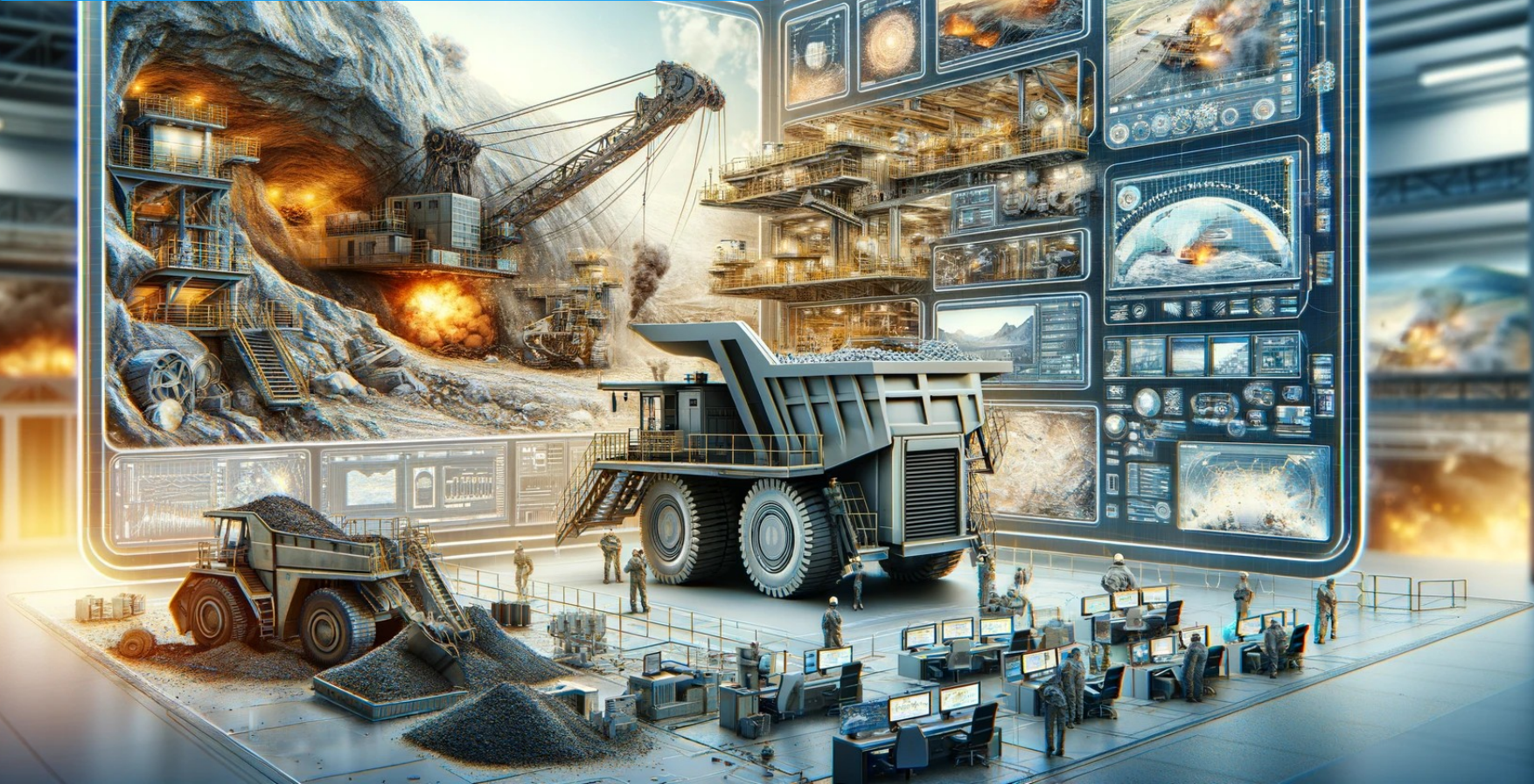


## The Future of Digital Fatigue and Drowsiness Management





# BUSINESS CASE

Customer: CUMBRA



# CUSTOMER PROFILE

A leader in REGIONAL construction



A regional engineering and construction company with operations in Peru, Chile, and Colombia, with a presence in 12 Latin American countries. They specialize in bringing their clients' most complex and relevant projects to life, creating value that drives growth, sustainable development, and commitment to society.

With 90 years of experience executing major landmark projects, they have had a positive impact on communities and countries across the region where they operate.

They provide engineering, supervision, construction, and comprehensive EPC and EPCM services in the sectors of Mining, Energy, Oil and Gas, Infrastructure, Water, and Buildings.



**90**

years in the industry

**12**

countries

**+20,110**

employees

# BUSINESS CASE

Customer: CUMBRA

## IDENTIFIED PROBLEM



# Fatigue in Quellaveco

## A MASSIVE CONSTRUCTION PROJECT WITH THOUSANDS OF CHALLENGES

Quellaveco is one of Peru's largest and most advanced mining projects, managed by Anglo American in collaboration with Mitsubishi Corporation. Located in the Moquegua region, this project focuses on copper extraction, with an estimated investment exceeding 5 billion dollars. The development includes the construction of a state-of-the-art concentrator plant designed to process large volumes of copper ore with high efficiency and minimal environmental impact. The concentrator plant is a critical project component, as it enables copper separation and concentration through advanced physical and chemical processes, optimizing production and mineral quality.

