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The Fallacies of All-Encompassing Enterprise Management Systems (ERPs) for Project Companies

It is a trend to invest in all-encompassing project management systems (Enterprise Resource Planning (ERP) systems). It helps gain efficiency, allows real time dashboards to be available, and avoids manual handling of data, a common source of error and delay.
ERP systems have been developed mainly for a manufacturing-type environment. Even if they start to have project management modules, should you rely on them to control your projects? Our answer is no, if you want to keep fully intact the integrity of your company's financial control systems. This is why.

General advantages and drawbacks of ERP systems

ERP systems have been developed since the 1990's to allow a much more reliable and connected management of information in the organization. They have been mainly developed from manufacturing planning systems, and now involve a large number of complexity levels to accommodate the needs of many functions in organizations. They have been very successfully implemented in a large number of companies, bringing a significant improvement in the automation and reliability of administrative tasks. The flow of information within the company is automatic, as well as the approval workflows for a large number of approvals.
The ERP systems are supposed to enclose as a basis "best practices" as defined by the software manufacturer in terms of processes and workflows. These "best practices" can theoretically be customized to fit the organization's needs and processes although customization is a very expensive and time-consuming endeavor, involving consultants and programmers. This is why many companies prefer to try to use the available ERP systems "as is", or with minimal adaptation, in effect letting the software manufacturer impose its default processes to the client organization. Moreover, ERP systems always suppose standardization of practices throughout the entire organization, and are not adapted to local variations of practices.
While an ERP brings the benefit of linking all processes in the organization in a single software, its maturity and depth in each specialist area is limited, for example in the field of procurement, or cost control. It does not offer the same depth that is required for organizations that implement advanced processes in these areas. Advanced customizations, developments or complex linkages with other more complex systems are then needed, which bring back a significant level of complexity.
Finally, ERP systems are secure systems that are generally not accessible from outside the organization, which makes them ill-suited to the needs of nomadic, mobile activities without significant further developments.

Off-the-shelf ERP are ill-suited to project management organizations

Project management organizations, in particular when they involve large, complex projects, have strong particularities.
Each project can almost be considered like a business unit and has particular processes, often dictated by the client and/or the stakeholders. Single projects tend to span across significant geographic expanses and numerous offices; including remote sites for logistics and operations. Their institutional setup is often specific, with Joint-Ventures, alliances and the like. Procurement involves complex products and processes. The project dynamics are very different from the slowly evolving manufacturing processes; activities are not repeated and rather need to converge towards the final outcome; the actual rate of expenditure of a project can vary quickly from 1 to 10 between the initial phases and the full-fledged operational phases.
In this situation, off-the-shelf ERP's face significant limitations as they were not intrinsically designed to cover quick changes in activity dynamics, project needs or access from remote sites. They can of course be customized, at the expense of a significant investment. The main question is: is that really worthwhile?

Beware: how integration of ERPs and Project Controls can mean losing control for large, complex projects.

ERP systems are generally built around a strong accounting module. Information flows in and out to allow invoicing and payments to be made. By nature, accounting is always delayed compared to the actual activity (due to delays in invoicing and paying). In a manufacturing environment, where the organization's activity remains roughly similar over time, traditional accounting can still give a good idea of the situation of the organization, by extrapolation.
It is not the case in the execution of large, complex projects. Because activities are not repetitive, and expenditures can vary significantly from one time period to the other, a different type of discipline is needed. A strong cost control needs to be implemented that focuses on the project's actual commitments and the changes in the project's forecast, based on the present knowledge of the project's execution conditions. The actual

commitment or cost effectively spent by the project's activity is always greater than the invoices registered in the accounting system, and much more representative of reality.
Failure to implement a strong cost control system can mean overseeing significant expenditures and only realize that they have occurred when receiving the invoices, sometimes months later (in particular when the expenditures have been done in remote areas). If project controls is kept busy with low value repetitive tasks, it will not have the time to do the necessary added-value analysis and review the forecasts.

Cost control and the control of commitments is the most effective way to stay in control of the project; accounting is another way to stay in control of the organization (and it is the one that is recognized by authorities). What are the benefits and drawbacks of integrating the two processes?
The advantage of integration is of course, the possibility to have checks and balances when paying previously committed expenditures; and having an instantaneous view of commitments and actual invoices received.
However, Project Value Delivery's experience in that when integrating systems in an ERP, the accounting approach tends to drive the organization's approach to cost control, due to the fact that it is mandatory, and comfortable for most of the accounting-trained finance staff. This has strong drawbacks as cost control personnel tend to spend their time doing accounting tasks instead of focusing their brainpower on understanding the project cost dynamics. This inevitably leads to a loss of control on the project's forecast, and as a consequence, to painful realizations of uncontrolled inaccuracies like increasing cost underestimates later during the project.

Project Value Delivery's recommendation is rather to take full advantage of the possibility to have two distinct control systems that allow to have two points of views on the actual situation of the project. This is the best guarantee to detect deviations early. And to achieve the best level of control, the two control systems needs to be kept as independent as possible.

How can we still be efficient if we don't integrate our systems?

The interest of the project is:

- To have two independent control systems for cost
- To take benefit of the depth of specific systems in specialized areas like Supply Chain, logistics, operations, fabrication etc (at a level which is not offered by off-the-shelf ERPs)
- Still minimize efficiency losses and avoid data reentry between systems.

Project Value Delivery's experience is that it is possible to be extremely efficient while maintaining the independence of project management systems – and avoiding the huge cost of ERP customization. The key lies in the way the information is coded. While systems can remain independent, the project Breakdown Structure needs to be implemented in a consistent, similar way into all systems to be able to reconcile the data. From this reconciliation will come great insights into the actual operation of the project.

Should there be automatic data exchange between the project systems? Setting up those data exchange programs is always an expensive endeavor and is not always justified. Remember that accounting and cost control should not exchange data automatically or the independence of those two control systems will be compromised. Areas where automatic transmittal of data can be useful is for example, from the Supply Chain Management system to the accounting system for releasing payments to suppliers upon receipt of the product or service. However it is a nice-to-have that will take time to implement and is not necessary to maintain a high level of control.

Once the same Breakdown Structure has been established in all systems, information can be easily reconciled from reports produced by each system. It is where the acumen of the cost control comes into play: in the important task to understand the discrepancies and how they could impact the understanding of the project dynamics, and the project's forecast at completion. Project Controls' added value lies in these analysis, and enough time needs to be given to do these in a deep manner.

Conclusion: ERPs are not the panacea for organizations executing large, complex projects

It is easy to fall victim of the ERP proponents advertisement and believe that implementing such a system will dramatically enhance productivity and control of the organization. It is just not true for project organizations.
Instead of the huge investment done on massive ERPs, project companies could more wisely spend less money and effort while increasing significantly their level of control on the project outcome. In the sequel 2012-08 "*How to Invest in the Right Systems to Execute Your Large, Complex Project*", we examine what exactly should be done.
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