

The new trends in service delivery

Business pressures are forcing consulting engineers to rethink service delivery. Here's a look at some of the trends sending ripples through the industry.

by Tom Knight

Delivery models for engineering projects are changing. Market pressures to fast-track design and construction, and the increasing drive for market leadership, are influencing the break from traditional delivery models. Design/build models, outsourcing and strategic alliances are becoming more common throughout the consulting engineering industry, as their successes become documented.

Because these new models present a departure from the traditional mindset, engineers must gain experience and develop a strong understanding of them. Doing so also demands that they develop the skills that go hand-in-hand with these models. Although technical skills are still at the forefront, financial, human relations and negotiating skills are vital to success and represent a critical change from the way projects have traditionally been handled.

By applying and marketing these skills in preliminary discussions with clients, engineers can identify opportunities to break from the traditional approach and broaden the scope of projects. And in doing so, they can secure the maximum amount of profit for their companies, while providing the most innovative solution for the client.

Some engineering firms, such as UMA, have moved forward in adopting these models and thus created progressive working environments for their employees. Following is a closer examination of each of these three delivery models and some examples of their implementation involving UMA.



Increasingly, public-private sector partnerships and design/build models are being used to develop highways and other new infrastructure. Outsourcing and strategic alliances are also becoming common delivery models for engineering projects. To adapt, consultants need to develop a new mindset about how they approach business opportunities. Photo: Mehdi Zanganeh, P.Eng., UMA

Welcome to the fast track

Traditionally, transportation projects such as highways and bridges have been done by the public sector. Public-sector clients generally want construction to be done according to tried-and-true methods, and although speed of completion is a factor, it is not the most important one. What is very important to public-sector clients is that the ongoing maintenance costs of these projects be minimized, so design and construction must be accomplished in a way that minimizes these costs.

However, we are increasingly seeing public-private sector partnerships and design/build models used to developed

new infrastructure, such as the 407 Express Toll Road, which follows the northern edge of the Greater Toronto Area. UMA designed 33 bridges for the east and west extensions of this highway for the private-sector contractor, and the private-sector involvement meant many differences from working for the public sector.

For one, the project was fast-tracked, meaning there was pressure to produce designs quickly, while ensuring that structures could be built to meet schedule, quality and budget requirements. Secondly, the client encouraged UMA to

use innovative designs, while public-sector clients tend to prefer ideas that are more standardized. The contract also included penalties for missed deadlines. In part, this was because the client planned to gain revenue from the use of the highway—so every day of construction meant another day of foregone toll revenue.

Cutting business to the core

Outsourcing has typically been a cyclical trend that reverses every five to 10 years: Companies bring certain functions back in-house, only to turn around and outsource them again several years later. However, in the engineering profession, the trend toward outsourcing of engineering skills appears to be an effective business decision unlikely to be reversed in the near future. The key factor is that outsourcing often proves to be a win-win solution.

Market leadership continues to be the ultimate goal for most large companies. Achieving it dictates that firms must focus on their core business. Outsourcing non-core functions to experts is an effective way of getting things done better, faster and cheaper.

CN Rail recently decided to emphasize its main focus of freight transportation, and considered divesting itself of any operations outside of this core. Accordingly, it looked for an alternative way to provide engineering and other technical services by outsourcing work normally carried out by its engineering department. Staff were normally faced with significant downtime when demand was low, and it was difficult to move specialists around the country to match requirements.

When CN looked for a firm that could provide the engineering services it needed on an outsourced basis, it chose UMA—partly because of the firm's geographic presence across Canada, which mirrors CN's organization. Because CN's engineering service responsibilities were transferred to UMA, CN engineering staff with relevant skills were provided the opportunity of continued employment with UMA. This enabled UMA to rapidly incorporate CN's knowledge and practices into its services, provide a smooth transition to this new working arrangement, and realize some savings on training in specialized skill areas.

Despite the positive elements of outsourcing, it demands a high level of

human relations expertise. This means that engineering firms can expect to be presented with demands that aren't associated with traditional project principles.

In the CN case particularly, UMA found that hiring many staff from the same company at once requires serious attention to business culture differences. Those engineers who were transferred to UMA were expected to adapt to a new work environment and a different business culture; managers were challenged to keep good morale among employees. Maintaining a strong client relationship becomes paramount for the firm providing the outsourced services.

Finding a partner

The need to be more focused on core business and the desire for market leadership have also prompted engineering firms to pursue strategic alliances with companies that have complementary skills. Strategic alliances have enabled UMA to bid for projects with a broader scope than it could normally manage.

For example, when discussions about the Lester B. Pearson International Airport Terminal Development Project began, UMA was eager to seize the opportunity to work on the \$4.5-billion project. Highly complex, the project was to be handled in phases over a 10-year period on the same site as the existing facility, with no interruptions to the airport's existing operations.

Although UMA had many of the skills required for the project, the firm still lacked experience in projects of this type and magnitude. But jobs of this size occur only once or twice in a career, and few (if any) engineering firms in Canada had the experience to tackle it on their own.

So forming an alliance with an American firm was the best strategy to win the business. With an enormous marketplace that is more international in scope, American consulting firms have the experience required for large and complex projects.

UMA harnessed this experience by partnering with the company Holmes & Narver to successfully pitch for the business. The two firm's skill sets were complementary: Holmes & Narver had experience working on the expansion of a San Francisco airport, and UMA had the skills and local knowledge required.

Do strategic alliances always work? Their success depends in large part on the

chemistry between the partners. Establishing the ground rules early in the relationship (including the commercial terms by which the partners will conduct themselves) and capturing these in a joint venture agreement are key factors.

Although each project is different, certain principles are consistent with success. When searching for a strategic alliance partner, the most important criteria should be that the two companies bring different skills to the table. Although the skills should be complementary, there should be little overlap. Second, the two companies should have common values and cultures. Senior management and all members of the alliance team will have to work closely together, and common business values will be essential to the project's success. And last, the joint venture agreement should be drafted in a manner that helps ensure that by achieving project success, the partners achieve their objectives by gaining project experience for both the firm and individual employees.

Using a professional facilitator to emphasize the commitment to these principles is an effective way of developing an agreement that benefits both parties. Sessions can be arranged as needed to address any bumps along the road.

Adapting to change

Adopting new project delivery models successfully takes time and commitment to change. They represent a permanent departure from how engineering firms have approached business opportunities in the past.

However, these changes also represent countless opportunities and the ability to build a successful career in a changing industry. Design/build models, outsourcing and strategic alliances enable firms to engage in long-term projects—this translates into long-term client relationships, which need to be nurtured. Although technical skills are still the key factor, human relations skills have become essential.

To build successful careers, consulting engineers must use these creative models and others to thrive in a fast-paced and increasingly complex business environment. ♦

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