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CONFERENCE WHITEPAPER

THE ROAD TO OPERATIONAL EXCELLENCE

A digital solution that embeds EHS in everyday work

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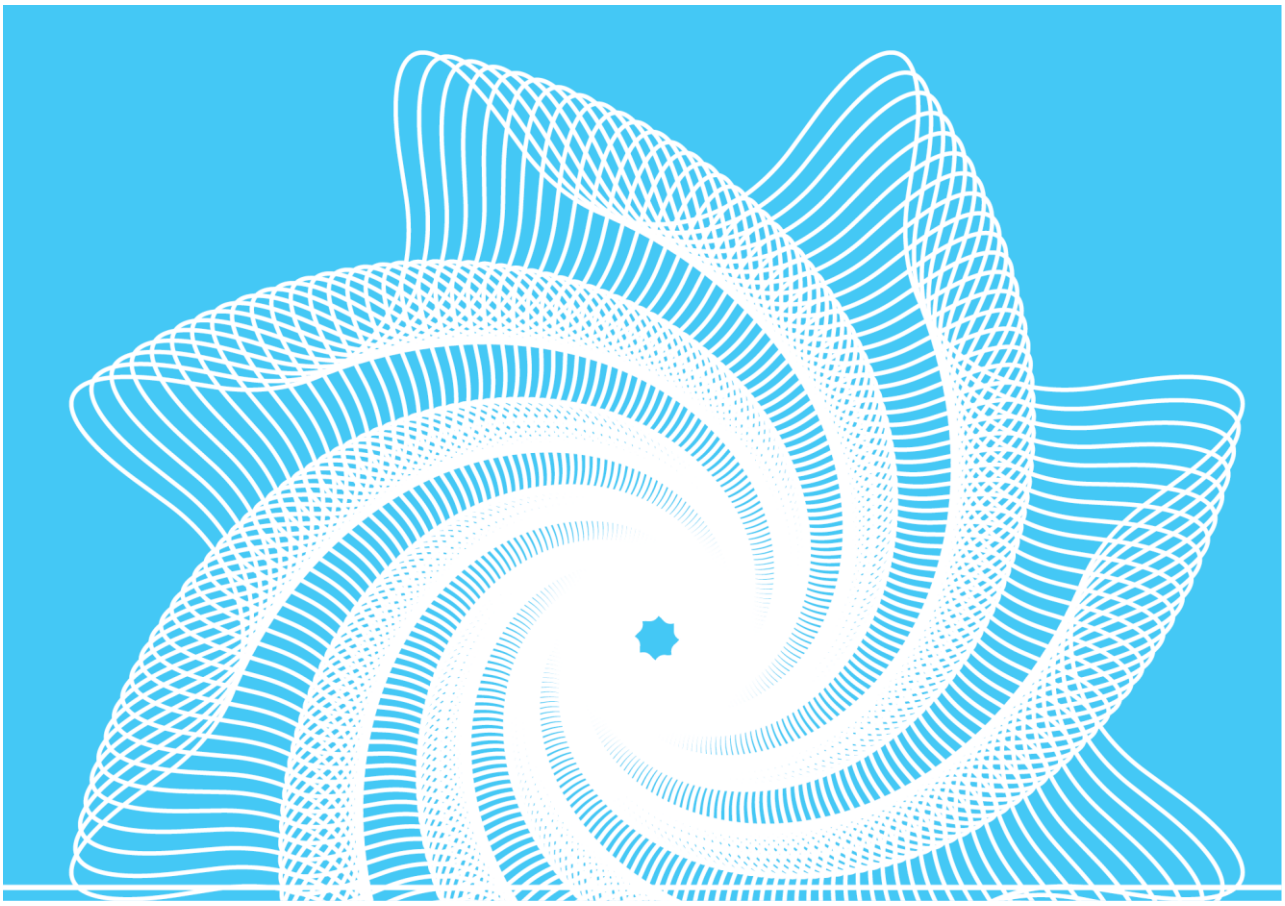

SAFER, SMARTER, GREENER

Reference to part of this report which may lead to misinterpretation is not permissible.

