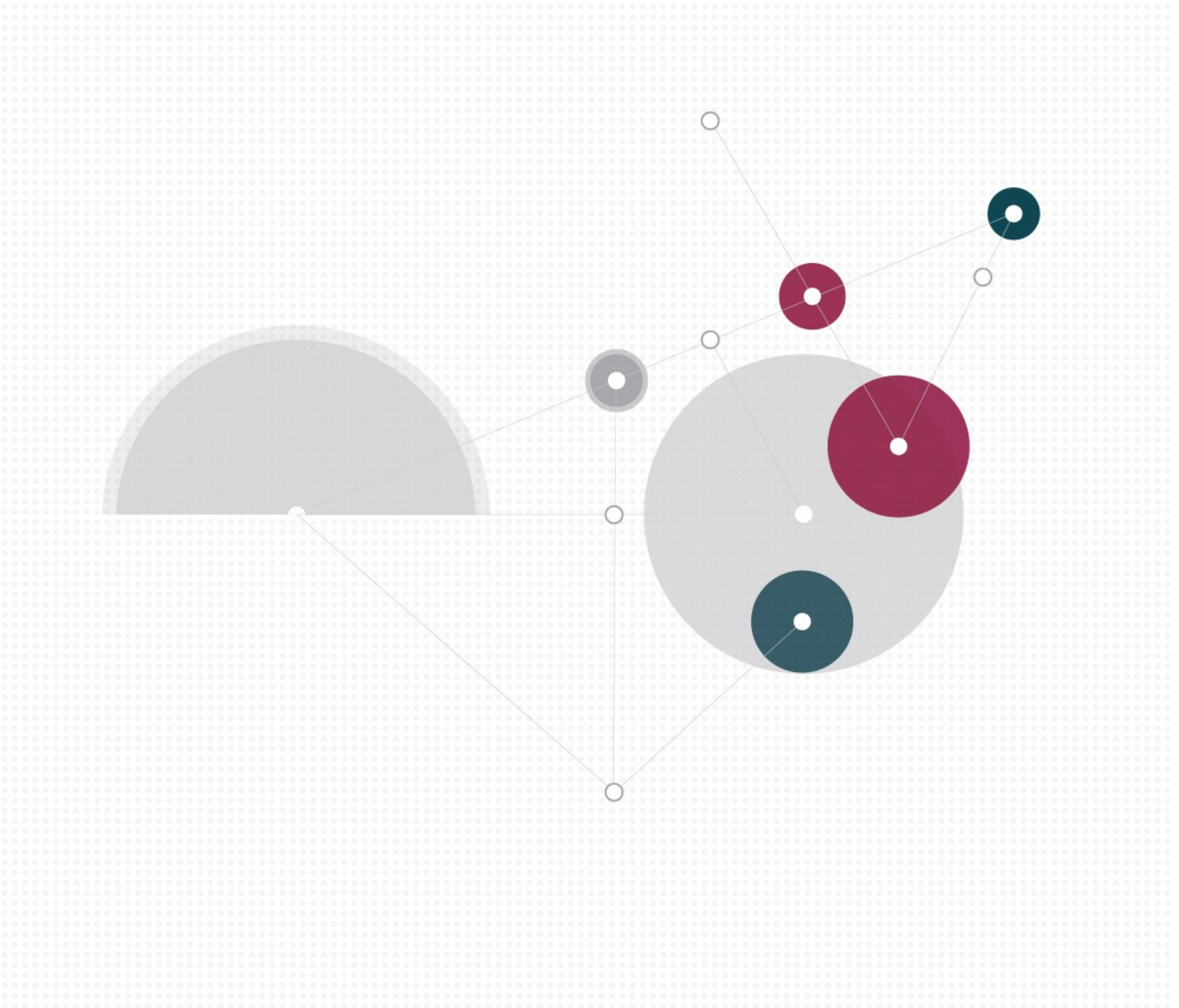


Professional Disciplines

Engineering and Logistics



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Why consider engineering a project?

The basic function of management is identified as the construction, maintenance and improvement of an administrative system which coordinated and transformed human and material resources into productive services. Engineering considers both the business and the technical needs of all customers with the goal of providing a quality product that meets the user needs. It also provides the assurance that normal operations, including parts failures, will not provide a hazard for the user or anyone else in the community.

Engineers apply established principles drawn from mathematics and science in order to develop economical solutions to technical problems. The work of engineers is the link between perceived social needs and commercial applications. Systems Engineering is an interdisciplinary process that ensures that the customer's needs are satisfied throughout a system's entire life cycle.

The engineer is responsible for making sure that all these tasks are performed in a concurrent engineering environment.

Why use Engineering Managers?

