan to do in your QMS or EHS system, but to show the scenarios in which SAP can be enhanced via these systems, and how QMS and EHS management systems with tight SAP integration can complement their existing SAP implementation.
The Safety Manager Strikes Back: How Star Wars could have Used an EHS System

What if The Empire had an EHS system in place during their reign over the galaxy? Set for stun, and let’s go:

1. Incident Tracking and Corrective Action: On the Death Star or Star Destroyer, you can imagine there will be occupational hazards. Let’s face it—being an officer within 100 yards of Darth Vader is more life-threatening than any job we’ve been on. Vader seemed to force-choke an officer every 20 minutes—was there ever an investigation done on this? Or were the Stormtroopers simply carrying the bodies off screen and moving on? Accidents, whether loss of life or injuries and illnesses require a dedicated investigation on the incident and need proper workflow to determine what at-risk behaviors helped to cause the incident, and take action to correct any systemic failures in processes that led to the incident. If incidents such as these are occurring frequently, it’s important to have a system to track and improve training, procedures, PPEs, and similar elements to ensure proper safety is met within the organization. Then again, who would want to be the guy investigating Darth Vader? Seems like a career-killer for sure.

2. Employee Training: Having a knowledgeable and well-trained staff is critical to ensuring proper procedures are followed, protection is used, and jobs are made safer. The Empire seems a little more bent on galactic domination to worry about some of the details in Employee training. Take marksmanship as one example. Legions upon legions of Stormtroopers on the Death Star and not a single one could hit a small band of rebels? I would think that would come up as a hole in the Training program. Perhaps if they had a training system that notifies managers of failed training tests, maybe they would have uncovered a trend in marksmanship issues. Furthermore, Tie pilots never really seemed to get the hang of flying. They were always bumping into each other, hitting asteroids, or just flying aimlessly in the void of space. Maybe a quick recap on flight safety and navigation might have helped. Employee Training systems can provide recurring training, and notify users when they need to be re-trained (or re-tested) on procedures and events...this might have come in handy after the first Death Star was blown up—“OK everyone, obviously we didn’t train properly the first time—let’s give it another try for this second, larger Death Star.”

3. Job Safety Analysis: One of the EHS functions that I think benefits companies most is the concept of Job Safety Analysis (JSA). The JSA takes a job function and breaks it down to the various steps associated with each job, and assesses the risk of each of those steps. It then sets out to mitigate the risk for each of those steps, whether through PPE, training, procedures, etc. By virtue of mitigating each step, the overall safety of the job is increased. Let’s take the Death Star as an example. In the movie, you had two poor guys whose job it was to stand by a console 20 feet away from the Death Star’s laser ray. Dangerous laser to your left, bottomless pit below, and no guard railing? I would think this would be a hazard. How about the constant ventilation shafts with no railing? Was there a shortage of guard rails in the Galactic Empire? I would think that a simple assessment would uncover that putting a guard rail or two on the Death Star might add a bit more safety to everyone’s job. What about Stormtrooper armor? A simple assessment would also uncover that Stormtrooper armor is completely ineffective to a stray laser blast. That is what I call an ineffective PPE—maybe a Job Safety Analysis might have revealed a stronger armor is needed.
4. Environmental Management: This is where we could debate forever. We could argue that The Empire really doesn’t care about the Environmental impact they have on the Galaxy, but let’s assume there’s some compassion here. The Second Death Star in Return of the Jedi set up shop next to a forest moon, home to furry little creatures. The physics of putting a moon-sized object next to another celestial body would certainly have an adverse impact on the environment. Tidal flooding, gravitational pull and similar factors would need to be assessed. Let alone the impact on the environment placing a shield generator on the moon would have—those little ewoks would be irradiated for centuries! Then, when the Death Star blew up, what about all the debris that would no doubt plummet on to the surface of the moon? Having a comprehensive system that will assess the potential environmental aspects and impacts as the result of production is critical to ensuring that the product is not only safe itself, but also safe to the environment. My guess is that The Empire had little thought to this matter—but as we know now, they never really had a chance, did they?