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1 EXECUTIVE SUMMARY

To achieve both high standards of Environment, Health and Safety (EHS) and operational excellence, a well-structured and fully implemented management information system is needed to bring value to both EHS & risk managers and the executive management team by providing the relevant information to support the short and long-term planning and decision-making. Reliable, accurate, and trustworthy data from diverse sources, aggregated to the levels of decision-making, is a crucial success factor. Peer companies in several industrial sectors are gaining valuable experience from holistic risk and QHSE software. Companies are claiming they can reduce indirect costs by improving the efficiency and effectiveness of the operational risk and event management processes and their direct cost by reducing the overall risk level preventing loss from unexpected events.

2 INTRODUCTION

In 1992, Professor Richard Wokutch wrote in his book, Worker Protection, Japanese Style[1] that "Concern for safety and health is integrated into the production system: It supports efforts to promote quality, and productivity. Accidents would severely disrupt production, and therefore must be avoided at all costs. Individual workers and line managers take primary responsibility for ensuring the workplace is safe and healthy".

In today's global business environment, there is a deep awareness of risk, yet most companies believe that the cost of losses due to poor quality and risk practices is at an acceptable and low level. Research shows that this is not the case. Impact due to nonproductive time, non-conformances, incidents and lack of QHSE performance can be as high as 10-20% of company revenue, in addition to the effect on reputation and brand value.

Operational excellence in the Environment, Health and Safety (EHS) industry is when all of the organization's assets, processes and workforce align to bring the organization to an ideal state of performance.

EHS operational excellence can be defined as the systematic management of personal safety and health, the environment, quality, process safety, reliability and efficiency to realize the best performance. More generally, operational excellence in any industry could be defined as the sum of the successful implementation of strategy, process management, performance management, improvement, organization, and employee engagement, with a focus on meeting the expectations of customers, stakeholders and society. It drives everything the organization must do to remain competitive in a demanding and ever-changing world market.

The organization's workforce must genuinely believe that incidents are entirely avoidable, and it must have policies, processes, tools, and behavioural expectations in place to achieve (EHS) operational excellence.

Risk, productivity, cost, and sustainability are inseparable, and the key to EHS operational excellence is to enable everyone, from the executive team to the front line operator, to understand how actions and decisions impact their part of the business.

This can be achieved through a specific operational risk management framework bringing together quality, EHS, sustainability, risk management, security, audits and inspection, barrier management to provide a comprehensive and holistic enterprise risk management strategy.

Every year, high risk industries such as energy, chemicals, and utilities, see increasing mandates for compliance and reducing risk, yet are being pressed to drive more efficiency in their operations.

[1] Wokutch, R., 1992. Worker Protection, Japanese Style. Ithaca, N.Y.: ILR Press.

3 EHS ELEMENTS FOR OPERATIONAL EXCELLENCE

3.1 Successful business integration

EHS is a function creating and delivering value; it is as much a part of the business as the other functions of the organization. EHS is continually aligning with the organization strategy and transformation initiatives to improve operational excellence, business continuity, and ultimately profitable growth.

Operational risk management is now a strategic priority. Organizations must now manage dynamic organizational risk profiles as they face constant changes in technology, operating business models, and economic landscapes. Threats to business continuity, such as industrial cyber security, become more evident, and EHS, as well as operational risk management, are increasingly crucial for executive enterprise risk management decisions and initiatives.

3.2 System thinking

Thinking and re-engineering how an organization can sustainably, safely, and reliably deliver products and services, requires a system thinking approach. Silos, lack of cross-functional collaboration, diverse, overlapping or outdated systems, disparate and spread data remain barriers to high EHS performance.

Even organizations with an effective EHS management system will see their operational performance results sub-optimized unless EHS disciplines and the other functions adopt system thinking and take advantage of intra- and inter-connectedness.

3.3 A business partner in the digital transformation journey

As organizations implement transformation initiatives enabled by digital technologies, the EHS business function finds itself at a junction representing an opportunity to engage and contribute to both the bottom line of the organization and the welfare of the society at large.

Digitalization affects processes in their entirety and goes beyond merely transferring or migrating from traditional tools (paper forms, spreadsheets, etc.) confined to a function or a task.

This transformation accelerates with the evolution of technologies, their democratization and the emergence of new uses of mobility, the Internet of Things, and the massive availability and utilization of data.

Synergi Life digital technologies, such as predictive analytics solutions, support the digitalization transformation of its adopters. With increased awareness of the opportunity, the benefits of getting in front of digital QHSE will be more apparent and acted upon. Operational excellence means standardizing processes with a cloud-based enterprise QHSE software and extending it with mobile apps.

