

Paradigm Shift: Technology's application to Production and Safety Tracking in Mining using Commercial Tablets, Gamification, the Internet of Things

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Mobile devices and intuitive addictive interface design has already transformed our lives. We expect all our data, such as music, digital documents, photos to be available on demand on our smart devices. These devices are becoming uncontrollably intrusive by compelling many of us, by deliberate design, to continuously interact due to addictive interfaces and usually in online social spaces. This ever-present expected interconnectivity will further expand as more low-cost sensors are added to the physical world, creating new ways of interacting to improve efficiencies or user experience.

This phenomenon can be replicated in mining activities, at a similar low-cost and added addictive behavior to improve safety and productivity. Mining activities are inherently social, where we might be alone in our machines, but the entire team on the crew all try to contribute toward the goal, and with improved feedback, a social element can be added alongside continuous progression tracking, to create similar conditions as are found in addictive multiplayer games. Commercial mobile computing and the Internet of Things is far outpacing the development of technology with origins in an industrial setting, and with a price-point an order of magnitude or more less than its industrial cousin. With some hardening of these low-cost technologies, it is better to adapt these tools than to develop from an industrial origin.

This workshop will cover:

What is holding mining back from adapting these technologies? The topics covered include:

- The technology selection process
- The focus on technology and not process change
- Systems vs. platforms
- Complexity vs simplicity proportionality to utilization
- Infrastructure concepts

Anatomy of a Modern Commercial Device

- Sensors
- Communications
- Operating system,
- Programming approaches (native vs hybrid)
- Legos of modern coding: Github, D3JS, Forums

Design:

- Gamification
- User Experience
- Feedback loops

Case Studies