

What is Rapid Manufacturing?

Rapid Manufacturing (RM) is the name given to the production of 'series' or 'end-use' component parts made using 'Additive Layer Manufacturing' (ALM) processes.

Traditionally, ALM processes were used to manufacture prototypes and casting patterns. However, recent advances in ALM technologies and materials now allow us to manufacture parts for a variety of production applications, in polymers, metals and ceramics.

In recent years, there has been an almost exponential increase in the number of companies using RM across a broad range of industrial sectors. Examples of RM applications include aerospace and automotive components, packaging, medical implants, hearing aid shells and surgical guides, and consumer products such as light shades, furniture and even football boots.

Many business benefits can be attributed to the adoption of RM. These include the reduction or elimination of fixed assets such as mould tooling, resulting in reduced capital investment. RM can reduce or eliminate many stages of the traditional supply chain, reducing lead times, inventory and supply chain costs. RM also allows for the manufacture of topologically optimized components, producing parts that are 'manufactured-for-design', as opposed to 'designed-for-manufacture'. Because RM parts are made using additive manufacturing technologies, as opposed to subtractive machining or formative moulding processes, little if any waste material is generated. Moreover, additive manufacturing allows for almost unlimited geometric complexity, providing new design freedoms and significant parts consolidation. Additive manufacturing processes are lean yet agile, allowing the manufacture of low volume batches of component parts with little manual intervention.

RM Implementation Strategies

SUPPORTING BUSINESSES

MCP Selective Laser Melting

At Econolyst we understand that adopting a new manufacturing technology requires careful planning and preparation. That's why we use a simple 6-stage methodology to assist companies to implement Rapid Manufacturing into their current supply chains or in the development of new business models.

Starting by identifying the unique business benefits of RM to your company, we then look to identify suitable RM materials and Additive Layer Manufacturing (ALM) processes capable of fulfilling your production requirements. Having assessed the strengths and weakness of different ALM processes, we then help our clients to understand the economic issues surround RM, before closing the 'loop' by assessing the true cost benefits of RM throughout the entire supply chain.



If you are interested in discussing how Econolyst could help your company to implement Rapid Manufacturing, please complete and return the reply slip, or visit our website