5. Emergency Preparedness/Crisis Management: Part of any good EHS system is having a plan in place for the unexpected. Leading organizations have emergency preparedness plans, and plans in place to handle a crisis. EHS systems have the environment to manage and track these plans, conduct drills, and assess the risks associated with such scenarios. As we all know, The Empire’s “overconfidence is their weakness.” Never once did The Empire plan for defeat, nor did they propose a scenario where the Death Star “might” be blown up or compromised. Even once The Empire realized there was a danger, Governor Tarkin refused to evacuate. It would appear their solution to a defeat scenario was, “heck with it—let’s build a bigger one.”

I could go on and on with this topic, and I am sure everyone will have an opinion. But at the core of it all, EHS Management Systems provide organizations with the tools necessary to manage and track Incidents, take Corrective Action, and train Employees to improve. It provides the framework to assess the impact on people and the environment, and monitors the behavior of operations to ensure that impact is minimal. It takes a Risk-based approach to safety and focuses on the behaviors and processes that produce the safest environment. Whether The Empire really had any consideration for EHS or Quality Management, we’ll never know—but at least we can say that our job descriptions won’t list “death by force-choke” as an occupational hazard.
The EHS Management Version of Snow White and the Seven Dwarfs

Once upon a time, there was a beautiful princess named Snow White who was un-willfully employed by her evil stepmother the queen. You see, they did not follow acceptable child labor laws, and she was forced to work all day long on the concrete steps in unsanitary conditions. She had no protective gloves for working with cleaning agents, no padding for working on concrete, and the work area was infested with all kinds of unsavory vermin (Woodland creatures are disease carriers).

And to top it off, she was forced to drink well water, and suffer sexual harassment advances from the local co-workers (not everyone thought he was so “Charming”).

So, after an extensive Job Safety Analysis, the queen decided that Snow White’s job posed too much risk to the organization, and decided to have her re-located—or killed—whichever would cost least to the company. The queen’s huntsman took her to the woods, but couldn’t complete his job assignment, so he let her go free. Perhaps if he had undergone more extensive Employee Training, he would have remembered the proper job steps for disposing of a princess—thus stressing the importance of continuous re-training of employees.

So, Snow White made her way to a new workplace environment—as a housemaid for a group of Diminutive Miners. The workplace was considerably unsanitary, and infested with even more variants of disease-carrying vermin (those Woodland Creatures followed her everywhere!).

But, it was good work and the pay was...well, she wasn’t exactly paid. The Miners on the other hand, were working in a completely unsafe conditions, clearly violating the Federal Mine Safety Act of 1977. Lack of respirators, air shafts, Personal Protective Equipment, the list goes on. In addition, it appeared that the work in the mine altered their brain chemistry—some were perpetually Happy, some were Grumpy, at least one was Sleepy and few had chronic back pain. I won’t even touch on the one they called “Dopey” (too much mine dust if you ask me).

Well, one day a local apple processing plant (with similar unsanitary conditions) did not update their Hazard Analysis and Critical Control Points (HACCP) plan and missed a Critical Control Point that checked for magic sleeping poison. Not sure why you would keep that so close to a food plant—but we suspend disbelief for fairy tales, right? Anyway, the failed control and inability of the Food Safety Management System to pick up on the adverse event resulted in a batch of bad apples making their way to Snow White’s workplace. Snow White failed to properly wash the apple and consequently lapsed into a coma.

For fear of being sued, or violating policy by allowing tainted food into their work environment, the Miners rushed her into the middle of the woods and left her hidden from view. After all, they couldn’t have the EPA, MHSA, OSHA, and the FDA coming in to audit them and find THAT.

In the end, one of her former co-workers who actually completed his emergency response training and was a Safety Leader within his division came to the rescue and revived Snow White (in his usual “Charming” fashion).

Incidentally, Snow White went on to sue the Apple Processing Plant, the Diminutive Miners, and her stepmother for violating 30 counts of Environmental, Safety and Health Laws, endangering a minor, and attempted murder by a poorly trained huntsman.

In the end, Snow White took her settlement money and founded a very successful EHS Management Consultant firm, helping various organizations and wayward orphan princesses to manage and streamline their EHS Management Systems (billing at $6000/day, of course).

The End. Good Night, Kids!