

EHS Maturity in Mining: How Does the Industry Compare?



The Road to EHS Maturity in the Mining Sector



The Global EHS Readiness Index (GERI) provides insights from over 1000 Global Health and Safety Leaders. This benchmarking report provides a comparison of EHS maturity in the Mining Industry versus all industries in the study.

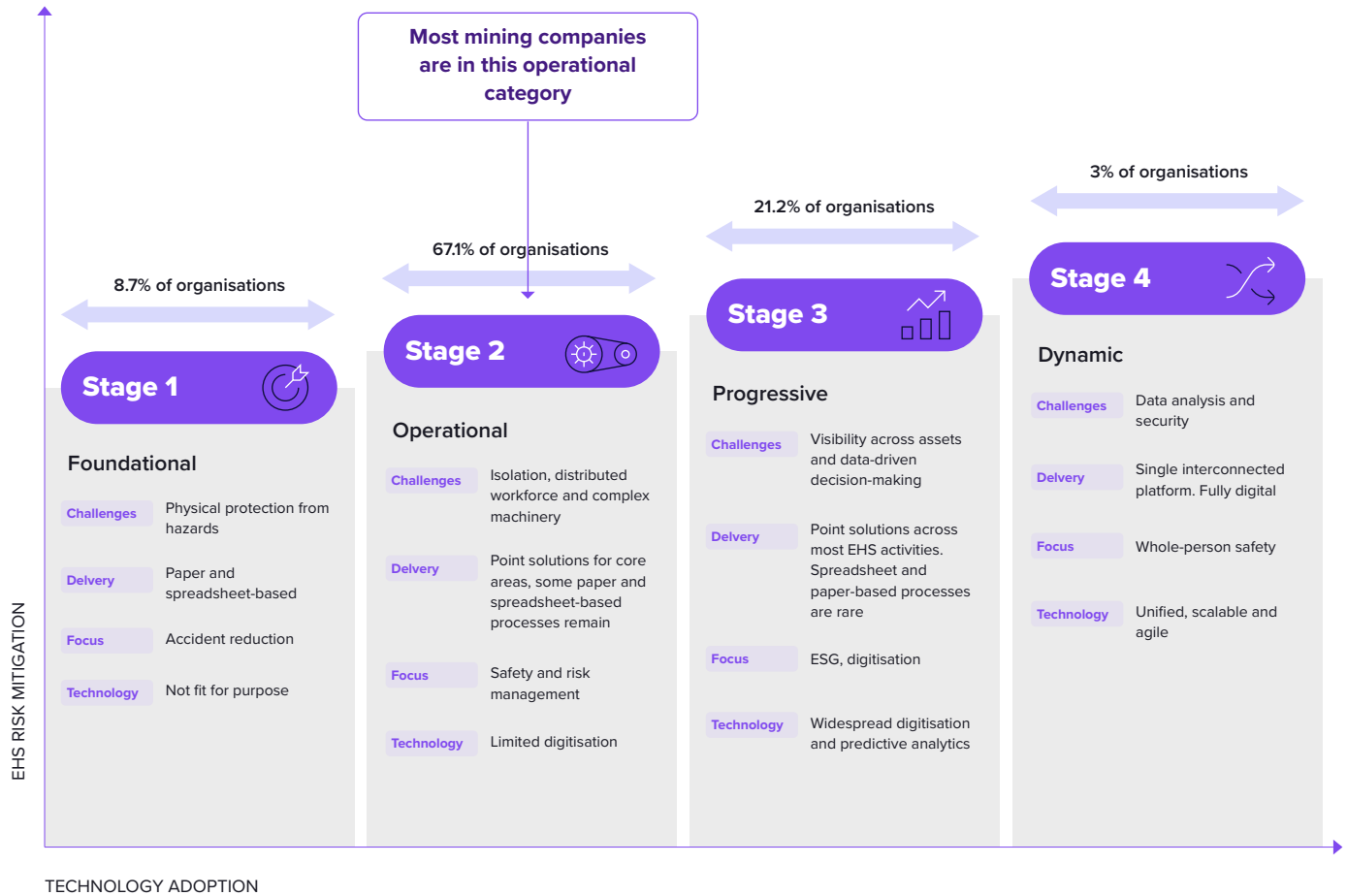
Mining workers face a range of serious and high-risk EHS hazards. These include exposure to hazardous dust, silica, and toxic gases; risks associated with heavy machinery, vehicle collisions, and equipment failures; the dangers of ground instability, rockfalls, and cave-ins; confined space hazards; noise-induced hearing loss; ergonomic strain from repetitive tasks and manual handling; fire and explosion risks; and exposure to extreme temperatures. Additionally, fatigue, isolation, and mental health challenges are key psychosocial risks in the sector.

