

SAFETY, HEALTH AND ENVIRONMENT VERSUS COMPANY SUCCESS

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BACKGROUND

The current economic climate is forcing companies to increase profits by reducing cost. Most companies have undergone downsizing or slimming exercises and few have any excess resources to trim off. This has made terms like efficiency and effectiveness into “in” phrases and initiated extensive activity focused on how work is done. Existing processes and practises have been carefully reviewed and tools of all kinds have been developed by consultants and within companies aimed at getting new ideas and products to market in the shortest time possible using the minimum amount of resource in terms of people, materials, equipment, etc. Senior managers are often heard speaking about these business challenges. They are also keen to express their commitment to SHE objectives and emphasise that SHE issues should be high on the agenda for all line managers. However, they are rarely heard discussing how these two sets of objectives can be achieved concurrently and give direction on how situations should be handled when the objectives work against each other.^{1,5,6,7}

There has been an increase in the regulations relating to safety, health and environment (SHE). Legislation has moved from being mostly prescriptive to putting emphasis on companies demonstrating that all risks have been considered and how those risks are controlled. However, regulations have not been issued in a very coordinated way and companies end up spending an ever-increasing amount of time and resource producing reports in a format that suits the authorities rather than the company, to show compliance with the various parts of legislation. It is not uncommon that regulations overlap and quite a few require some form of risk assessment to be done. There is also a public demand for reduced risks, putting pressure on authorities to issue even more legislation and on companies to demonstrate to the public that all reasonable steps have been taken to reduce risk. Complaints of insufficient legislation often follow in the wake of accidents. This situation with increasing demand on resource within companies to deal with legislative requirements works contradictory to the pressures of the current economic climate.

DISCUSSION

Industry struggles with this situation, some even say that all production will be driven out of Europe. Complying with SHE regulations is taking up more and more resource, some of which is to a large extent administrative work. The effect of these contradicting items can also be seen within companies. Staff are offered bonuses if production targets are met, or even better, exceeded. Improvements to production processes are sometimes discovered

due to staff taking short-cuts in order to get the job done quicker and are rewarded. SHE departments sometimes become detached from line functions so that the line can focus on their core job, which is to deliver the required product on time and within budget. Complying with SHE legislation becomes a threat to license to operate rather than a core value within companies.³

WHAT IMPROVEMENTS AND WHAT BENEFIT DO MEMBERS OF STAFF SEE FROM MOST SHE INITIATIVES?

No matter how sophisticated the systems for managing SHE issues and achieving good SHE performance are, they still rely on staff doing the right thing. However, communications within companies most often relate to their products in terms of sales. Reports on SHE performance can usually be found in the company annual report. Most staff in Europe can now see small improvements in SHE performance reported and also that SHE performance more and more is used as a tool for companies to impress stakeholders or to give a general PR boost. It is difficult for the average employee to see how SHE relates to them personally.

The average employee does, however, meet SHE in the form of risk assessments that, not only, have to be done, but also, lead to actions that take time to complete, generate procedures that are difficult to follow, require that reports be written, etc. Thereby taking precious resource away from the core job, which is to deliver the required product in time and within budget, whether it is a capital project, a research and development project or product manufacturing. SHE issues are thus seen to put constraints on line functions when they are trying to do their job and SHE initiatives become yet another threat to the success of delivery and not something positive that promotes their chance of successful delivery.

The focus of SHE professionals, on the other hand, is to prevent harm to people, property or the environment in compliance with current legislation. Not many would challenge the validity of that focus but it is totally threat based and not readily aligned with the focus of delivering the right product on time.⁶

CONCERNS FOR THE FUTURE

Should the situation described above prevail, the negative attitudes to SHE will probably spread and improvements will be more and more difficult to achieve. SHE might well become even more isolated in separate departments with specialists that have less and less contact with the rest of the business. Therefore, there is a need to address both the issue of the complexity of regulations that increases the administrative burden to companies and the existing or emerging attitudes to SHE within the current economic climate.

SOME POTENTIAL STRATEGIES

It is essential to explore the possibilities of reducing the complexity of legislation at least on a national basis despite the difficulties it might bring with respect to EU directives and

international standards. This challenge would preferably be met by the authorities in co-operation with industry.

Senior management sets the values of the company and communicates those values both in words and actions. The targets that they set for their organisations reflect those values. Difficulties can arise, as can be seen in the above, during the implementation of those targets. Senior management can resolve some of those difficulties by making it clear to the organisation what levels of risk, whether it be business risk or SHE risks, that they find tolerable. There are a number of problems with setting SHE risk criteria considering issues such as risk communication and perception, public opinion, legislative requirements and international diversity, cultural differences and so forth. Those issues will not be addressed here but there is a need for some guidance as to the company risk criteria. It is also important that senior management is seen to stand by those criteria and recognise that unwanted consequences can become reality. Applying this approach requires an effective and efficient risk management methodology to be adopted throughout the company.