The construction and operation of Quellaveco's concentrator plant present significant challenges in occupational health and safety, particularly in preventing fatigue and drowsiness among workers. The intensive and demanding nature of mining operations, combined with extended shifts and remote work conditions, increase fatigue risk, which can lead to accidents and reduced productivity. Therefore, implementing effective fatigue management strategies is critical, including continuous monitoring procedures, risk identification training, and appropriate rest programs, to ensure the safety and well-being of all involved in this ambitious project.



# Fatigue in Quellaveco

## Construction DRIVER MANAGEMENT AND RISK PREVENTION

With more than 2,500 operators divided among personnel for passenger transport, material handling, heavy equipment, trucks, water transport, fuel transport, and hundreds of other specialties, the project bore the responsibility of protecting the health of this workforce.

This project faced hundreds of challenges:

- 21x7 shift schedule
- 1,700 contractors in the first two phases, with a total of 2,500 drivers in various categories
- 800 drivers working night shifts
- Worker groups and unions demanded safety measures from the mining operation
- There was a history of fatal accidents, and project and community sensitivity was extremely high



# Fatigue in Quellaveco

## CONSTRUCTION DRIVER MANAGEMENT AND RISK PREVENTION

Despite multiple efforts by the largest contractors in the mine construction, with vendors that promised “magical technological solutions” and “digital intelligence” to prevent accidents.

CUMBRA, Quellaveco's primary contractor, partnered with Logifit to implement a process for detecting and preventing risks associated with fatigue and drowsiness.

With the leadership and vision of CUMBRA's risk prevention team, a model was designed that combined technology, security focused on fatigue-related factors, and ongoing support from **Logifit** to achieve the desired results. Focusing on overall fatigue rates, which were hovering around 40% at that time, and especially on fatigue among night-shift personnel that exceeded 55%, the mission was rapid and accurate detection with a prevention model that included various training and occupational development strategies.



**55**  
with fatigue and  
drowsiness  
issues  
(NIGHT SHIFT)

BUSINESS CASE  
Customer: CUMBRA  
STRATEGY, COURSES OF  
ACTION, RESULTS



# TECHNOLOGY WITH MINING

## SUPPORTING HEALTH AND SAFETY

CUMBRA partnered with **Logifit** as a technology partner to strengthen occupational safety culture and prevent incidents and proactively protect nearly 2,500 operators in such a complex operation.

With CUMBRA's Safety team's vision and leadership, key risks were identified and a model was designed that combined technology, security focused on fatigue-related factors, and ongoing support from **Logifit** to achieve the desired results.

CUMBRA had previous experiences with other technology and equipment vendors offering “miraculous” solutions. However, **Logifit** model combining technological development with ongoing support throughout the contract, was a differentiator, because for any modifications or improvements, **Logifit** they implement them quickly with their development team.



**2,500**  
operators

**\$5B Operation**  
Quellaveco

# A VISION OF PREVENTIVE SAFETY

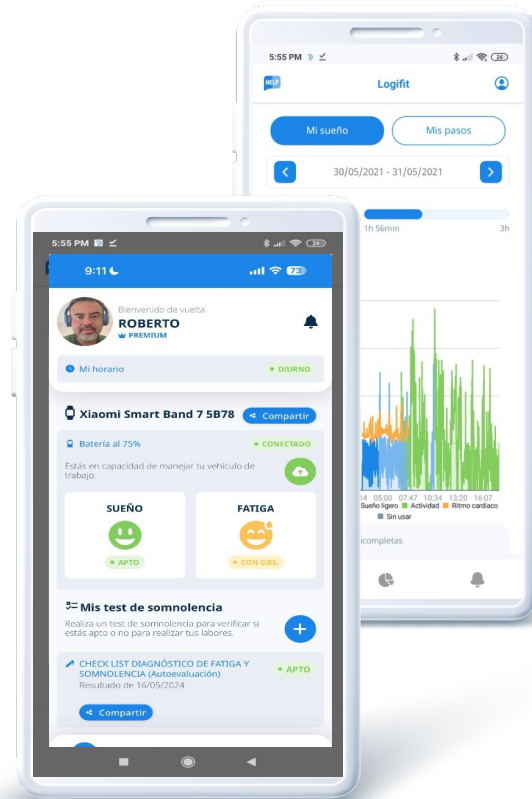
changing the paradigm and innovating

CUMBRA's vision to strengthen and improve the well-being, safety, and health of their operators through prevention, resulted in improved personnel motivation, reduced accident rates, and minimized rework levels.

The **Logifit** model integrating technology with ongoing support services has positively influenced a stronger safety culture and user-friendly controls that directly impact field personnel's health and well-being.

*“The fatigue and drowsiness management we implemented has proven to be extremely effective. We tested various systems and faced multiple limitations. However, Logifit, with its mining environment experience, provided us with the support needed to achieve significant results.”*

**CORPORATE SAFETY MANAGER, CUMBRA**





# TRANSFORMING BENEFITS INTO WELL-BEING RESULTS



**BEFORE**

**55**

with fatigue and drowsiness issues

**BENEFIT**

**+43**



**NOW**

**12**

with fatigue and drowsiness issues

*“The results achieved allowed CUMBRA to recognize the positive impact of managing fatigue and drowsiness in their operations.*

*We are confident this will translate into significant improvements in our safety and health metrics”*

**CORPORATE SAFETY MANAGER, CUMBRA**



## The Future of Digital Fatigue and Drowsiness Management