The recent HSI and Focus Network Global EHS Readiness Index (GERI) highlights major gaps in EHS posture in the sector and offers guidance on how to optimise EHS outcomes. Technology plays a key role in managing EHS risk in mining.



Figure 1

Evolution of the EHS Function in the Mining Sector





The Key Challenges Faced in the Mining Sector



The mining sector is constantly under pressure to increase productivity and the performance of mines. Simultaneously, the volatile nature of the industry and growing environmental sustainability requirements, make optimising EHS outcomes, a challenge. New EHS technologies were adopted rapidly, augmenting existing controls and creating greater complexity. Much greater volumes of data are now collected in the mining sector to enable faster EHS decision-making. The sector is also characterised by the widespread use of highly distributed workforces and high use of contractors and other third parties. This is creating increased complexity for EHS leaders and driving an urgent need for greater interoperability. Gaining visibility across mining value chains and ensuring that EHS and ESG policies are implemented consistently is a fiendishly difficult task. In common with other industries, psychosocial risk is increasing, requiring a new raft of EHS controls.



Leading EHS implementation challenges faced by mining companies include:



Lack of visibility and integration across assets

The complexity of modern mines makes it difficult to gain full visibility across all assets, drive interoperability, and ensure ESG goals are being met. EHS visibility and consistent EHS policy implementation is increasingly important in the sector.



Cybersecurity issues

Mining companies are becoming an increasingly popular target for malicious attackers. Data exfiltration spying and ransomware attacks are becoming common, and the risk needs to be addressed at all levels of mining organisations, including by health and safety professionals.



Adoption

Ensuring that EHS processes are adopted across mining sites is a major challenge. Technology is widely embedded into mining equipment and training is required to operate it. Building EHS processes into existing technologies and processes facilitates adoption.



Environmental sustainability

The process of mining creates environmental damage and risk which needs to be minimised. The risk can be managed by using technology to manage and comply with ESG requirements.

EHS Maturity in Mining: Areas of Focus

Focus Network's recent Global EHS Readiness Index (GERI) report reveals mean maturity scores by attribute for the mining sector as well as other sectors. Maturity is reflected in percentages, where 100% is the highest score. Respondents were asked a series of questions relating to each component of the EHS function. Responses to these questions were then used to determine maturity for each component. For example, an organisation that indicates it cannot detect mental health incidents is given a very low score for psychosocial and mental health maturity. Another example is an organisation that indicates it has a centralised compliance management system in place. This contributes to a higher maturity score for compliance obligations. Maturity levels for each component are then aggregated to give an overall mean EHS maturity score.