SHE responsibility and accountability clearly sits with managers within the line functions, yet it is not uncommon that SHE issues are handled by a separate department. A number of options can be envisaged for getting managers to take responsibility for SHE:

- Reward SHE performance within companies as well as financial performance. As with all bonuses the business performance is the key to providing money to pay the bonuses. One difficulty with this approach is that SHE performance is more easy to measure in negative terms, e.g. accidents, than in positive terms and that rewarding SHE performance in those negative terms can encourage non-reporting. It may well be tempting to bring people with injuries in and assign them to tasks other than their normal job if the bonus that seems within reach is threatened by reporting.
- Make SHE contribute to business in an obvious way so that the focus of SHE is aligned with the focus of line functions, which is to deliver the required product on time and within budget. This approach would require a willingness of SHE professionals to change and an immense communication exercise to change the perception of SHE within the line functions. It would also require extensive work on how that would fit with commonly accepted risk assessment techniques since the focus of those techniques is to identify failures with potential consequences that involve harm to people, property or the environment.
- Combine SHE with quality assurance (QA). QA focuses on preventing the delivery of an unacceptable product to the consumer. This has more in common with the line functions than the focus of SHE professionals today. QA usually has a poor image because it is often seen as synonymous to an endless flood of procedures and paperwork, which is not unlike the image SHE has. However, QA has a lot of power and, at least in the pharmaceutical industry, is very good at getting messages across to line functions. There may well be some learning to be gained by SHE professionals from QA. In the pharmaceutical industry, QA is backed by powerful authorities and this is at least part of the explanation for the high awareness of QA issues in the line functions.

FDA has inspired fear of being shut out from the American market within companies. Following this strategy could imply that it requires a harsher approach from the authorities for SHE messages to carry the same weight as QA messages.

- Get rid of most SHE procedures. Procedures do not automatically tell people how to do tasks and they do not ensure that tasks will always be carried out in a particular way. Procedures need to be read, understood and people actually need to follow them for them to be effective. There are a number of reasons why procedures may not be read, understood or followed such as they do not give the best method, they are not readily available or out of date, they are written to impress others or to satisfy inspectors, they are written by people who do not understand the task or the environment it has to be carried out in, etc. Reliance on procedures creates an administrative burden and it discourages creative thinking but to remain competitive, companies need people to think and to strive to find the best solutions. This would require some way of providing useful and useable documentation of the risks and controls that are present and a high level of awareness and commitment to SHE issues within the workforce.
- Get rid of all SHE professionals to force managers to take responsibility for SHE. Make sure that managers understand their responsibilities, if necessary, by hiring lawyers and have them explain their responsibilities to the managers. This approach would require the availability of useful, useable documentation for the managers so that they can understand their risks and controls.

A common theme to all these strategies is the use of a risk management methodology implemented throughout the company. The benefits of implementing such a risk management methodology would be further increased if the authorities would carry out inspections against that rather than having companies produce specific reports against every part of legislation. Strong commitment from the authorities would be needed to achieve this. Based on what has been put forward previously it can be deduced that a risk management methodology would have certain characteristics to be successful and accepted by line functions. It would have to be effective, efficient in terms of resource, produce useful and useable documentation with a minimum of administrative effort and it would have to be flexible so that it can be adapted to local needs and circumstances. However, a truly successful implementation also requires a genuine no blame culture, that all managers take responsibility for SHE and do not rely on SHE functions to manage issues for them, full support from senior management, the recognition that a certain level of risk must be tolerated and in accordance with that a change of mind of SHE professionals from the consequence focus of no harm to people, property or environment to supporting risk management.^{2,4,5}

THE ASTRAZENECA SHE RISK MANAGEMENT METHODOLOGY

AstraZeneca set out to develop its own methodology for SHE Risk Management in 1999, just after the merger of Astra and Zeneca, building on the legacy approaches used in the two organisations pre-merger. The methodology was to be applied flexibly throughout the

company. It had to be capable of effectively identifying risks, providing line management with useful documentation that was readily understandable and maintainable and it had to be compatible with other risk assessment processes carried out within the organisation.

The AstraZeneca SHE Risk Management methodology that was developed uses the following definitions

- Hazard — Something which has the potential to give rise to consequences which are harmful to people, property, the environment or the business
- Consequences (Impacts) — Events which occur as a result of loss of control of one or more hazards
- Risk — The combination of the severity of a consequence (impact) and the likelihood of it happening (or frequency with which it will happen)
- SHE Philosophies — Statements which define the ways in which hazards are managed
- Control Measures — Equipment or procedures which are intended to reduce risk
- Risk Management — The combination of risk assessment, provision of controls, maintenance of those controls and risk communication.