3.4 Connecting the workforce

Connected worker solutions leverage the flow of data and information related to how workers interact with their work environment.

Scenarios include delivering context-sensitive information to the worker (safe work procedures with AR, etc.), real-time monitoring and response to worker-related data (toxic gas exposure, hazard proximity, falling objects), and use of Big Data for predictive risk management (applying advanced analytics to data collected by smart wearables to identify trends, patterns and anomalies to be able to implement preventive actions).

The use of virtual reality will allow organizations to train the workforce in a safe environment. Employees will be able to experience the result of their actions and decisions without putting themselves or others at risk.

They can train workers to respond appropriately to high consequence but infrequently occurring events, for example rescuing a colleague from a confined space.

Data suggests that VR training can be remembered more easily than video content.[2]

3.5 Connected safety

Connected safety wearables, applications, platforms, and software are part of the Internet of Things (IoT), products designed to assist organizations in driving improvements across various elements of their safety programs.

This next generation of Personal Protective Equipment (PPE) is evolving to embed sensors and companion software applications. This development helps organizations in their digital transformation towards increased worker safety through combinations of data science and PPE technologies.

This digitally connected PPE is designed to help EHS managers gain new insights into the effectiveness of the PPE with a detailed usage history. Supplementing the required visual impact indicator, EHS managers can now remotely access accurate data regarding EHS events (falls, brake events, etc.).

In addition to the recording of the date and time of events by sensors embedded in the PPE, the device sensors also track day-to-day usage—how many extensions, pawl locks and minutes of active usage the device has experienced, all time-stamped for ease of later analysis. A connected wearable PPE could provide new insights to help organizations increase worker safety and overall compliance tracking.[3]

3.6 Social responsibility

Changes in regulations, technology, economic constraints, and social forces have led to increasing scrutiny by stakeholder groups, agencies, and society. To meet the expectations of the stakeholders, better processes, effective management systems, in-depth data, and insights for decision support are required and need to be supported by modern information technology.

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[2] Allcoat, D. and von Mühlenen, A. (2018). Learning in virtual reality: Effects on performance, emotion and engagement. Research in Learning Technology, 26(0).

[3] Occupational Health & Safety. (2020). Technologies Helping to Drive the Future of Jobsite Safety -- Occupational Health & Safety. [online] Available at: https://ohsonline.com/Articles/2019/09/01/Technologies-Helping-to-Drive-the-Future-of-Jobsite-Safety.aspx?Page=3# [Accessed 4 Mar. 2020].

3.7 Involved workforce

Workforce means all who work at the company (employees, contractors, agency workers, etc.) Here "involvement" indicates the active participation of the workers and their chosen representatives in shaping the critical elements of EHS management, such as performance reviews and setting KPIs.

Developing a healthy and constructive EHS culture

Involving the workforce is efficient management practice for achieving better quality, design, productivity, etc. Without workforce involvement in EHS management, managers and health and safety specialists may:

- become separated from the day-to-day operations and prepare process that are irrelevant because they are difficult to comply with or not adapted to the intended use and ignored;
- create cumbersome and excessively numerous rules and policies.

Transparency in performance, successes and improvement areas is possible thanks to the use of operative dashboards that are easily accessible, as well as clearly defined and assigned actions. This is an excellent way to create both collective and individual ownership of the highest standards of EHS within the organization.

Involving the workers also shows the willingness of the organization to go beyond regulation compliance. It shows that they see safety representatives as partners, working together towards stellar EHS standards and results.

3.8 Controlling change

For organizations undergoing fundamental changes, it is essential to have a structured and efficient way of identifying and managing the risks associated with implementing the changes. Synergi Life facilitates the workstream for establishing and implementing an efficient Management of Change process.

Synergi Life lets organizations identify, manage, and control risks in real-time, thereby improving decision-making throughout the process. It also supports the systematic identification and evaluation of the effects of changes while facilitating and documenting the management of change process (from changes to work processes, operations, human resources to the organizational structure).

4 TURNING SAFETY-CRITICAL BUSINESSES INTO DATA SMART ORGANIZATIONS

Most companies lack a complete picture of their enterprise risk portfolio. At the same time, stakeholders demand corporate accountability and transparency, while globalization calls for businesses to address risk quickly and demonstrate their risk performance almost in real-time. Corporations call for state-of-the-art technology and software support to respond to the requirements.

