

# Providing effective multi-disciplinary engineering services

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There has been a significant demand for new terminal capacity and all ports see container traffic as the panacea for their revenue woes. Create the necessary infrastructure for a new terminal, find a willing operator and then maximise the lease revenue. As new port infrastructure is developed to meet the needs of the container industry, shippers have more options and are able to place their cargoes with the most cost efficient terminal. The pressure on the terminal owners and operators to optimise their capital investment and operating costs has therefore never been greater.

This challenge has been exacerbated by the increase in commodity costs and the general, across the board, increase in the costs of new construction. The demand to move cargo more efficiently than your competition has never been greater and this has led to consideration of the optimum delivery system for the design and development of new port infrastructure.

## The integrated one stop shop

There is the premise that terminal owners and operators are best served by hiring a consultant who appears to be able to provide all the necessary services for planning, transportation logistics, design and construction management in-house. It is assumed that the integrated consultant will be able to best optimise the interfaces within the terminal design and then deliver the necessary consulting services in the most economic and efficient manner to ensure the terminal's budgets for capital and operating costs and the schedule deadlines are met.

The optimisation of costs and schedule is critical.

The question is: can a single consultant, "the integrated one stop shop," provide the greatest value to the owner and operator by providing all the expertise necessary to achieve the optimisation of capital and operating costs desired, or is there another way of effectively providing the benefits of seamless integration of the required expertise?

In the engineering consulting business, it is rare that a single firm can be an expert in all of the disciplines required to develop a new terminal:

- Site selection
- Environmental assessments
- Permitting
- Terminal planning
- Transportation logistics
- Geotechnical design
- Pavement design
- Maritime structures design
- Equipment selection
- Electrical power
- Electrical distribution
- Control and reporting systems
- Building structures
- Security systems



Planning is critical when developing or expanding ports and terminals.



Consultants need to establish effective communication with the client.

- Fire protection
- Site servicing
- Procurement
- Construction management

Indeed, it would be a unique consultancy that could claim to be an expert in all of these fields. Even if one accepted the premise that it did have at least one expert in each of the disciplines, an owner would have to ask itself; are they really available to work on my project?

The one exception to this may be the consultant that is captive to a particular client; effectively being an in-house consultant. However, the recent trend has been for companies to divest themselves of in-house engineering because of the difficulty of maintaining a steady work load and the difficulty of maintaining fresh ideas that often come from cross fertilization with other industries.

## Multi-disciplinary consulting engineering

A consulting firm may find it hard to resist the temptation to take on every aspect of a project using its own resources; however this approach typically reduces the value provided to the client. Another more realistic approach that provides many of the same benefits is to select a consultant who is an expert in many of the terminal specialisations needed but is also experienced in bringing together expert firms that specialise in the other aspect of terminal planning, design and transportation logistics and then overlays its own expertise to ensure the terminal design and costs are optimised.

An experienced consultant would expect the terminal owner and operator to also be a key contributor to the process as they are the ones that have the most current understanding of what makes their particular style of terminal work. It is important to first obtain a thorough understanding of their concepts, operating style and particular needs. It is then possible to provide specific expertise through the coordinating consultant's own resources combined with those of the specialist consulting partners to deliver a truly optimised project.

Does this approach of a multi-firm team result in a slower or less efficient project delivery? Quite the contrary.

When you hire a firm which specialises in a particular area you have a reasonable certainty that the critical knowledge base for that specialisation will have been disseminated to those working in the firm.

Secondly, there is not the great worry as to whether the resources are actually available.

The specialist firm works hard to ensure that it remains at the top of the game by investing its time in research and development.



The lead consultant must be able to provide expertise in a wide variety of disciplines.

In the unhappy event that a specialist company doesn't deliver in a timely manner, the entire project team is not at risk. Any owner who has become disenchanted with the expertise of the 'integrated one stop shop' knows how nearly impossible it can be to move to an alternate. Its financiers will question such a dramatic move; the costs of bringing another firm up to speed in all areas can be extreme and without question the project schedule will be impacted.

Consultants should strive to provide the owner with the best expertise available on the market in each facet of its project. A firm may possess many in-house experts and specialise in many segments of engineering and project delivery, but it must also recognise there are firms who have invested in a particular technology and as such their contribution will improve upon the product provided to its clients.

While a firm brings its own experience and knowledge to a project it should also bring the willingness to engage those firms and individuals whose skill sets ensure that a client gets the value to which it is entitled. The key to making this approach effective and to ensuring delivery, is a management team which manages its own ego, understands the true needs of a client, and seeks to deliver full value in a timely manner.

As terminals and the infrastructure required to support them continue to increase in size and complexity multi-disciplinary consulting engineering is essential to successful planning and design. In order to obtain value and quality, owners and developers should select a firm that is an expert in the industry and in project delivery. The firm does not need to be expert in each and every engineering discipline but one which has sufficient expertise to manage those who are.

### ABOUT THE COMPANY

Westmar operates offices on the NorthWest Coast of North America. The Canadian head office is located in Vancouver, British Columbia and the US head office is in Seattle, Washington. They offer a diverse range of engineering and consulting services in a wide variety of disciplines. Their fields of practice include port and terminal planning and design, bulk materials handling, maritime and offshore structures, industrial structures, coastal processes, bridges and civil structures, site development and utilities, electrical and controls, and inspections. Westmar's responsive management structure and available resources allow them to apply their expert services to large, multi-disciplinary projects anywhere in the world. Westmar also specialises in smaller scale, local projects for a range of clients in both the public and private sectors.

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