Accidents and unplanned events continue to cause harm across all industrial sectors. In particular, the same outcomes and causes are observed time and time again across a range of operating environments. So-called ‘recurring incidents’ are a challenge in many of the hazardous industries despite much existing knowledge of the causes, mechanisms and consequences of workplace accidents.

A major opportunity exists to use our current understanding of people and technology to put existing incident databases to work in pursuit of reducing recurring events as well as improving efficiency and effectiveness of plant operation.

Using historic data to influence real time hazardous operations

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Over the last century the industrial world has changed significantly.

Workers are tasked with precisely managing facilities and equipment that has a complexity and efficiency that could barely have been imagined 108 years ago.

In the last 100 years we have learnt a lot about how accidents occur.

An enormous amount of knowledge exists in corporate databases that contain records of tens of thousands of accidents.

Existing knowledge is not being fully utilised in the form of tools to empower workers to detect and avoid known incidents.

To fully capitalise on this data, we firstly need to better understand how workers interact with different information sources.

Key Questions

As an exploratory starting point, two key questions have been posed:

1. What types of decisions do different workers make and what approach do they take?
2. How do information needs change in different circumstances?

Method

Online and paper-based surveys were used to gather data from frontline and other workers.

183 participants took part in the survey with a 75% completion rate. Most participants were from the oil and gas sector (N = 174) from either the Middle East (N = 117) or Oceania/Australia (N = 43).

Participants were divided into 4 groups based on their job:

Frontline (N = 50)
- Follows procedures
- Percives most decisions as high impact

Business Support (N = 24)
- Tends to determine own action plan
- Mixes different decision types

Leadership (N = 26)
- Tends to determine own action plan
- Sees most decisions potentially high-impact

There is diversity within populations

Within populations there is a range of approaches to the way individuals work (e.g. procedure vs. self planning) and decision making (i.e. routine vs. critical decisions).

The variation is evident in the spread of responses for both questions although there is some clustering in each of the populations.

Answers to other survey questions (not included here) also showed significant spread highlighting how individual needs can vary markedly from the population average.

Information needs change based on context

Between routine, non-critical decisions and high-impact decisions the preferred information source varied in three out of four of the surveyed populations.

In general, individual knowledge (e.g. on the job experience) drives surveyed populations.

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