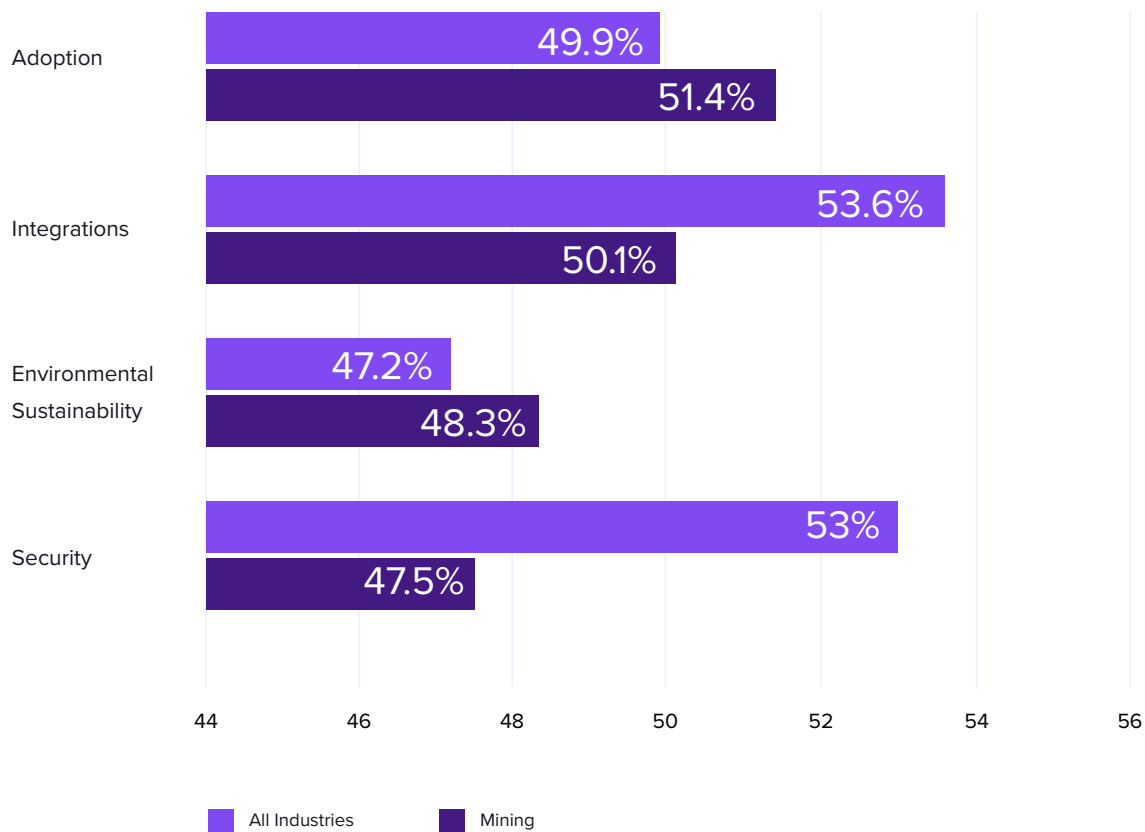
The mining sector is comparatively mature in some aspects of EHS, such as compliance and knowledge management, relative to other industries. Overall, it is defined as operational from an EHS perspective. Nevertheless, it is worth highlighting the EHS areas that require the most focus.



Figure 2 shows EHS components for the mining sector that are the least mature. These reveal the biggest gaps in EHS posture for mining companies. It is these areas that require particular attention. It also illustrates the mean percentage score across all industries.

Figure 2

EHS Components with Low Maturity in the Mining Sector





Data Analytics and Greater Connectivity are Needed for the Mining Sector

EHS leaders in the mining sector need to unify their risk management systems and gain visibility across all EHS functions. This means that companies need to:

Understand their level of EHS technology maturity. They need to identify what they need to do to ensure that they progressively develop their EHS posture.

Have a consistent and unified view of all activities across their supply chains.

All documentation and data should be found in one place. Management and individual workers need visibility of all EHS processes and their implementation. Only 15% of mining companies have a universal EHS management system that offers visibility across all assets and workers, according to the GERI study.

Ensure workforce adoption. Mining workers are frequently being asked to use new technology, often with limited training. Any additional or new technologies must be usable and relevant. 55% of mining EHS leaders cite adoption of processes and culture as the major challenge they face according to the GERI study.

Ensure that technology is adaptable and future-proof. The mining sector is undergoing radical change as digitisation becomes widespread. EHS solutions will need to keep pace with this change and ensure that solutions can be re-configured and improved continuously.

Fully leverage data. Data needs to be collected and analysed across assets and mining sites as well as the wider value chain, to optimise EHS workflows and ensure compliance. Focus needs to be placed on data integrity and data security. The GERI study reveals that only 11% of mining companies have a robust and integrated data capturing system.



Emerging EHS Trends in the Mining Sector

As digitalisation transforms the mining sector it's also having a significant impact on safety.

New technology trends are helping to protect workers from serious safety threats and monitor and manage mines, workers and value chains. Drones and autonomous vehicles can collaborate with workers to lower the risk to humans. Drones can be used, for example, to inspect sites, and check for physical risks coming from mining sites.

