

# Envisioning the rehabilitation of assets through co-design and gamification

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## Introduction

As we strive for a sustainable and resilient future, repurposing assets has become a top priority. In Australia alone, we have a significant number of mineral projects in the pipeline, extensive existing operations, and over 50,000 legacy sites. Collectively, this presents a unique opportunity to be a world leader in mine rehabilitation.

Complex stakeholder landscapes, inflexible policies, aged regulatory frameworks, technical uncertainties and increasing liabilities are all barriers hindering effective transition of legacy assets. The impetus for change is further catalysed by shifting consumer preferences, workforces in flux and regional Australians questioning what the transition means for their local community.

We need innovative approaches to take a leading role in the industry and support global efforts more broadly. Co-designing an ambitious, shared vision spanning projects, operations and legacy assets with all key parties is a fundamental step to unlock and realise maximum societal, environmental, economic and reputational value. Serious play and gamification can further enhance this visioning process.

## Co-designing an ambitious, shared vision

Announcements regarding legacy assets can result in shock, denial, anxiety, confusion and anger for employees and communities generationally reliant on mining sites for their jobs and livelihood. Repurposing of these sites also results in positive change, including lowering of pollution and introduction of new technologies that in turn create social value, new skills, and long-term career pathways. To reduce change fatigue and maintain a social license to operate, mining companies need to define their goals and plans for site closure and repurposing in a way that is both clear and consistent. Our experience has shown that a well-defined vision statement is a key ingredient in bringing internal and external stakeholders along complex transition journeys, providing common language to describe the strategic intent behind decisions made for legacy sites and the workforces that support them. Design thinking activities in co-design workshops encourage collaborative and creative alignment on vision, requirements and core components of site transitions. A process of divergent and convergent ideation helps to pose and solve key questions, discuss potential solutions and consider the value that sites can deliver, both now and into the future – all

from a human-centric standpoint. The canvassing process translates vision into a set of value propositions that articulate how internal and external stakeholders will benefit from a repurposed site. Once a series of canvases is created, mining companies can phase potential transition initiatives across short-, medium- and long-term horizons according to value and impact.

## **Gamification to support decision making**

Gamification is a design approach that transforms different systems, services, and activities to resemble games (Koivisto and Hamari, 2019). Following the proliferation and adoption of gaming online and worldwide, research has shown that games help provide cognitive, emotional, social, and motivational benefits (Ryan et al., 2006; Granic et al., 2014). The mining industry is already realising the benefits of gamification, having incorporated elements of simulation and play into existing operations and processes including games that bolster project and asset management, safety education and compliance on-site.

However, more strategic opportunity exists for mining companies to extend their appropriate use of game theory to discuss site transition and closure opportunities and better imagine and anticipate the future of their legacy assets. As the research agenda of bodies like CRC TIME demonstrate, it is time for mining companies to rethink post-mine transitions, evolve their business practices and more deeply empathise with stakeholder perspectives. Testing ideas in the safety of a hypothetical, simulated game environment is crucial given the highly visible, multi-faceted and at times adversarial nature of mine closure announcements and decisions. Through our partnership with Dutch game developer Fresh Forces, we have explored game mechanics that encourage and provoke leaders to think expansively, and hypothetically, in a trusted and psychologically safe environment. By shedding their individual company role for a day, participants can step into the shoes of another internal or external stakeholder and assume a mandate that will impact and influence the future of their asset and site. The game then introduces this mix of mandates to a fresh future, complete with government policies, market conditions, community expectations, local economies, revenue streams and societal priorities.

To facilitate the accuracy and relevance of the game in a mining context, our pilot site transition game is being developed following months of interviews with thought leaders across GHD's global network to reflect a range of perspectives: mining industry, technical, environmental, legal, engineering, client, business, regulatory, governmental, digital, human, creative and cultural. At times, these disciplines directly clash and compete which complicates, confuses, and slows an organisation's decision-making ability. The game recognises and catalyses this, providing a dedicated platform and open forum for different values and views to be advocated for in real time in a fictional environment before decisions are reached. The qualitative interactions between participants of the game carry associated quantitative costs and consequences that impact the financial status and standing of the mining company. Through these interactions, players have discussed options, weighed costs, and debated priorities to reach an agreement on what happens next for the site and asset in focus. After this shared experience, the learnings, insights, and various perspectives on risks and opportunities across different stakeholders can then be re-introduced into real world business. Over the course of one day, the game simulates and expedites content, consultation and collaboration that traditionally take months for organisations to unpack. Whilst a playful process, outcomes are serious and tangible:

- Increase awareness in stakeholders' perspective on risks and opportunities;
- Generate buy-in and social license through trust;
- Boost creative leadership skillsets in empathy, deep listening, negotiation and conflict resolution; and
- Save time and cost in feasibility studies by converging faster on the options to be investigated.

Together, gamification and visioning present a fresh and inclusive way to address the complexities and challenges of mine closure and relinquishment. The inherent positivity of these processes and experiences can achieve meaningful results for workforces and organisations in flux and contribute to establishing Australia as a world leader in the mining industry.

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