

# Knowledge Management in SSHE (Safety, Security, Health, Environment<sup>1</sup>)

## White Paper

Knowledge Management (KM) is a systematic approach to organisational learning, and to the development and implementation of best practices. It is a key enabler and fundamental component of operational excellence and continuous improvement in any performance area, and SSHE is no different. Systematically and proactively applying the learning from SSHE successes, as well as learning reactively from incidents and accidents, is crucial to developing and applying a continuously enhanced SSHE culture, SSHE system and SSHE metrics. This learning needs to involve the operators in the business, as well as the SSHE professionals. A world-class SSHE system needs to be underpinned by world-class learning.

This white paper looks at some of the issues and challenges related to applying KM to SSHE, based on the real life experience of application of KM to SSHE in several multinationals in the petroleum and mining sectors.

### SSHE knowledge

Our experience of KM within the SHHE field leads us to conclude that there are two main types of knowledge (not one) which need to be addressed. Each of these knowledge types will need different solutions and different approaches.

**Operational SSHE knowledge** is knowledge which will be used by all personnel within the organisation. Effectively this is knowledge of

- 'how to be safe,
- how to be secure,
- how to be healthy,
- how to avoid environmental damage,
- how to work at heights,
- how to isolate electrical apparatus' and so on.

This is knowledge needed by the business, in order for the business to be SHHE compliant. This knowledge is sent out through awareness campaigns, through the SSHE Rules, through corporate standards and through newsletters and SSHE alerts. This is highly codified, standardised and documented knowledge, often codified into "Golden Rules" or something similar. Knowledge is collected from the business through incident reporting, triggered by alerts, incidents and near misses, and in many legislations around the world there are statutory requirements for incident reporting and for acting on the lessons acquired. Indicators of SSHE performance tend to be lagging in nature eg the number of incidents. Operational SSHE knowledge tends to be very similar across industry sectors and isn't perceived as providing competitive advantage. Companies frequently share extensive SSHE experiences, provided there is a KM system, or approach designed to cross organisational boundaries.

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<sup>1</sup> Also known as HSSE

**Professional SSHE knowledge** is knowledge which will be used by the SSHE professionals in the implementation of the SSHE standards and practices. Knowledge is shared through networking between the SHHE professionals, and captured from the business through lessons learned reviews. Effectively this is knowledge of

- “how to implement SSHE standards,
- how to influence contractor and staff SSHE performance,
- how to change the culture to become SSHE aware,
- how to induct new staff in the SSHE environment”.

This is knowledge needed by the SSHE professionals, in order that they can help the business become SSHE compliant. It is proactive rather than reactive. There is no statutory requirement for this form of learning, and learning is generated more through successes and the absence of incidents, than it is from the incidents themselves. This is the knowledge that will cause one company to be perceived by Government Agencies, staff, or contracting agencies to be more ‘safe’ or ‘environmentally aware’ than another.

## **The requirements for success in SSHE Knowledge Management.**

Experience shows that there are several essential factors for Knowledge Management success in the area of SSHE. These include

1. Management focus and direction
2. Clarity of roles and accountabilities
3. Clear processes for knowledge acquisition, sharing, capture, organisation and retrieval
4. KM technology available to all
5. Clear ownership of critical knowledge areas
6. Tracking the effectiveness of the system, and the re-use of the knowledge.

Our experience of the application of KM to SSHE has been that these key elements are mostly in place for operational SSHE knowledge, with items 1 through 4 very typically being addressed. For professional SSHE knowledge, there are often far fewer components in place, indeed in some organisations the distinction between operational and professional SSHE knowledge is not one that has been identified.

## **Operational SSHE knowledge management**

An effective Operational SSHE KM system will have some or all of the following attributes.

1. Management are clear on the SSHE aspirations of the organisation, and that the organisation must learn, and use its knowledge, to meet these aspirations.
2. HSSE roles and accountabilities are embedded in the business, and these accountabilities include incident investigation and reporting, SSHE risk and hazard identification, safety briefings, toolbox talks and training.
3. The processes for incident investigation and reporting, SSHE risk and hazard identification, and safety briefings are well known and well documented, and are widely applied. These processes include deriving effective lessons for others, and reviewing lessons from others.
4. Technology is in place for storing, organising and distributing incident reports and lessons learned reports, Alert systems are in place for High Potential Incidents.
5. Subject matter experts are in place for critical areas of SSHE knowledge such as electrical isolation, site security, working at height, waste water treatment, etc (whatever is relevant to the organisation in question).
6. Lessons and actions from incident reports are tracked, and the organisation is able to monitor the application of these lessons and the closure of the actions, both at the site where the incident occurred, and at all other sites with similar operations.
7. Knowledge of "How to be safe", "How to be healthy" "How to be secure" and "How to preserve the environment" is codified in guidelines, Golden Rules, and educational material, and deployed to all staff.

## **Professional SSHE knowledge management**

An effective Professional SSHE KM system will have some or all of the following attributes.

1. Management are clear on the areas of focus for the SSHE professionals and where organisational learning needs to be applied
2. Accountabilities have been defined for capturing lessons and knowledge from designing and running successful (or less successful) SSHE campaigns, and for sharing and reapplying these lessons to ensure future success. One or more SSHE networks or communities are in place to allow the SSHE professionals to exchange knowledge on successful SSHE compliance.
3. The processes for lessons capture from SSHE campaigns, and from the SSHE performance of operations and projects, are well known and well documented, and are widely applied These processes include deriving effective lessons for others, and reviewing lessons from others.
4. Technology is in place for storing, organising and distributing lessons and codified knowledge which will support and enable the work of the SSHE professionals. This will include a central repository for standards, guidelines, best practices and lessons on SSHE, and a Q&A forum for SSHE professionals.

5. One or more subject matter experts are in place for critical areas of professional SSHE knowledge such as SSHE culture change, environmental excellence, etc.
6. Lessons and actions from SSHE campaigns and from the SSHE performance of operations and projects are tracked, and the organisation is able to monitor the application of these lessons and the closure of the actions. The metrics are frequently leading indicators.
7. Through the application of the above, a body of knowledge is in place, owned and maintained, which is accessible, validated and easy-to use, and which represents the company best practice on implementing and sustaining SSHE culture and performance.

#### **Case History – BP Turkey**

In the 90s, Road safety was a huge challenge for the BP road tanker fleet in Turkey. A program was implemented to instil safety values, which had remarkable results, completely turning around the safety performance. To learn how this success was delivered, a series of interviews were held with the staff involved. The lessons were packaged in a CD and also placed on the global Intranet for other units to use to improve their own road safety culture. The person who led the campaign now coordinates an active Road Safety community of practice across the company

### **The main difference.**

One main difference between the Operational and the Professional SSHE KM systems is that the former is triggered by incidents and near misses. Once these occur, there is often a streamlined process for investigating and reporting the learnings, and for taking action so that (in theory) such an incident should not reoccur. However the system is reactive; things have to go wrong before learning occurs. The system also focuses on the negatives, and most of the SSHE stories which are told in the organisation are about failure, death and injury, and the avoidance of failure.

A Professional SSHE KM system is more proactive. It focuses on learning from success as well as failure. By introducing regular and scheduled learning review, lessons from incident-free operations and successful SSHE culture change programs is routinely captured and re-used, giving the organisation the opportunity to learn from success, and the replication of success.

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