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## The Top 10 things to consider when selecting an EMIS!

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**E2 ManageTech, Inc. (E2)** is the leader in designing and implementing Environmental Health & Safety Management Information Systems (EMISs). As a software-neutral company, we are often asked what are the most important things to consider when selecting an EMIS. Based on 12 years of experience assessing and using environmental, health and safety (EHS) software, we have compiled our very own “top ten” list.

### 1. Requirements Definition

EHS professionals seeking a new EMIS often start the process by perusing vendor websites, attending webinars etc. and, before long, find themselves receiving calls from software vendor sales representatives. In many cases, the process continues on to sales demonstrations and ultimately a vendor selection. The unfortunate reality in this common scenario is that the EHS professionals may have never actually documented exactly what they want the software to do. This important step is called “functional requirements definition.” Some basic examples of requirements would be:

- The system must produce Occupational Safety and Health Administration (OSHA) 300 log;
- The system must provide escalating email notifications for overdue tasks”
- The system must provide for waste container tracking and aggregation prior to offsite shipment

Software demonstrations given without consideration of functional requirements will tend to focus primarily on the strengths of that particular software package, and will also make it very difficult to do an “apples to apples” evaluation of various solutions. In the end, the client may unwittingly end up selecting software primarily on the presentation skills of the vendor sales team. Requirements

definition can be a somewhat arduous process when starting from scratch. Nevertheless, taking the time to specify functional requirements is a useful exercise that will help to minimize the chance of buying something that cannot solve your long-term information management needs. EMIS consultants have extensive experience in requirements definition and can lend a hand to guide you through the process quickly and efficiently.

### 2. Involve your IT department early

It is essential to involve your Information Technology (IT) department early in the software selection process. They have important information that must be considered in choosing a software solution. They may have a preference or even requirement for software to either be hosted externally or installed internally behind your company’s firewall. The nature of the installation alone can limit the choice of vendors. In the instance that your IT department prefers software to be hosted, they will likely have standards that the vendors must adhere to regarding security, reporting, single sign-on, integration with other company data sources and data recoverability. Likewise, if they prefer that software be installed internally behind the firewall, your IT department will need to know what type of hardware is required of the software and will have preferences or rules about which backend databases (e.g. Oracle vs. SQL Server) are supported internally, which may further limit the prospective vendor pool. These preferences and requirements are called technical requirements and, similarly to functional requirements, must be considered when selecting software. After all, your IT department will be responsible for many aspects of the technical support of the system, from system availability, network access, desktop support



and, potentially, integrations with existing internal systems such as your email application, HR database, work order system etc. Also, IT departments' services are typically in high demand; therefore, it is best to alert them early in the process that you are considering purchasing software.

### 3. Avoid “not invented here”

The number one killer to successful software implementations is end-user revolt! If you are evaluating software that will be used by many people in various roles across your organization, you need to identify all appropriate stakeholders and get them involved early to ensure their needs are properly considered. Otherwise you may find that important stakeholders that were left out of the design process may develop a “not invented here” mindset, meaning that the system cannot work for them since they did not have input into the design. At this point you have a significant uphill battle to overcome before you even deploy the solution. For example, two sites doing the same operations in two different geographical locations, reporting to two different site managers, may have vastly different reporting needs and, therefore, vastly different data collection needs. Facilities often have their own methods to track and report information and it can be difficult to sell them on the benefits of using a central system that may compromise the interface, workflow, and reporting to which they are accustomed. When their needs are not properly considered, they may be forced to continue to use their own legacy systems in tandem with new systems and the new system will be perceived as an unnecessary redundancy. User acceptance is an important issue that needs to be considered early on. The first steps are to identify all stakeholders, get them involved early to ensure their needs are considered, and do your best to ensure that end users have the proper incentives to utilize the new system.

