

Oil and Gas

Saving lives by **analysing data** to **improve the health and safety** of employees

BSG partnered with the South African operation of the world's largest producer of synthetic fuels to showcase how the client could **improve the health and safety** of employees and service providers **by using historical data to predict and mitigate** against future **harmful occurrences**.



Overview of the client's needs

- Zero-harm environment for employees and service providers
- Reduction in the number and severity of injuries and incidents



Objectives of the engagement

- Enable the client's analytics team to enhance the Safety, Health and Environment (SHE) environment by using the available incident data to develop a fact-based incident prevention solution
- Develop three initiatives to drive the mitigation and / or reduction of onsite SHE incidents



Benefits of the change

- 15% year-on-year reduction in lost working day (LWD) injuries
- A predictive model was developed (at a 95% interval) to predict injuries based on near misses
- BSG quantified the client's monetary exposure as a result of injuries occurring in the workplace

In keeping with BSG's commitment to making a difference in the lives of 100m people, BSG used **historical incident data** to **predict injuries based on near misses**, thereby **enhancing** the client's **SHE environment**.

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Engagement Overview

In line with the client's overall SHE improvement strategy, BSG presented initiatives utilising data to inform how, when, where and to whom incidents and injuries are occurring. The development of an end-to-end information delivery landscape was supported by several prediction models to factually draw inference about future incidents. In addition to this, BSG sought to quantify the social, commercial and reputational risk that the client is exposed to for various types of incidents and injuries.

Solution

There is a high likelihood of injury occurring on a daily basis in an industry where the working environment comprises many people, processes and machines. As a result of this, one of our client's key strategic focus areas is to provide a zero-harm environment for employees and service providers.

BSG utilised historical incident and injury-related data to predict future events based on the time of day (per hour), area of the plant where incidents occur, the nature of the activity and the classification of the incident. The solution comprised the following three initiatives:

1. Prevention of high risk incidents:

1. Identifying the types of incidents which pose the greatest threat of harm to workers
2. Identifying the time trends of these incidents, per hour
3. Identifying the location and frequency of these incidents
4. By assigning priority to high risk tasks, the client can prevent injuries which have a high reputational, social and monetary impact on the business
5. This solution is enabled through the development of an information delivery landscape catering to real time data streaming and incident-triggered communication responses

2. Prevention of service provider related incidents:

1. Create visibility and focus for the client on activities performed by service providers that cause a significant proportion of injuries in the plant
2. Confine these injuries by location in the plant, types of injuries incurred, time of day and where the plant is located

3. Predicting incidents by modelling near misses:

1. Construction of a model that identifies significant statistical relationships between near misses and incidents
2. Identify plant sections and sub-sections in which near misses can be used to predict the likelihood of an injury within a 95% confidence interval

BSG making a difference

Saving lives by improving the safety of the client's work environment and enabling the client to drive the zero harm goal. Ensuring the geographies within which the client operates are safe and South Africans are not negatively impacted through safety incidences. The client will also derive cost benefits by working safer.

Contact

Jurie Schoeman – Chief Executive Officer
Mobile: +27 (0) 83 302 7169
jurie.schoeman@bsg.co.za