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2011 GLOBAL SERVICES COMPRENDIUM
An increasingly competitive market for engineering services has made outsourcing indispensable to the industry, more so following the downturn.

Runa Mookerjee, Analyst, ValueNotes Sourcing Practice
Engineering services outsourcing is likely to skyrocket from $15B in 2010 to around $200b by 2020. In a recent ValueNotes survey we found that traditional design and manufacturing services make up the largest portion of outsourced engineering services. An increasingly competitive market for engineering services has made outsourcing indispensable to the industry, more so following the recent global economic downturn. An increase demand for engineering services is leading to a corresponding increase for outsourced services. Current spending on engineering services of $750B is expected to increase to $1.1T by 2020. Industry sources expect India to play a large part in the outsourced engineering services sector.

Growth Drivers Include
Changing demographics among western countries - as a ‘dominant engineering service employed’ baby boomer generation reaches retirement, the availability of skilled engineering workforce is on the decline in the west. Outsourcing helps clients concentrate on core services – the availability of specialised talent that can deliver regular processes helps the firm to focus on its core competencies or development of newer technologies. During the 2008-2009 global financial recession, several engineering manufacturing companies had to cut back on their costs and downsize in terms of operations, processes and employees. This benefited the outsourcing industry as more was outsourced, and the trend is expected to continue through 2020. Certain regions which are also among the favoured outsourcing destinations are more popular for engineering service buyers. Besides, led by rapid industrial growth some of these Asian countries form the client base as well as provide outsourcing services.

Going Beyond Traditional Outsourcing
Our survey findings indicated that outsourced engineering services are popular in aerospace manufacturing, industrial and automotive domains. A decade ago, the
nature of engineering work being outsourced involved lower end services like creating digital models and drawings and sending these back to the buyer who then incorporated these in his designs. However, engineering work currently undertaken involves a substantial portion of the actual design activity. This has come as a result of buyers realising that to have a competitive edge, they need to realise the full value of outsourcing rather than just cost savings. Subsequently, service providers have evolved into providers of specialised services with a better understanding of their customer product lines. They have also had to build new competencies, such as knowledge based engineering, life cycle management, technical publication - to adapt to changing customer needs that allow them to support complete product development.

Some companies are successfully turning to technology to further their engineering services needs, effectively using Web 2.0 technologies to an outsourcing advantage. These companies take the help of means such as ‘open innovation’ and crowd sourcing - i.e. outsourcing of tasks which are traditionally performed by an employee or contractor to a large (undefined) group, community (a crowd), through an ‘open and usually interactive platform’. The tasks outsourced could be as simple as generating competitive or cost cutting ideas or as complex as the designing of an entire product range or a completely new product. In a multi polar global space the knowledge process outsourcing industry has grown beyond conventional outsourcing. Apart from using third party services for regular engineering services, increasingly, engineering service providers are turning to outsourced innovation to contribute to the ‘product design’ itself.

Let us take a look at some examples that showcase just this –

**Toyota: Outsourced Innovation**

The Japanese auto maker’s ‘value innovation’ strategy involves its suppliers beyond cost cuts and lower prices for supplies – engaging them in the design process for its high selling Prius model. Toyota’s is a case where open innovation and crowd sourcing merge- adopting a best practice method that invites all the best minds (albeit at large!) to participate in its collective effort to cut back costs and come up with a better design for its product.

**Boeing: Testing the Model**

Boeing also made optimal use of open innovation technologies to stress test the hydraulics of the 787 Dreamliner, combining the inputs of companies in the US, UK,
Japan, China. Boeing allowed over a 1,00,000 entries in its World Design Team, an Internet based global forum encouraging participation and feedback from various stakeholder groups during final states of development. Their ideas and inputs were then collected through online surveys, in turn providing updates as the design of the plane’s exterior and interior evolved. This novel innovation method allowed Boeing to build a prototype using inputs from several thousand engineers and run tests as the design emerged.

Though the use of open source technologies is a debatable issue, its use in generating ideas for products is more of a win-win situation for engineering firms. Even if the design comes out eventually flawed, the firm then has a prototype which is a test of ‘what can go wrong’. On broader level, it is clear that outsourcing engineering services is here to stay and go even further in the coming years.

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