4.1 Impacting profitability and efficiencies

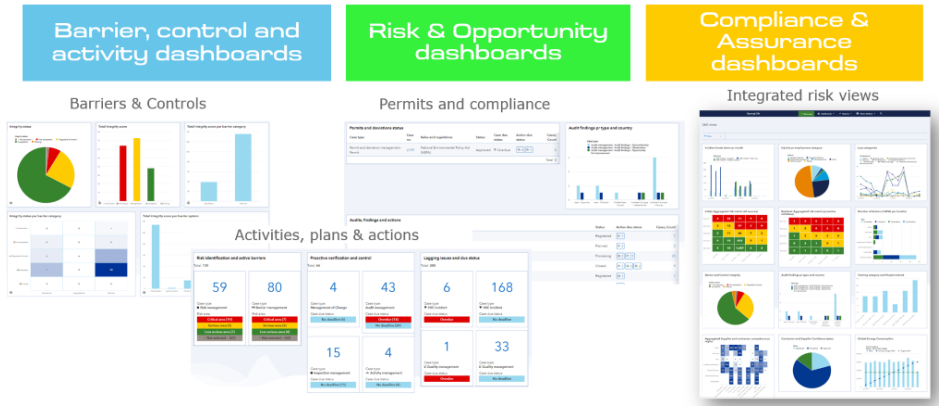
Management information systems were formerly introduced as a means to foster learning, experience transfer, and performance improvement in the conventional safety management area. In recent years, the systems have been developed to offer modules to integrate a broader range of the holistic risk management process. Several companies have reported a significant effect of their efforts from the more structural approaches:

- Avoiding (major) accidents and business interruptions; helps to analyse patterns and provide early warnings for undesired events. Reduces the number of incidents/accidents that lead to stop/delay in production, damages, and injuries.
- Regularity in operations; The increased understanding of operational risk will allow a quicker implementation of compensating measures that can avoid costly production reductions due to non-conformities, incidents and barrier degradations.
- Increasing efficiency in decision-making; suitable visualization solutions support more efficient decision-making and optimal decisions by prioritizing issues with the highest risk contribution. Easing reporting at all management levels as well as benchmarking between assets, organizations and geographies.
- Increasing transparency and safety culture (long-term).

4.2 The role of modern information systems

From a management perspective, the amount of information gathered from the overall proactive and reactive risk management process can be overwhelming. Bringing consistency, transparency, and clarity in this data is a crucial challenge.

However, managed well it will bring knowledge to support the short- and long-term planning and decision-making. Successful companies claim to improve the overall profitability and efficiency of their organizations. Reliable and credible data from the risk sources aggregated to the levels of decision-making is a crucial success factor. Depending on the relevant data flows and touchpoints, information from various sources is brought to their attention in interactive dashboards.



A holistic QHSE and enterprise risk management software like Synergi Life offers:

What can a holistic QHSE and enterprise risk management software, Synergi Life, do?

- Offer modular domain strengths to deliver a broad software platform of diverse QHSE solutions. Effective, scalable software products.
- Reinforce users' adoption thanks to user-friendly, configurable functionalities, user-friendly interface, and customer support that help organizations to improve both data collection and data quality further.
- Automate data capture and collection, make use of edge technologies thanks to an interoperable, easy-to-integrate platform
- Deliver preconfigured, industry-specific solutions that address organizations' focus on the alignment of operational risk, quality, EHS, chemicals, and sustainability.
- Contribute to remove information silos between the different disciplines of risk management, governance, and compliance, while offering optimized process support reflecting demands from both reactive indicators and proactive initiatives. It includes processes for incident and event management, quality management, environmental management, risk management, barrier and control management, insurance, claims and fines management.
- Include all relevant stakeholders, including internal organizational units and employees, as well as third-party organizations such as suppliers, vendors, contractors and partners.

Our mobility strategy has played an essential role in securing the successful engagement of edge or front end-users, as it enables easy data capture by simply recording key information, a picture, voice or video. It also facilitates both online and offline processing. At the same time, supervisors and coordinators appreciate finding their most relevant information and action points available at their fingertips and senior and top management appreciate analytics that appear instantly when they enter the application.

Depending on the task, information is brought to the user's attention as alerts, notifications, e-mails, and embedded reports or in interactive dashboards across devices in a responsive and user-friendly design.

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