As you search for a software solution, it is important to understand how much flexibility there is in your

### 4. Configurability vs. Out-Of-The-Box

business processes and reporting requirements, as this will have an impact on the level of configurability that is necessary in the solution you select. In the EMIS marketplace, there tends to be a natural divide between systems that are designed to be very configurable versus those that are less readily configurable yet designed to efficiently perform certain functions such as complex emissions calculations, discharge monitoring reports etc. out of the box. For example, there are many software solutions on the market that can be configured to match your unique business process and workflow for incident management and corrective action/task tracking. Generally, tools with extensive workflow configurability tend to be more challenged by information management needs such as data collection and reporting to support emissions inventory calculations. On the other hand, some tools may be adept at integrating with data historians, crunching data and producing complex reports, but tend to be more rigid in terms of workflow configurability and, therefore, may not be the perfect match for your unique incident management and correction action/task tracking workflows.

These are certainly tendencies more than rules and the two sides continue to converge as the EMIS software market matures and evolves. Nevertheless, it is important for EMIS shoppers to understand the balance between adjusting current business processes to the workflow that is built into the software while at the same time ensuring that complex data management and reporting can be readily accomplished by software tools that are inherently designed to be tremendously configurable.



### 5. Consider the benefit of imbedded best practices

When we engage with clients for a software design and selection process, one of the first items we need to uncover is the current state of the business processes we are seeking to automate through software. Some clients have very rigid and successful business processes that are not subject to tinkering, whereas others recognize that there may be opportunities for improvement. For the latter, it is quite common for clients to expect some level of business process improvement to go along with the move towards increased data automation. This is where we typically get into a conversation as to whether or not you need to find a solution that fits your business process like a glove – perfect fit, or like a mitten – it’s got you covered but there’s room to move around.

If you have some flexibility in your approach to optimizing your business processes, it is worth understanding that most mature EMIS solutions benefit from years of tweaking of business processes through input gleaned from scores of EHS professionals from many different industry backgrounds. A typical software upgrade release schedule is a major release annually and minor releases and/or patches every few months. Major releases typically contain fairly significant functionality enhancements. This is necessary to keep the software perpetually current and marketable. This constant process of improving an already mature and successful product inherently benefits customers with industry best practices that are built into the solution.

### 6. Reporting

What is the point of collecting data if you are not going to do something with it? It is very common for our new clients to collect all sorts of data in all sorts of ways, whether manually via paper-based forms and spreadsheets, or via numerous freestanding silo databases, or even via centrally located widely deployed systems, yet are limited in terms of being

able to readily produce meaningful output reports from all that data. This occurs primarily because of our sense as EHS professionals that we should record data that appears to meaningful in some way. Yet we tend not to envision the analytics that can be produced from that data at the time it’s being collected. Consequentially, the data is not being collected in a way that it can be readily rolled up, normalized, parsed, etc. and the result is that there’s a monthly or quarterly scramble to pull together lots of data from many disparate sources. It is difficult to escape this pattern, even if you are purchasing the latest and greatest software solution, unless you make the effort to understand your reporting needs up front. This will inherently define the information you need to collect in the system and how the system needs to be configured to produce the reports you need.

Equally important is understanding how much can be accomplished with standard reports offered by the solution vs. reports that will need to be developed. A software solution that offers great dashboarding capabilities out-of-the-box will still require some forethought, some configuration effort, and organized data. Also, in order to support ad hoc reporting and/or more complex calculations, you’ll need to know if the system has a built-in calculation engine and ad hoc querying capabilities and what their limits are. If not, you’ll want to know if the system can integrate with your company’s standard reporting tools.



### 7. Evaluate the Vendor, not just the software

Once you have narrowed down the software market to a smaller number of solutions that can potentially meet both your functional and technical requirements, it is time to get to know the vendor a little better. If your purchasing department gets involved, they will likely

want to know the financial backing of the company, annual revenue, and growth rates etc. All of this is for good reason. You would hate to be at the hip with the latest and greatest software vendor when suddenly their venture capital pulls out! There are also other important considerations that EHS professionals will want to be aware of, such as, understanding the development roadmap of the vendor. Ideally, the vendor is progressing the software in directions that benefit your business and line up with future phases of deployment that you envision could be useful or even necessary. Also, it is good to know if the vendor supports organized user groups or communities that you can participate in and potentially influence their software development roadmap.



