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How most Owner organizations underestimate the importance of Capital (Capex) Projects: PVD rule of thumb of Capex project criticality

In our interventions, we encounter too often Owner organizations that do not grasp the economic importance of some Capital Expenditure (Capex) projects that they execute, and the risks associated for the business. In this White Paper we share in particular some orders of magnitude of the thresholds for Capex projects that should get the attention of CXO level executive teams.

Capex projects can make or break the economics of the organization for many years to come

Capex projects that create the means of production of the company might be rare and far in-between, in most industries they will decide the economics of production for years, be there factories, mining plants, power plants, oil or gas production facilities. Therefore, their success in terms of cost and delay is of utmost importance for the sustainability of the organization – and probably more so than most executive realize.

The failure of a single large Capex project may jeopardize the survival of the organization or make it so weak financially it cannot resist being taken over. Often one failed project will require substantial re-financing. This is valid for Contractors and Owners alike, with the emphasis being on either side depending on the split of risk agreed contractually. There are many examples of this effect in many industries and it is sometimes amazing that Board do not learn sufficiently from these failures.

> **Any Capex Project of more than 5% of the company revenue must be considered seriously at CXO level.**
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> **Capex projects of more than 15-20% of company revenue are business critical and need to report directly to the CEO**

Project Value Delivery rule of thumb of Capex criticality and reporting line

It is our opinion in terms of rule of thumb that:

- any total Capex higher than 5% of the annual organization revenue should report at the CXO level
- those Capex projects higher than 15-20% of the annual revenue should have a direct line to the CEO, because issues in these projects might jeopardize the business

In terms of annual expenditure considering large projects to be 4 years on average, the ratios are 1% for CXO level and 5% of revenue for CEO level. It is less for capital-intensive projects of typical longer duration. At first glance, these values may look suprisingly low. The following developments will explain the rationale behind those numbers.

The economic equation of Capex project failure

Industries have different capital intensity. We characterize it by the ratio r between revenue R and annual Capex amortization. The net profit margin will be p%.

Let's consider a large Capex project of cost C and assume it will be spent over a period of 4 years. It will then be amortized over 20 years.

Typical expectable Capex project risk if the project is not well governed and run is an overspent of 50% of the Capex value and an extension of more than 1 year. Such an overspend will create an immediate financing need of C/2 and a long term additional annual fixed amortization cost of C/40. In addition there will be a loss of revenue of one year of operation of rC/20.

If we suppose that this risk will become material for the company if it exceeds a quarter of the annual profit, the limit for C to be material is based on the financing need in case of project overrun: C/2 > p% R/4 or C > p% R/2. At that limit there will be a long term impact of lesser 0.7% profit margin over the next 20 years.

If typically the company is making a 10% net profit, any Capex exceeding 5% of the annual revenue should be critical. A risk materializing on this Capex will create a direct impact of a quarter of an annual profit, an additional one-year loss of revenue of 12.5% of the annual profit that will have to be compensated somehow, and long term impact on the bottom line of 0.63% of the profit.

The specific case of highly capital-intensive industries

Some industries are particularly capital-intensive, with longer projects such as for example the nuclear, mining or oil & gas upstream companies. In that case Capex investments can take longer and can be even more critical in terms of annual expenditure. If we apply the previous model with a 8 years investment duration, the annual expenditure limits are even lower. What remains important is the actual full Capex cost relative to the size of the organization. Because typical Capex projects will be typically larger compared to the size of the organization (due to the capital-intensity of the business model), and they are longer, many more Capex projects in the portfolio of the company at any one time will become critical. This is favourable to the setup of a professional project delivery organization that might not be warranted in a less capital-intensive organization where substantial Capex projects are few and far between.

Too many organizations suffer from a lack of discipline when it comes to execute Capex projects. Relatively small Capex projects can affect the economics of the organization on the short and long term and their governance needs to be taken seriously.

Summary on the critical size of Capex projects

These simple equations were set in place to highlight how relatively small Capex projects compared to the size of the organization can impact it severely.

If a capex of 5% of the annual revenue needs to be managed particularly carefully, what should we think of Capex of 50% or 100% of the annual revenue? Those projects can definitely break the company. And sometimes their Project Manager reports several steps down from the CEO!

The two sides of Capex discipline

In most organizations, there is strong Capex discipline in terms of level of authority for approving Capex projects. It is generally well recognized that they should be approved at quite a higher level than usual operational expenditures due a number of factors, in particular their impact on the balance sheet and a number of associated ratios (some of which may affect financing and market capitalization)

What is most amazing is the poor management of these Capex projects after they have been approved, which is not at all commensurate with their criticality for the organization. Risks stem from execution that need to be managed, and governance is critical.

The easiest way to observe whether the other side of the Capex discipline is properly addressed, at least in terms of governance, is to identify the reporting lines of the Capex Project Managers in the organization. The quality of project execution will then depend from a proper governance and the presence of personnel with sufficient experience in delivering Capex projects.

Conclusion

Too many organizations suffer from a lack of discipline when it comes to execute Capex projects. Relatively small Capex projects can affect the economics of the organization on the short and long term and their governance needs to be taken seriously. We hope through this paper and out interventions to convince more organizations to consider this issue seriously when implementing their investment plans. In any case we hope never to encounter again situations where Capex of 50% or even 100% of the organization revenue or capitalization do not have a direct line to the CEO!

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