The methodology consists of three main steps along with a key document called the Basis of SHE. The first step is a Preliminary Risk Assessment where the hazards are identified and SHE Philosophies stated, the second step is Detailed Risk Assessments, using recognised techniques such as Hazop, to analyse all the activities and specify any controls needed and the third step is Periodic Review, which is intended to keep the Basis of SHE document updated. The Basis of SHE document contains up to date and relevant SHE information that is extracted from all the relevant risk assessments. This information includes details of hazards present and associated SHE Philosophies, the significant risks relating to the various activities together with the control measures that are in place to ensure that the level of risk is tolerable and a revision history. This document is intended to provide operators and managers with a quick reference to the way that risk is managed.

This SHE Risk Management methodology has been applied in the manufacturing and R&D organisations within the Company.

CASE STUDY FOR FULL IMPLEMENTATION OF SHE RISK MANAGEMENT IN A LINE FUNCTION

The example for implementation described here applies to a site for secondary manufacturing with about 200 employees. The site has a slim organisation with less than 10% white-collar and SHE and security services are either provided from a central function located a substantial distance from the site or contracted in. The site wished to include safety, health, environment, fire, natural hazards, security and business interruption in their Basis of SHE document along with a map of all their SHE related work and the methodology was adapted accordingly to accommodate their needs.

The project for implementation was carried out over a period of six months and required about 50 man-days.

MAPPING SHE RISK MANAGEMENT INTO THE EXISTING SHE MANAGEMENT SYSTEM

It was decided at the start of the project to map all the SHE related work on the site. The purpose of that was to get a common understanding within the management team of how SHE is managed on the site, to identify any gaps in the existing way of working with respect to SHE Risk Management and to form a base for induction training of new staff.

The structure of the map was based on the illustration of a Health & Safety Management System given in the HID COMAH Safety Report Part 2 Chapter 4. The map generated gives a one-page overview of how SHE risks and issues are managed on the site, covering issues such as policy, organisation, planning, implementation, reviewing, auditing, improvement planning, risk identification and reduction, monitoring and implemented control measures. A gap was identified in the area of Risk identification and reduction during the generation of the map and subsequently addressed by the project.

The working group for this part of the project was the management team assisted by a representative from the corporate SHE function.

PRELIMINARY RISK ASSESSMENT

The second part of the project was the Preliminary Risk Assessment where hazards present on site were identified and statements made on how they should be handled. A few generic examples of hazards and SHE Philosophies are given in Table 1.

Table 1. Hazards and SHE philosophies

Hazard	SHE Philosophy
Substances harmful to the environment Tablets for packing Gases from smoke and water for extinguishing fires	Broken tablets, waste, extractor filters, internal bags, foil from blister sheet production, and contaminated glass must be treated as contaminated waste and disposed of accordingly. Firewater is discharged into the municipal drainage system or collected in a courtyard (surface water drains can be covered to achieve this) for subsequent disposal. Decisions on the treatment of firewater are taken by the person in charge of handling the incident (<i>for example the Incident Commander from the community fire and rescue services</i>).
Corrosive substances Detergents, cleaning agents, battery acid (when adding distilled water to batteries), and the cleaning of print heads	Personal protective equipment is used when contact with corrosive substances is possible. Use of personal protective equipment and handling of corrosive substances are included in personnel training.

This part of the project was carried out by the same team as for the “mapping” exercise.

DETAILED RISK ASSESSMENT

As the site does not have local access to risk assessment specialists, it was decided to choose one risk assessment technique that could be applied flexibly throughout the site and be adapted to the level of detail appropriate to whatever part of the site was being assessed. A risk matrix was created for the site with four categories of risk; low risk, moderate risk, high risk and not allowed risk. All risks within the risk assessments carried out were entered into risk matrices, thus providing the site with a tool for prioritising their improvement work. This part of the project identified some gaps in the risk communication within the site that were addressed after the project was finished.

The majority of this part of the project was carried out by operators and safety representatives on site with some support from the corporate SHE function.

BASIS OF SHE, A LIVING DOCUMENT

The Basis of SHE document was first created at the start of the project and then continually updated as the work progressed. The final Basis of SHE document that was handed over contained the map of all SHE related work with supporting information, the significant hazards identified along with the SHE Philosophies and all risks identified, except those within the low risk category, along with supporting information on control measures implemented and improvement plans. All major activity areas on site, such as goods reception and storage, quality assurance, packing, etc. thus has their own risk matrix showing the significant risks in the area to be used to base training on, to assess the suitability of proposed changes, plan and prioritise improvement work and demonstrate to stakeholders what the significant risks are in their area.