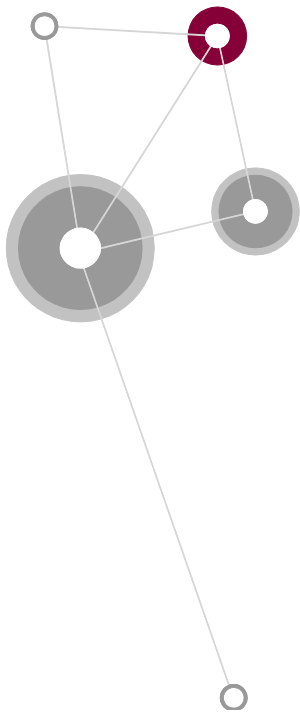
Professional engineers are required to take responsibility for engineering projects and programs in the most far-reaching sense. This includes the reliable functioning of all materials and technologies used; their integration to form a complete and selfconsistent system; and all interactions between the technical system and the environment in which it functions. The latter includes understanding the requirements of clients and of society as a whole; working to optimise social, environmental and economic outcomes over the life time of the product or program, interacting effectively with the other disciplines, professions and personnel involved; and ensuring that the engineering contribution is properly integrated into the totality of the undertaking.

Professional engineers are responsible for interpreting technological possibilities to society, business and government; and for ensuring as far as possible that policy decisions are properly informed by such possibilities and consequences, and that costs, risks and limitations are properly understood as the desirable outcomes.

Professional engineers have a particular responsibility for ensuring that all aspects of a project are soundly based in theory and fundamental principle, and for understanding clearly how new developments relate to established practice and experience and to other disciplines with which they may interact. One hallmark of a professional engineer is the capacity to break new ground in an informed and responsible way.

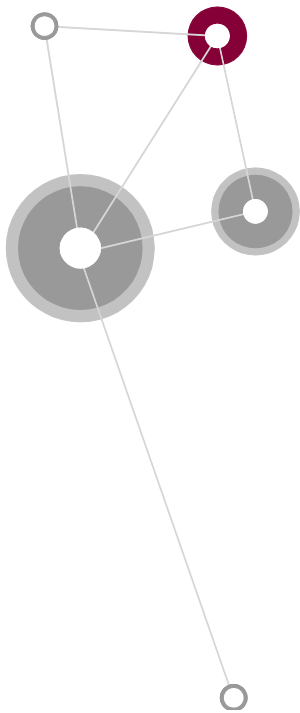
Logistics Management

Following the successful transition of a capability into service, effective logistics management is necessary to ensure it continues to function to the required standard and continues to meet your business needs. A generally accepted rule of thumb is that only 30% of the through-life cost for a system is spent in acquisition. The remaining 70% is therefore consumed in sustainment (Through Life Support). Providence applies industry better practices for Integrated Logistic Support to the sustainment and management of a procured product or service.



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Integrated Logistic Support

Major capabilities require an integrated, through-life support and management regime which is integrated into the earliest stages of the procurement activity. Providence applies the concept of Integrated Logistic Support (ILS) to the ongoing management of the capability sustainment functions. The Australian Department of Defence, through its Procurement Agency, the Defence Materiel Organisation (DMO), defines ILS as “a total support concept”. ILS, through early engagement in the procurement lifecycle, ensures that the capability or system can be economically supported through its time in service. Providence addresses all the elements of ILS during the conduct of procurement activities to ensure that the system, once delivered into service is both economically and functionally sustainable. These elements include, but are not limited to:

- maintenance planning;
- supply support;
- technical data and details;
- personnel requirements;
- training and training support needs;
- support, development and through life testing facilities and equipment;
- packaging, handling, storage and transportation; and
- computing support.

Risk Analysis

Engineers are conservative in nature and traditionally have a culture guided by standards, codes of practice and specifications to ensure that what we create is safe as well as functional. There is a safety philosophy which relies on probabilities, severance, reliability and consequence. Decisions always consider engineering hazards and the likelihood of death as a consequence. Technological risk is also considered important to an engineer, factors such as catastrophe potential, controllability and threat to future generations is important. Therefore engineering risk decisions always take into account both the technical and social construction of risk.

The Providence Approach

The engineering manager can be utilised as the person responsible for the technical input into a team whether the focus is Capability Development or any other systems engineering process. The engineer offers a technical view, ensuring there is a sound baseline in theory and fundamental principle to a project. The Providence engineer can be a part of any team involved in capability development, sustainment or business cases and analysis, but is not restricted to any particular field.

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The engineer accommodates the broad objectives such as increased market competitiveness and cost effectiveness. The engineer is to achieve these objectives and to use selective technological expertise as a part of the team. Engineers like managers must have an in depth appreciation of an enterprise's market competitiveness and how it is enhanced. Engineers also have all constraints of any other manager such as marketing, finance, people and personal management. This input into a team environment is vital to a successful project and delivery of the desired outcomes.

