

# MANAGING COMPLEX PROJECTS WITH EXPERTISE IN RESEARCH INTEGRATION AND IMPLEMENTATION

Written by:

Prof Gabriele Bammer,  
Professor of Integration and Implementation Sciences,  
Australian National University

Prof Lynn Crawford  
Professor,  
John Grill Institute for Project Leadership, The University of Sydney

**A**pplication of project management has evolved significantly since its initial development as a discipline to address the challenges of engineering, construction, defence and aerospace projects in the mid 20th century. It has been applied to an increasing range of challenges and the challenges have become more complex. Environmental, technological and social changes have increased the breadth of disciplines that are required to understand and deliver projects. For instance, a mining project is no longer primarily an engineering challenge. It now also requires deep specialist expertise in environmental and social sciences and cultural issues. Projects that might once have been considered relatively straightforward, such as warehouses and distribution centres are no longer primarily construction projects. They now involve extensive technology including robots and artificial intelligence, connections with global supply chains and impacts on communities. Projects to address the challenges of pandemics and climate change require even greater interdisciplinarity including inputs from research.

Project managers recognise that endeavours have become more complex and their interdisciplinary and integrative expertise, and ability to plan in the present to achieve results in the future is in demand to address significant global challenges. Yet few leaders of these complex projects will be aware of an emerging field of interdisciplinary expertise in research integration and implementation that offers rich resources to assist them in addressing increasingly complex interdisciplinary and transdisciplinary projects.

What is expertise in research integration and implementation? What is its role in tackling complex projects, especially those dimensions that define complexity? In brief, such expertise includes the ability to:

- identify relevant disciplinary and stakeholder inputs
- effectively integrate them for a more comprehensive understanding of the problem
- support more effective actions to ameliorate the problem.