



Unify Insights

Predictive Analytics: Improving workplace safety in Energy and Utilities

It comes to nobody's surprise that the Energy and Utilities (E&U) industry has a continuous history of implementing high quality policies when it comes to workplace safety. The focus on safety is vital to the entire enterprise but more importantly to the livelihood of the customers and employees dealing with Health, Safety and Environment (HSE) issues. The E&U industry must focus their effort on using their data centric organizations to think outside of policy creation/enforcement and instead increase focus on leveraging existing data. With the advances in data science and predictive analytics, HSE professionals can now improve forecasts related to HSE incidents and near-misses.

Many of us are very familiar with the basic concepts of predictive analytics. When we use Amazon, it provides recommendations based on previous purchases or how Google uses advertisements based on our search history to improve our shopping experience. [A similar but more complex model can be presented in the E&U industry.](#)

To get maximum output from predictive analytics we need to make sure we are using data that is directly relevant to a specific use case. For example, if we are going to forecast the potential injuries resulting from an electric line burial or a pipeline construction program that uses dangerous, material, we would want to know which specific team members run the risk of getting hurt? How would they get hurt? Would it be an injury because of a broken piece of machinery? How

Find out how Unify can help you achieve your vision. Visit www.unifyconsulting.com or contact us at hello@unifyconsulting.com.

In a dynamic and rapidly changing industry, companies are looking for solutions that answer the Energy needs of the future with innovation, meaningful, and measurable solutions. That's where we come in. Unify is primed to deliver unique value-based results coupled with optimal client experiences.

We bring industry experience, ability to execute on time, within budget and with high quality output so our clients can focus on providing safe and reliable energy. Through partnership, we strive to not only become the trusted advisor, but deeply believe our purpose is to become a

extreme is the injury? How many people does it impact? What's the downstream financial impact? What are the risk reduction interventions that should be used?

HSE data for forecasting injuries within E&U should be concentrated on the "prediction use-case" of actions, events, tangential effects, impacts and environmental situation during a specific window of time. Once the prediction use-case is established the HSE Predictive Analytics team can then extract data regarding:

- Near miss incident description including meta information about the description
- Near miss incident rate
- Actual incident description
- Incident rate
- Activities performance
- Date of activities
- Tools used
- Condition of equipment
- Type of injury
- Time for equipment shutdown post incident
- Safety certifications by affected parties
- Severity of the incident
- What could have been prevented
- Subsequent incident description
- Weather

Using the above data elements, we can start to identify algorithms that give basic levels of forecasting from "probability of slipping on a rig during foggy mornings" to a more complex prediction use-case, "buckling of a distribution pole while installing a new transformer".

Using this data to conceptually help predict HSE incidents seems straightforward. At an organizational level, the challenges that prevent predictive analytics from materializing in the HSE space revolve around:

- Data literacy
- Data proficiency
- Poor architecture of systems to aggregate data

- Privacy concerns
- Ethical use of the predictive data associated to employee performance

Supporting an organization that uses predictive analytics in the HSE space will really depend on harmonized data, consistent input of accurate data, and trained employees who understand how to make the right decisions.

Unify has a successful track record of supporting complex E&U organizations that need to build models to support predictive use-cases. From working on Palantir Foundry to building custom algorithms and surfacing it into visual analytical reporting.

To learn more about how Unify can address predictive Health, Safety and Environmental analytics, please reach out to us.