“Does the system perform as you expected it to based on vendor demonstrations?” Record the responses and consider them as you make your final decision. Your IT department will likely interrogate the vendor from a technical standpoint. It is your job to make sure they are going to meet your business needs and have the experience and solutions that you are expecting from them.

### 9. How will module phasing be prioritized?

Proper phasing is crucial to software implementation success. It's very rare that clients choose to go for the “big bang” implementation, meaning purchase all applicable modules and deploy all at once. Although this approach can be somewhat cost effective when considering the economies of scale to be gained in negotiating licensing fees for purchasing many modules simultaneously, most clients simply don't have the personnel resources and/or funding available to dedicate to doing a full-scale deployment of all modules. Instead, most of our clients choose to phase the system deployment over time.

Some clients do indeed choose to purchase licensing for modules intended to be deployed in future phases in addition to first phase modules in order to take advantage of potential discounts for licensing numerous modules. But even in this scenario, some level of phasing for actual deployment is typically the norm. More commonly, the question is not “big bang” versus phasing, but rather when choosing to phase the modules in, how to prioritize the order of module deployment. It is important to recognize that software deployments may entail a significant change to the way end users do their jobs; therefore, it is crucial for the software to become culturally accepted. The

Software deployments may entail changes for how end users do their jobs; therefore, cultural acceptance of the software is crucial to the success of the project.

### 8. Talk to client references

The proof is in the pudding. Software vendors can dazzle with demonstrations tailored to your functional requirements, examples of numerous regulatory reporting outputs and formats, and dashboards that match the style of your website. But how do you know that everything you have been shown is actually available today in the product? How do you know exactly how much effort goes into making the examples you were sold on actually work for you in the system? It is vitally important to ask for client references and talk to those references about their experiences. People tend to focus more on client references that are specific to their industry, but it is arguably more important to make sure you are getting references for customers who are using the same functional modules or components that you are planning to purchase, regardless of their industry. It is helpful to create a questionnaire for discussions with client references, such as, “How long have you been using the system,” “Was implementation easier or more difficult than expected or promised by the vendor,”

larger the group of initial end users, the more important this becomes.

When our clients are deploying modules that will impact a large number of end users, we typically advise them to start with modules that will require minimal training, yet be frequently used. The idea is to provide a simple introduction to the system and get the system culturally accepted prior to moving to complex workflows. For example, if a client has incident management and auditing/assessments as a highest priority from a business standpoint, it may be advantageous to start with task tracking since both incident management and audits will generate tasks. Start by rolling out task management to a large group of users and assign simple, yet meaningful routine tasks. Once you have achieved success there, you are ready to move on to more challenging workflows.

### 10. Long-term internal resources for system administration

Once you move beyond your initial implementation and declare it a success, you will move from the implementation phase to the support phase. Logically, it would seem that at this point the hard work is over. Realistically though, in all likelihood there are far fewer resources available to help support and sustain the project than were available during implementation. Therefore, you will need someone to be the system administrator.

Although you can potentially outsource this role, most organizations assign someone internally to own and manage the system. The system administrator, generally speaking, is not someone from your IT department. The system administrator is usually someone within the EHS organization who was intimately involved with the implementation. The system administrator is basically a super-user who understands the business side of the application but can also perform some level of technical work on the system such as security configuration, organizational hierarchy changes, advanced reporting etc. This person is typically the

first line of support when end users have “how to” questions or need something changed within the application. This person also typically maintains the business relationship with the vendor and implementation consultants throughout the lifecycle of the software solution.

The percentage of time this person needs to dedicate to this role varies significantly based on their specific implementation but, generally, the role will require fairly significant effort during the early months of entering the support role. We typically advise our clients to have at least one super user for the system but, in order to help spread out the workload, it may be helpful to assign additional people to be subject matter experts for each module that are able to help with decision making regarding configuration changes, conducting training, etc. Your IT department will also have a role going forward, particularly if the solution is hosted behind your firewall. They will be responsible for the technical side of things, such as, database administration, system uptime, application of patches and upgrades etc.

It is important to recognize early in your planning phases of the EMIS selection process that there will be long-term internal resources required to help maintain the system and keep it current and useful to your business long after the initial deployment.



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