This part of the project was carried out by the corporate SHE function with a high level of consultation with the site management team.

A procedure was established for the continued operation of the Basis of SHE document. Gaps were identified and addressed regarding areas of responsibility and the site role as an active customer within larger capital projects reinforced.

The working group for this part of the project was the management team assisted by a representative from the corporate SHE function.

DELIVERABLES AND FEEDBACK

The implementation work delivered the following:

- A Basis of SHE document that
 - Is appropriate to the site needs
 - Is based on the risk assessment of all activities on site
 - Enables integrated audits
 - Includes SHE, fire, natural hazards, security and business interruption

- A complete map of all SHE related activities within the site to show how they link and achieve risk management
- Risk criteria to be used in risk assessments
- Training for staff
- Instructions for the continued operation of Basis of SHE within the site
- Presentation of the work to local authorities.

Site representatives were asked to give their opinion of the work carried out, the methodology and the Basis of SHE document that they had created. Views from the site were extremely positive and some of the benefits they saw were that they now had:

- A transparent overview of the SHE status of the facility
- A tool to track changes from a SHE perspective
- A tool for ongoing risk management/control
- Raised awareness and commitment from staff at all levels
- Up to date information available
- A tool to be used
 - When recruiting and planning training
 - To facilitate inspections from authorities
 - To facilitate audits
 - To assess the suitability of changes from a SHE perspective

LESSONS LEARNED

Implementing any SHE Risk Management system involves carrying out risk assessments. The risk assessments will identify a number of risks that need to be addressed and actions that have to be taken. It is tempting to start taking care of those issues immediately but that will tie up resources and slow down the implementation process. Experience from the project described here and other implementation projects around AstraZeneca has shown that it is better to focus resource available, especially if it is scarce, on finishing the implementation rather than addressing all the issues uncovered immediately. Projects that run for an extended period of time lose momentum and support as it is not seen to deliver.

It is crucial for the success of the implementation to have the support of management. However, this kind of work has to compete with other priorities, such as delivering the right product on time, and generally does not attract any brownie points so commitment from management can be hard to come by. Raising the profile of the implementation work by ensuring attention of senior management is key to success.

The interface between the SHE Risk Management system and legislation remains an issue. The SHE Risk Management system has a structured approach going from hazards to risks and control measures based on the activities carried out within the company. Legislation is sometimes aimed at the hazards, sometimes the control measures or risk management process thereby interfacing at multiple points with the SHE Risk Management

system. No satisfactory solution has been found to create a smooth interface to legislative demands and it is believed that this can only be achieved through a restructuring of legislation.

Any implementation of a SHE Risk Management system will produce documentation and possibly change established ways of working. It can raise awareness and in some aspects affect the SHE culture of the business. However, within the project described here, there was no follow up as to if and how the implementation has affected the behaviours of people on site. This would have been valuable knowledge when assessing the outcome of the project.

It is vital to involve staff at all levels when implementing a SHE Risk management system. The involvement of operators in risk assessments swiftly identifies differences in risk perception between operators and management. In the case study described here, operators and safety representatives perceived the likelihood of impaired hearing to be high although measurements had been made showing that noise levels were not harmful. Management believed the results to be effectively communicated to operators but the use of the risk matrix clearly showed that this was not the case.

Managers today have a broad range of responsibilities and however competent they are not SHE specialists. Many struggle to see why a SHE Risk Management system is needed and why a SHE Management system is not enough. Putting all the site specific SHE related work into a simple overview picture can be helpful to overcome this resentment to change.

Risk Management implemented all the way through to the shop floor has thus provided line managers with a tool to manage their risks in an efficient manner. The economic climate has not changed and the pressure on cost reduction remains. However, the line managers now have the ability to more fully understand the impact of changes and make an informed choice as to whether they will accept the risks or not.

CONCLUSION

SHE legislation and management systems have to a large extent grown and evolved out of learning and experience from accidents and incidents. This has been necessary and has brought about great improvements. However, the complexity of the legislation and management systems has grown and so has the administrative burden on companies. This, combined with increasing demand on effectiveness and efficiency, is creating a growing resentment to SHE issues within line functions, especially those who have benefited from previous progress regarding SHE issues and have had no major accidents. A change of attitude from all parties involved; authorities, senior management, line management, staff and SHE professionals, is needed to ensure future progress within the SHE area. This will only happen when SHE issues are clearly seen by managers and staff as being vital to achieving the targets that result in bonuses and pay rises. Risk management can be a key element to achieving this change but it cannot be introduced as yet another system beside or on top of all other systems and it has to generate understandable and useful documentation that is easily kept up to date.

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