



NewtonLowe Limited

ABOUT

THE TEAM

We are award-winning, global experts in construction, engineering and learning.

- A/Prof. Sidney Newton FAIB, MRICS, AAIQS
- Mr Russell Lowe MArch
- Prof. Steve Rowlinson MICE, MHKIE, FRICS

THE NEED

Many current health and safety training programs in the construction and engineering industry limit their focus to explaining compliance requirements and risk management. Better training would address more explicitly the individual attitudes and shared perceptions that broadly drive onsite health and safety behaviour. Direct personal experience is often the most powerful factor in shaping our attitudes and perceptions. There is a pressing need to incorporate authentic personal experience and multiple perspectives as an immediate context to health and safety training.

THE INNOVATION

The Situation Engine delivers managed practical experience to individuals and groups using hyper-immersive digital technologies. The learner is cast into one of many alternative situations onsite and must actively interpret and consider the possibilities for action. What is being noticed? Why? How does it make sense? What is being missed? How does this look from another perspective? How could I see and act differently?

The Situation Engine provides the very highest quality of first-person virtual experience available on a range of devices, from iPad to state-of-the-art displays such as the Oculus Rift. At any point during the dynamic activity that constitutes a situation the activity can be frozen. The user/group is still able to move freely through the frozen 3D scene, experience events from different perspectives and replay/discuss the same event over and over. A powerful analytics capability ensures all user actions are recorded and conditions are adapted dynamically to individual user performance. Competency assessment is built-in.

THE DEVELOPMENT

Commencing in 2009, a series of successful research and industry grant applications funded the development and testing of several prototype systems specific to the teaching and learning of technical competence. Early prototypes were trialled over a period of 3 years with specific student cohorts. This work resulted in several new research partnerships and subsequent developments over the past 3 years have been trialled with larger and more varied student/trainee cohorts at several partner institutions.

Based on the success of this research a commercial company was established in 2014 to develop The Situation Engine more specifically for health and safety training directly to the construction industry. With offices in Australia and Hong Kong, NewtonLowe Ltd. has undertaken a range of consultancies with industry and total development funding for The Situation Engine now exceeds AU\$2million.

THE OUTCOMES

Measuring learning outcomes in the form of workplace behavioural change requires a major undertaking over an extended period of time, particularly if the intention is to measure a single variable (such as the use of The Situation Engine) in isolation: workplace behaviour can be influenced by multifarious factors.

In measurable terms of use, The Situation Engine and related resources have exceeded 5,500 downloads and there is a growing network of academic and industry groups (currently 9) with the technical capacity and commitment to develop and extend the resources, situations and functionality particular to The Situation Engine.

In measurable terms of return on investment, it is reported that replacing powerpoint explanations with The Situation Engine virtual experiences is saving time in delivery and increasing engagement.

In measurable terms of adaptability, direct learning analytics are being used to modify and enhance the functionality of The Situation Engine incrementally.

THE BUSINESS MODEL

A contemporary business model delivers open-source software and technical capability transfer through in-house training. The Situation Engine itself is innovative, but by enabling a crowd-based approach to technical expertise development in video game production across multiple clients, the business model also seeds and propagates a ready pathway for clients to develop their own, more diverse innovations in the future.

THE INDUSTRY AGENDA

The benefits of the Situation Engine to the construction industry as a whole relate most specifically to the productivity improvements that flow from having more competent and better trained practitioners. The industry has seen a steady stream of technical improvements to construction and engineering manufacturing, techniques and procedures, but effective worker training remains a critical barrier to productivity improvement internationally.

Changing the behaviour and attitudes of practitioners to drive competency, safety and productivity is a global challenge. The Situation Engine offers a radically different approach that has genuine potential to transform the industry. The technology base is open source and future development is heavily resourced from the video game industry. An innovative business model offers an open pathway for individual construction and engineering organisations to develop and deploy the technology themselves, not only for training and assessment purposes but for a full and rich spectrum of future possibilities

CONTACTS

Please contact us for a business solution tailored to your situation.

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