Innovation in workplace injury prevention: forecasting injury risk

1. Workplace injuries are a huge moral and financial burden.
2. Techniques exist to prevent most workplace injuries recurring.
3. ECU research is strengthening the science of prevention by forecasting injury risk.
4. The research will result in a product to warn when risk is too high, to assist prevention.
5. WA Government, ECU and industry are supporting the research.

Approximately 4% of Australia’s GDP (i.e. $61.8 billion) is spent on the outcome of workplace injuries, and a similar percentage globally (i.e. approximately $3 trillion) (SWA, 2015; ILO, 2012).

Ironically, the immediate causes of workplace injuries are frequently well known as they are investigated thoroughly by the employer. Therefore there is tremendous knowledge of incident causation. But, responding to incidents and preventing recurrence is reactive, expensive and too late for those involved.

Generally, until an incident occurs there is little warning that something is about to happen, which leads to complacency and lack of preventative action.

Research being conducted by Dr Marcus Cattani at ECU, who has a 30 year career in industry and academia, is addressing why organisations do not prevent incidents; which is because they do not perceive there is a problem, until it is too late. Organisations need an incident warning system.

By statistically analysing thousands of incidents, over 200 risk factors have been identified, which has enabled the development of a “risk profile”. The risk profile is applied to an individual organisation’s data to diagnose their current health. When the diagnosis indicates a potential problem (i.e. unacceptable risk) the organisation can address it proactively. In effect the diagnosis provides a warning that action is required to manage risk. Subsequently, a suitable ‘treatment’ will be suggested to manage the unacceptable level of risk.

This research outcome has the potential to change the way industry manages safety, enabling a move towards proactive instead of reactive safety management. The warning system could save industry millions of dollars of costs associated with responding to incidents.

The WA Department of Mines and Petroleum (DMP) and several industrial organisations are assisting and supporting the research, and considering how it can be incorporated into their work.
WORKPLACE INJURY PREVENTION
INNOVATIVE RESEARCH TO ADDRESS A GLOBAL ISSUE

4% GDP $62 BILLION
4% GLOBAL GDP $3 TRILLION

EACH YEAR IN AUSTRALIA ~110,000 PEOPLE ARE SERIOUSLY HURT AT WORK COSTING 4% OF GDP OR $62 BILLION. GLOBALLY 317,000,000 PEOPLE WERE SERIOUSLY HURT AT WORK IN 2013

IRONICALLY MOST WORKPLACE INJURIES ARE PREVENTABLE BUT NOT PREDICTABLE. ECU RESEARCH IS DEVELOPING A WARNING SYSTEM

THE WARNING SYSTEM WILL SHOW ORGANISATIONS WHEN ACTION IS NEEDED AND WHAT THEY SHOULD DO

COMMERCIALISATION
AN AUTOMATED WEB SITE WILL BE DEVELOPED TO ANALYSE ORGANISATIONAL DATA AND PROVIDE USEFUL FEEDBACK

DATA ANALYSIS RECOMMEND

BENEFITS

ORGANISATIONS INFORMED TO PREVENT INJURIES
TRAINING SHOWS ORGANISATIONS HOW TO MANAGE

BASIC ANALYSIS IS AUTOMATED AND CONSTANTLY AVAILABLE
REDUCTION IN INJURIES INCREASES PRODUCTIVITY

COST IS A SMALL FRACTION OF THE COST OF ONE AVERAGE INJURY
THIS DISRUPTIVE TECHNOLOGY IS THE FIRST OF ITS KIND

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