

Innovation System Assessment Tool

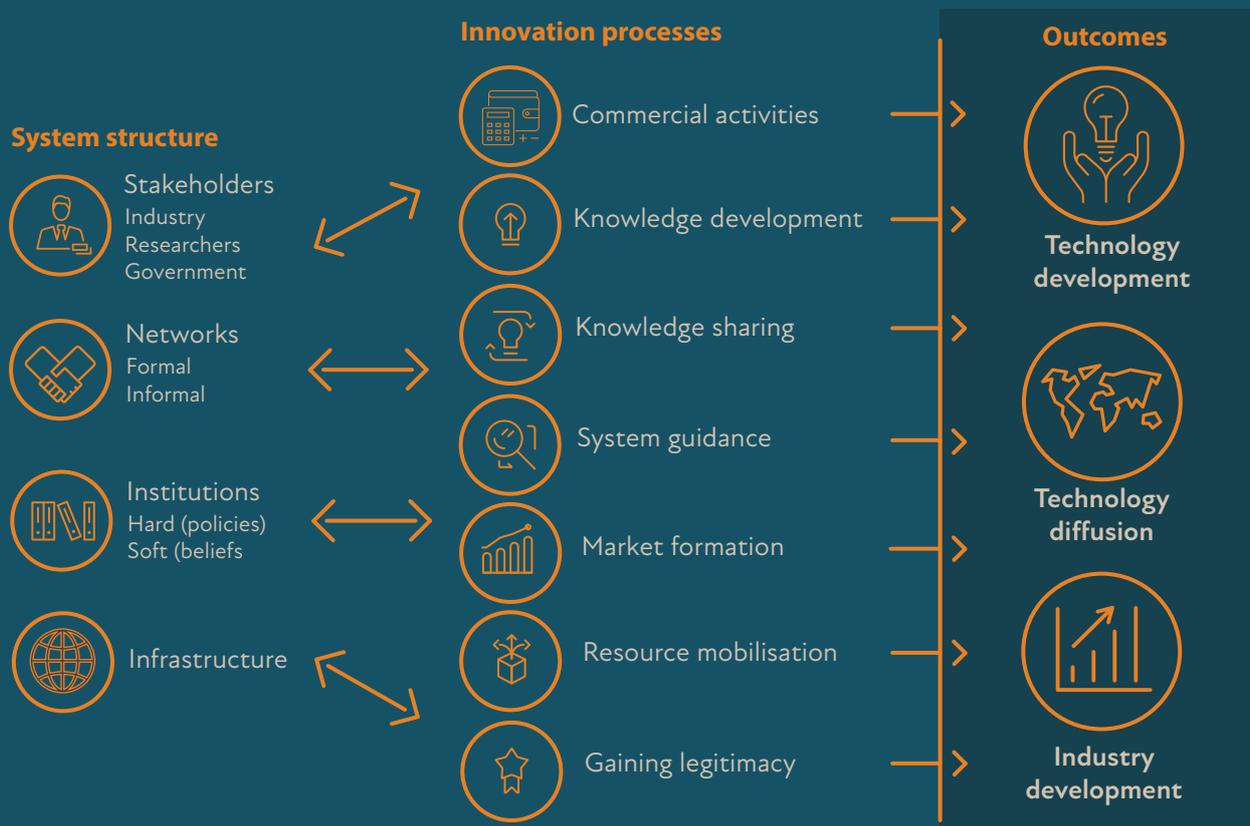
Australian METS firms are innovators – developing novel solutions to improve health, safety, operational routines, and productivity in the mining sector. The uptake of new technology, however, is sometimes slower than expected, or entirely blocked. Many factors can form barriers to successful technology development and diffusion.

Innovation and technology development does not occur in a vacuum – instead, METS firms are embedded in a complex ecosystem of stakeholders, institutions and networks. These include potential customers, competitors, researchers, investors and industry associations – as well as laws, regulations, industry norms and beliefs about technologies.

In fact, every group or field of technology is surrounded by its own ecosystem – often termed as a *technological innovation system*. For a new technology to be successful, not only a functioning structure of an innovation system matters – there is also a range of key innovation processes that need to occur in order to drive technology development and diffusion, and to overcome potential barriers to success.

The CMBI Innovation System Assessment Tool assists Australian METS firms with evaluating the technological innovation system they operate in, helps to identify bottlenecks in the ecosystem, and outlines actions METS firms can utilise to improve success in technology development and uptake.

Innovation System Map for Australian METS firms



What are the key innovation processes necessary for a functioning ecosystem?



Entrepreneurial experimentation:

A functioning innovation system requires a range of companies, organisations or research institutions to experiment with variations of a new technological development while having commercial aims.



Knowledge Development:

A range of high-quality knowledge development activities need to occur – including learning about commercial applications – for an innovation system to be functional.



Knowledge Sharing:

A functioning innovation system needs to provide the opportunity to share knowledge between various stakeholders – such as about R&D, successes and failures, and commercial applications. This includes collaborations – such as among METS firms, or between METS firms and miners.



Direction of the Search:

There needs to be some confidence, certainty and agreement into which direction technology development is heading – such as being guided by market demand, industry expectations or government initiatives.



Market Formation:

New technologies require a market for commercial success. A functional innovation system is based on the expectation that a market exists or can be formed, and that there is an explicit need for a new technological solution.



Resource Mobilisation:

Financial and human resources need to be mobilised for new technology development and uptake – from the early R&D stages to funding pilots and demonstration, and eventually to expand the market.



Gaining Legitimacy:

New technologies often face resistance to change and a lack of legitimacy. Gaining legitimacy is important and can depend on how positively or negatively a technological field is viewed, and the ease or difficulty with which the technology is expected to integrate into organisational routines.

How can the Innovation System Assessment Tool help METS firms?

The CMBI Innovation System Assessment Tool is an interactive online tool for Australian METS firms. A METS firm can use this tool to evaluate the technological innovation ecosystem in which they operate. This includes assisting firms to evaluate:

- the knowledge development and exchange processes occurring in their technological field
- the maturity of the market into which their innovation is entering
- the availability of and access to resources that are needed to support their technology development and diffusion activities
- potential social acceptance issues, and difficulty with integration into existing routines and structures

After completing the questions in the online tool, a METS firm will be provided with an outcome report summarising the current state of the ecosystem surrounding their technology across seven dimensions and pointing to potential actions METS firms can undertake to influence technology development and diffusion success.

How to use the tool?

Go to our website, learn more about Australian METS innovation ecosystems, and complete the Innovation System Assessment Tool. Our website also presents a range of real-world examples of Australian METS firms who have successfully managed innovation system dynamics and have overcome barriers to technology uptake.

Find out more:

<https://research.qut.edu.au/cmbi/>

