

Redpoint Engineering in the News

## An Outsourcing Strategy for Product Development

One of the things that has made the American economy as great as it is has been its ability and willingness to continually redefine itself, and by so doing, maintain its competitive edge in the larger world economy. As an example, consider the changing role of mechanical engineering in American companies today. First of all, let me clarify what is meant by 'mechanical engineering.' For most companies, the mechanical engineering job really is, "the physical aspects of product design," and that is the working definition used herein.

Getting back to the role issue, what both large and small companies are increasingly choosing to do is to outsource mechanical engineering. That is, to have the physical design of their products executed by outside mechanical engineering design firms. In some cases the client company retains a nucleus of in-house mechanical engineers to perform high-level design functions and to manage the outsource resources. In other cases, principally involving smaller companies and start-ups, they outsource the mechanical engineering function in toto.

Perhaps the best reason for outsourcing mechanical engineering is that it solves a problem that many entrepreneurs don't even realize that they have. Many start-up companies enter the marketplace with products that are not well developed for commercial purposes. Many promising technologies and innovations have failed because the realization of the product was faulty. In many cases the entrepreneur, with limited design skills, has tried to execute the product development himself, or tried to supplement his core technology with a low cost temp having some CAD skills. The result too often is a product that is costly and difficult to manufacture, or which experiences rejection in the marketplace. Having a capable mechanical engineering design team make the transition from idea to commercial product is often the key to success for a start-up.

Another reason for outsourcing is that it's often more economical to utilize contractors than in-house employees. The costs of hiring (and laying off), of providing benefits, and of paying payroll taxes, to name a few, are greatly reduced or eliminated by outsourcing. And the contractor is only paid for productive work, whereas the in-house employee is paid full time, all the time. Of course, there are limits to which functions it logically makes sense to outsource. A telecommunications company wouldn't want to outsource their systems engineering, for example. But mechanical engineering is a logical candidate for such a strategy in that industry.

The telecommunications industry and the nature of telecommunications products today reveals another reason for outsourcing mechanical engineering. In the past upgrading telecommunications systems either at the infrastructure level or subscriber level almost always involved re-designing the hardware. Today it is common to have software definable products based on a few hardware platforms. So the need for mechanical engineering in that industry, while ever present, now tends to be more sporadic. Relatively large design projects to create new platforms may be followed by protracted periods of time in which the need for mechanical engineering staff is much reduced. Another way to say it is that, due to the changes in technology, the peaks tend to be higher and shorter and the valleys tend to be lower and longer. Outsource mechanical engineering firms are the perfect response to that phenomenon in that they provide the industry with a resource pool that can be shared among many companies. When one company is experiencing a peak, and other companies are experiencing valleys, the outsource firm can provide the needed resources. The net number of mechanical engineers

required to serve a geographic area is then less, and there is less waste from an industry perspective.

A primary rationale for small companies and start-ups to outsource mechanical engineering is to obtain an experienced and varied resource pool that would otherwise be unaffordable for them. In typical product development situations mechanical engineering requires diverse skills and experiences. Included in that diversity are design skills in sheet metal, castings, injection molded plastics, interconnection technologies, thermal analysis, structural analysis, industrial design, environmental testing, and fastening and joining. A small company cannot afford specialists in all those areas, but they can have access to all those areas of expertise by contracting with outsource mechanical engineering firms who spread those resources over a large client base. Similarly, the cost of purchasing and maintaining a suite of mechanical CAD systems is both expensive and likely to be idle much of the time in small companies, resulting in erosion of both dollars and engineering skills.

One example of an outsource mechanical engineering firm in the San Diego area is Redpoint Engineering, LLC ([www.red-pt.com](http://www.red-pt.com)). Redpoint Engineering is a young company of experienced mechanical engineers whose mission it is to help their clients develop successful products. Working with their own CAD systems, and utilizing a team approach to solve design problems, Redpoint Engineering provides their clients with a highly capable mechanical design team when they need it and only when they need it. They provide a resource that is both highly capable and highly affordable. If the Redpoint people are right in their view of the market and its needs, they have created not only a valid business model, but more significantly, they are the wave of the future in mechanical engineering, especially so for smaller and start-up companies.

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#### **About the Author**

Larry Gach is Managing Member for Redpoint Engineering, LLC. He has Bachelors and Masters degrees in mechanical engineering from Cornell University and an MBA from Fairleigh Dickinson University. His mechanical engineering experience includes a variety of wireless telecommunications products and military radar and sonar equipment. Larry can be reached at <mailto:larry@red-pt.com>.

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