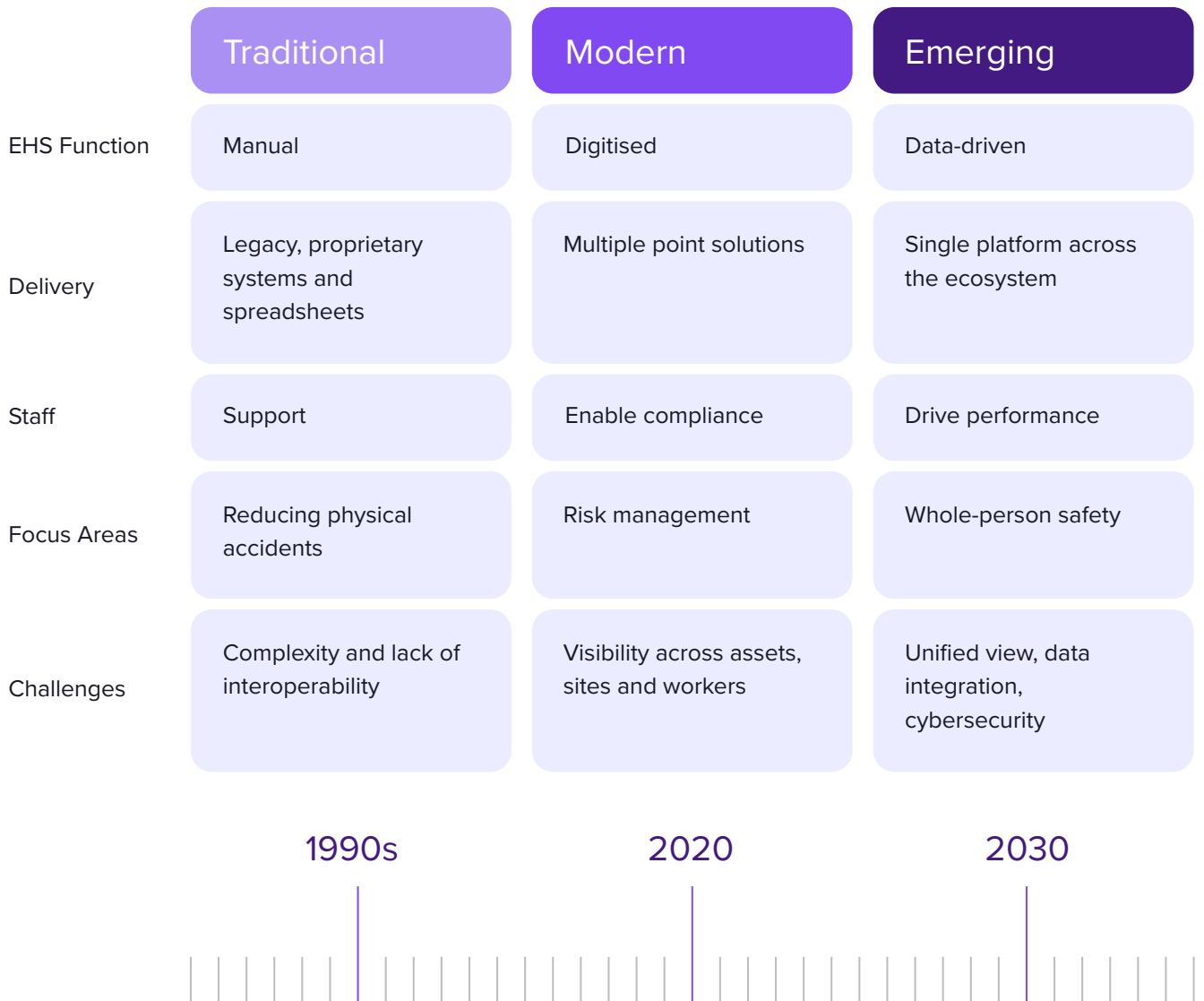
As complexity increases within the Mining sector, so does the move to more advanced EHS processes and systems. These trends are summarised below.





Figure 3

The Evolution of the EHS Function in the Mining Sector





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