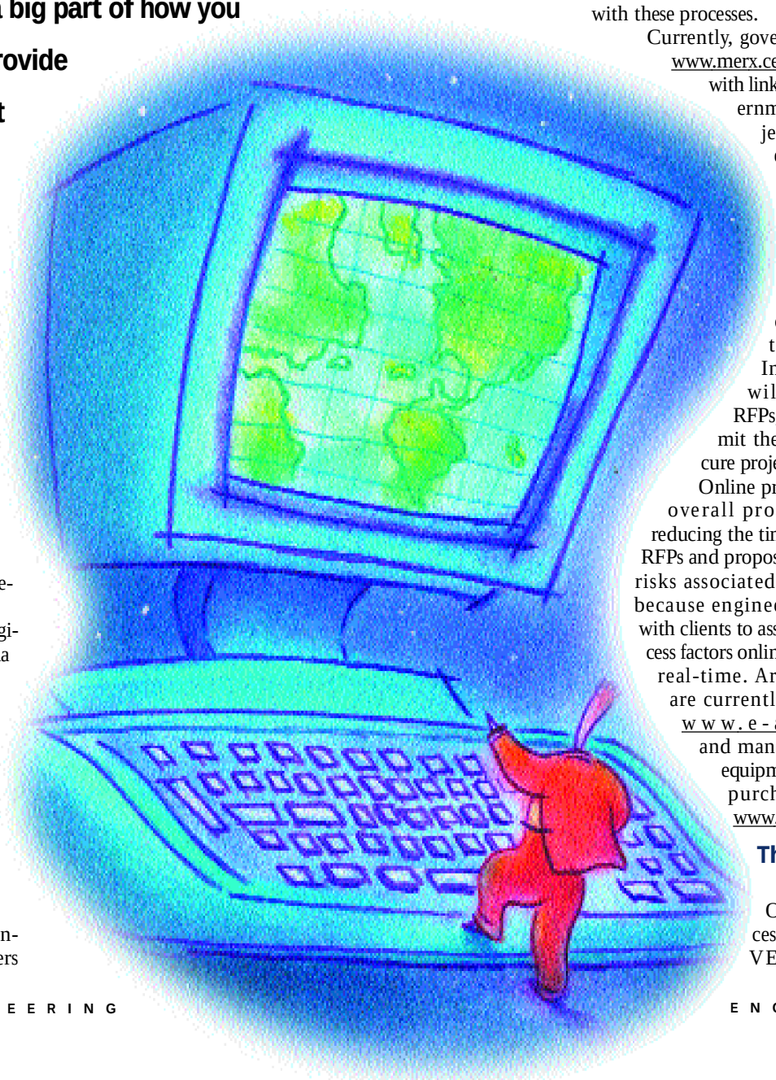
Marketing engineering services

The "virtual engineers" model

by R. Anthony Warner, P.Eng.

If the Internet and e-business strategies are not a big part of how you do business yet, they probably should be. They provide venues for engineers to find new ideas, check out the competition, network, promote companies and even bid on projects. Here's how you can use Internet-based technologies to better market and deliver your services.



The "virtual engineers" (VE) model was developed to help engineers market and deliver engineering services cost-effectively in the Information Age and 21st century. Based on current business and employment models, it's aimed at revolutionizing the marketing and delivery of engineering services by enhancing the returns to professional engineers, while reducing the cost of professional engineering services to industry. Any engineer who studied engineering with the objectives of consulting, specializing, and having economic security, and personal and economic freedom will find this model useful.

As Internet-based technologies become the basis of our community, engineers have to reengineer their business models, marketing skills and media in order to sell their services effectively. The VE model serves large firms, individuals, industry, business and academic sectors, by focusing on reducing overhead costs that reduce earnings through the use of Internet technologies. It requires a shift from the traditional low-tech, high-touch marketing approach, to a high-tech, low-touch approach similar to most new marketing models. It involves building superior relationships with the right customers. To use the model, engineers will need to get up to speed on how to use Internet technologies in their businesses.

How does it work?

Under the VE model, engineering firms and engineering departments convert themselves into "virtual companies," and both employee engineers and engineers in independent practice become "virtual engineers." Virtual companies are companies that outsource their engineering services to independent contractor engineers or virtual engineers. Many Canadian companies have already outsourced their engineering departments to engineering firms and, to a smaller extent, use sole practitioner engineers for specialized services. In addition, many Canadian companies and some Ontario government departments have converted some of their employed engineers into independent contractors, allowing them to provide services to other companies.

These business models are being implemented so that engineers, their employers and clients benefit from the process. The VE model is aimed at shaping the future by creating a business model in which all engineers are sole practitioners, who use Internet technologies extensively to market and deliver their services. This means that they have to reengineer their business processes by converting to Web-based marketing, and streamlining their project procurement and delivery process to an e-business environment. The e-business environment minimizes the costs and some of the risks associated with these processes.

Currently, government websites like www.merx.cebra.com (a federal site with links to the provincial government), list public projects up for tender and enable engineering firms to locate suitable request for proposals (RFPs) online. Increasingly in the future, engineers will seek out projects and conduct their work through e-business Internet portals. They will not only procure RFPs, but they will also submit their proposals and procure projects at the portal.

Online procurement minimizes overall procurement costs by reducing the time required to prepare RFPs and proposals. It also reduces the risks associated with procurement, because engineers are able to work with clients to assess their bids and success factors online—sometimes even in real-time. Architectural services are currently being procured at www.e-architect.com, and manufacturing parts and equipment are currently being purchased at portals like www.suppliermarket.com.

