Capital projects: Part I


Kevin McGuinness


Stephen Bauld

WE ALL READ REPORTS about government major capital projects (MCPs) going horribly wrong. Cost over-runs and other major problems abound with respect to new buildings, road projects, water and sewage treatment facilities, and capital enhancements to park and recreational facilities. Because one problem often follows naturally from the preceding one, it is important for all stakeholders to reduce MCP associated risks such as lack of sufficient consultation and understanding of stakeholder needs and expectations; unclear, overly ambitious or shifting project goals; haphazard approaches to the organization of work, lack of follow-up and imprecise communication; uncontrolled changes and excessively complex design or specifications; divided management; misleading testing; and poorly designed evaluation procedures.

The difficulties encountered generally fall under three broad classifications:

- the practices followed when commissioning a complex project, including risk management – the identification, assessment and integration of the benefits and risks into the overall project;
- technical factors, including overly ambitious specifications, insufficient attention to proper development and testing, and failure to incorporate the technical features or enhancements required for the finished product to perform at the intended level; and
- under-resourcing, including under-spending, inadequate manpower and time pressure.

At a higher level, all these areas of concern can be reduced to one: poor management. For instance, poor design or workmanship generally results from under-funding of the project – often itself a consequence of poor management. Another failure of management are those cost-cutting measures made with little regard to their impact on functionality. Delivering a workable final product is clearly a management concern.

While improved project management systems are touted as the solution to MCP-associated problems, often project management in practice is confused with the ever-evolving variety of project management systems, particularly computer software and systems. We think these are better described as methods of product development. Proper project management addresses the full range of concerns of the customer and the supplier.

Different types of projects present different types of risk, calling for different types of solutions. It is unrealistic to assume that a one-size-fits-all management approach will work. For instance, for highly innovative projects where the range of possible results cannot be determined until the process is conducted, phased planning is the approach of choice. Under this approach the project manager plans only to the level of detail known at the time. The direction taken at later steps depends upon the results obtained earlier. For more mundane or typical projects, one can plan effectively even for remote stages of project execution.

Risk management illustrates the need for flexibility in the project management approach. All projects present a degree of risk – the more innovative the project, the greater the level of risk.

In our opinion, the time devoted to risk management should be proportionate to the extent of risk that the project presents. Where a project is similar to many projects that have been done before, it is likely that the process of project execution already incorporates a full allowance for the risks presented. In that case, devoting additional time to risk management is probably wasteful – not that one should ignore potential risks and not be prepared; only that in this type of project the potential risks and solutions are already known and no longer need identification. However, a one-of-a-kind project, possibly requiring thousands of hours for completion, may require a great deal of research and analysis to identify the associated risks and possible methods for dealing with each one.

The project design and management process must have the capacity to handle the scope and complexity of the project. Adopting a system of project management sufficiently comprehensive to address the range of problems likely to be encountered is key. It should be integrated in approach, tying the specific project to be carried out into overall operations, first of the customer that commissioned the work, and second of the supplier.

Suitable "partnership" arrangements and responsibilities need to be put in place between the various organizations involved in the project (designers, consultants, the customer and contractor). Their respective expectations and obligations must be clearly defined and be implemented under the same management process.

One surprising and problematic aspect of an MCP can be the lack of a formalized process for dealing with commitments made by the parties. Without such a process, should the project become a litigation matter, the evidentiary record will be found to be incomplete. All commitments need to be properly documented, supported by proper action reports and routine follow-up. Another technique is to formalize the consultation process by designating representatives to coordinate the activities of those concerned in the project. Meetings, reviews and proper reports should be generated at key stages, considering not only the project's status, but also any problems in the working relationship.

Stay tuned for Part II in the November 2004 issue of *Summit,* where we will discuss budgetary concerns and the other items listed here as problems/risks in major capital projects.

Steve Bauld is purchasing manager at the City of Hamilton, and Kevin McGuinness is a lawyer with Ontario's Attorney General.