The new wave in marketing

One of the critical success factors in using the VE model is to have strategic marketing focused on your areas of expertise and specialization. Specifically, you should target areas where your procurement costs are low, due to short proposal preparation time, and your project delivery process can be maximized (i.e., easily reproducible).

Traditional engineering marketing activities include publishing newsletters, writing articles/papers, doing market research, advertising in trade journals and networking. The VE model does not change these activities, but rather, changes the medium in which they are executed, by taking the use of websites and the Internet several steps further.

For example, newsletters are converted to news releases at websites, via email or on a news service. Similarly, articles and papers are posted on topic specific "portals" on the Web. Market research and technical research are done using online resources at topic specific portals. Networking is done by participating in online discussions, news and chat groups. In these groups, engineers find ideas, meet vendors, check out the competition and network in a virtual world.

The VE model also enables engineers to leverage online partners, clients and suppliers. In the virtual world, an article or other information piece can be emailed to your email list and, if leveraged properly, can be forwarded in a matter of minutes to most of the contacts of those on your email list. This broadcast feature is critical to marketing success, but should be limited to only valuable, useful information. When used properly, an engineer can reach thousands of qualified prospective clients with one email.

This type of leveraged email distribution is currently done through partnering agreements. But in the digital future, all members of an online community will be involved in these types of activities.

Engineering Internet portals

Unlike typical websites that are owned by, and used to promote, specific organizations, Internet "portals" exist to promote industry or service sectors, such as business.com or loans.com. In marketing terms, they offer "professional branding" for professionals who wish to market and sell their products and services to a specific community.

The VE model involves advertising and marketing on an engineering specific Internet portal like www.e-Engineer.com, where advertising and marketing are dynamic. For example, newsletters are converted to news releases at websites, via email or on a news service; articles and papers are posted; market research and technical research are done using online resources; trade show participation is done by participating in online discussions, news and chat groups. At Internet portals engineers find ideas, meet vendors, check out the competition and network in a virtual world.

Use of engineering portals is an efficient process to move engineering business on to the Internet quickly. An effective portal should provide for:

- marketing and solicitation via the Internet;
- submissions of requests for proposals, proposals and statements of qualifications;
- issuing and receiving purchase orders;

Fast facts on self-employed Ontario engineers

Percentage of self-employed PEO members		Type of work		Median total cash compensation	
1998	7.9%	Consulting	48%	Self-employed members	$87,550
1988	4.5%	Entirely engineering	43%	Employee members	$72,875
		Non-engineering	14%		

Note: Statistics are from PEO's 1998 Report on Engineers' Salaries, Survey of Members.

- issuing invoices and receiving payment;
- submissions of project reports and drawings delivery; and
- a knowledge database for engineers and their clients.

Use of Internet portals can enable engineers to reduce substantially the cost of these activities. This approach enables us to reduce engineering fees by stripping off the inefficient overhead structure of the past, while increasing profitability.

The Virtual Engineers Collective has demonstrated this by transferring higher income to its member-engineers, while still making a significant profit. Established in 1997, Virtual Engineers has used Internet technology to unite several self-employed engineers to form a full-service engineering firm. The company has significantly increased the revenues of self-employed engineers, reduced the cost of engineering services to corporate and government clients and made significant returns on its investment. The VE Collective has provided work and services for over 20 engineers.

It's clear that there is no future without the Internet. The VE model helps engineers streamline their business operations, improve client services, win proposals and deliver effective projects.

Although the demand for engineering skills has been growing steadily, engineers have been lagging behind other professions in the use of the latest technologies to promote our profession and services. Many of the other major professions, including doctors and lawyers, have already started using Internet portals like doctors.com in the United States. The Internet has evolved so that, now, the easiest and least expensive way to influence key decision makers and build public support is by soliciting and posting information on the Web.

Maximizing fees

Currently Ontario's 63,000 professional engineers earn an annual total of approximately $4 billion. Using a 3:1 billing ratio, this is equivalent to $12 billion in engineering fees or approximately $200,000 in billings per engineer. This represents the potential engineering fees in the current market. Although corporate Ontario is prepared to spend $12 billion on engineering services, it is able to reduce this expenditure by employing engineers as salaried employees, keeping the difference as savings in exchange for taking on the risks for potential mistakes. On the other hand, employed engineers transfer profits to their employers in exchange for job security, thereby reducing potential earnings.

A simplified model of how the VE model could benefit engineers is as follows. Let's say the model was applied throughout the Ontario engineering profession, and all engineers became virtual engineers. Ontario engineers' $4 billion in salaries would be converted to $12 billion in engineering fees, $8 billion of which would be actual value added and $4 billion of which would go to overhead and the bottom line. The VE model would use technology to cut an additional $2 billion from overhead costs and the bottom line, efficiently transferring $6 billion to engineers. The virtual corporation would receive $3 billion, and clients would save $1 billion. If managed properly, the virtual corporation could increase profits and distribute more money to individual engineers, without reducing quality. ◆

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Becoming a virtual engineer

Engineers should take the following steps to get Internet ready.

- Study Internet-based business models.
- Install the hardware and software necessary for easy Internet access and to create Web-based documents, and communicate over the Internet via websites and email.
- Build your own local Intranet. For proprietors, this could be as simple as saving information on a personal computer in HTML format, with easy browsing capabilities.
- Select an Internet service provider that offers the speed and bandwidth needed to enable drawings to be sent quickly. For smaller engineering firms, it may be more cost effective to use broadband, value-added service providers that can deliver engineering resources and meet your needs.
- Establish a Web presence in many formats, such as banner-ads, single and multi-page ads, and hot links.
- Be prepared to update and upgrade your system on a regular basis. In today's virtual world, change is constant and you are expected to keep up. Success depends on staying and looking current.