ENGINEERS AND THE CONSULTANCY LADDER

IN PROJECT FINANCE LEGAL AND FINANCIAL ADVISERS HOLD GREAT SWAY. BUT THE TECHNICAL ADVISER IS OFTEN PLAYING THIRD FIDDLE TO THESE TWO. BY TIM PARKER, DIVISIONAL HEAD, INDUSTRY AND INFRASTRUCTURE, MCLELLAN & PARTNERS.

This is likely so because the repercussions of getting a legal or financial aspect wrong in a major deal are glaring; with costly penalties that come with mistakes or bad decisions in these fields. But the ramifications of getting the third point in the triangle of project finance wrong – the technical – are often not given enough credence.

Too often the relationship is broken down from the technical adviser (TA) perspective, with TAs not being brought in early enough on projects.

Along the project journey there are a number of challenges relating to time, budget, scope, regulation, performance and contracts that result in a multifaceted decision-making process. And any one of the project management models (PESTLE, SWOT) that put a project's challenges into context often has a strong technical or process element, especially if the project is in an industrial setting.

Technical input is often the rock bed that legal and financial advisers base their advice on. Yet too often the technical input is allowed to be assumed or left over-simplified at the early stages of a project, often resulting in misrepresentation of profitability or performance.

Lack of understanding of the impact technical elements or the process in question has leads to too heavy a focus on the legal and financial, with serious consequences in both time and money.

This is not to say that financial assessment or legal coverage are not important. But an industrial or infrastructural project lives or dies by its performance. You may think that as a mechanical engineer working for an engineering consultancy this is a biased view! But I have seen banks, investors and principle borrowers fail to succeed both directly and indirectly due to underestimating engineering fundamentals.

In heavy industry, where the process aspect is critical and where the engineering consultant is of most value but is often under-utilised, failure to understand the technical side of a project can be the downfall of the best intentions.

A project in the Middle East stalled on some basic assumptions of the metallic composition of a Land Rover. We were asked to carry out a techno-economic feasibility study on the need for a particular type of automotive metallic material. The client felt there was a clear market gap but needed the study to satisfy the investors it had already attracted.

Our scope of work included a market analysis and, given the metallurgy involved, this meant that our technical teams worked closely with our marketers. Shortly after accepting the brief it was apparent that the lack of sector knowledge had misled the direction and scale of the project.

Unknown to us, the client had based the scale of the operation on the assumption that the type of steel used throughout the vehicle equated to 1.25 tonnes per 2 tonne car. The reality was that the particular metallic grade is unique to exposed engine parts and only comprises of 35-40 kg per car. This is an extreme example but the market assessment based on the product knowledge was clearly misunderstood.

Over-simplifying technical assumptions can be risky. The breadth of a TA scope can stretch from deeply technical operational aspects of equipment to the commercial comparison of products for pricing.

The fear of failure from a legal perspective is high and understandable – everyone wants to be in a strong legal position and have the full protection of the law. The quantum of the financial borrowing can be astronomical for a heavy industry complex to be realised, so care needs to be given to which financial products are best suited to the borrower.

Both of these though are underpinned by project parameters that the TA has a fundamental role in assessing; especially in industrial projects where the process is the most critical aspect that needs high degrees of accuracy in the modelling of.

Over-simplifying the technical assumption poses a risk because the base case may work under broad assumptions but when sensitivity or scenario modelling is applied, errors can be introduced.

For example, straight line correlations on consumption rate may be predominately true in batch processes but are rare in continuous processes, such as in some melting and heat treatment; lowering the production volume does not always reduce the consumption of natural gas, where certain types of furnace

refractory lining needs minimum temperature to maintain structural integrity. They cannot be easily turned off.

A lender's model may only capture this as a variable cost but the engineer's model will capture the consumption rate and the unit cost. Additionally, the gas contract under review from the legal side may be fine but is there an element that means continuous supply is only available at a higher unit cost; or worse, not available at all.

We all accept that some processes are simpler than others and the need for highly detailed process modelling may be unnecessary; but good technical consultants are needed to advise whether the simplifications can be used or not. A recent metals project we advised on was put on hold by the lender until the borrower resolved a number of issues raised on our TA risk register.

While most of the hard-hitting red flags where obvious – lack of raw material and utility contracts – it was the operational areas that the lender was unaware posed a risk. In this case the performance testing criteria were cleverly worded but under assessment they did not comfortably reflect the expected quality levels for the finished goods.

After we carried out a chemistry balance review, based on the raw material input and the technical parameters, we were able to advise on a robust approach to testing, which in turn allowed for clear commercial decision-making supported by technical principles. Detailed, in-depth technical analysis meant the lenders were protected, when they might not otherwise have been.

Phasing or introducing stage gates in the feasibility process is becoming more commonplace but in some cases we have insisted on phasing if, from the outset, we consider a project may be marginal or initial investigations have not been completed.

We currently have a project where the unit price for electricity is high. From our research, under a phased approach, we think the electricity price is being used to restrict the volume of high intensity electricity use by industries in the currently selected site location. Our client is now fully aware early on in the project and parameters are being changed to suit, rather than involving a technical review at the later stages of the feasibility or due diligence exercise.

On the flip side an example of a client with a proactive view was one who assessed the technical viability for a speciality steel long product in the MENA region from the outset.

Their initial concept had both 12m and 18m length products, with the 12m product making up approximately 92% of the planned production mix. Additional 18m production capability would appear to give them a unique advantage over the competition in their region. However, some commercial and technical issues had not been thought through.

The production of 12m length products was the conventional norm for this product type in the region, meaning transportation of both raw material and finished product above 12m length was restricted, a fact unknown to the client prior to investigation.

So while other international competitors can operate, produce and sell 18m products, it was not economically viable for this particular project due to local infrastructure regulatory constraints.

In addition, as the raw materials where being procured, only a few international suppliers could provide the longer lengths – supply and demand economics therefore meant that the price was higher. The capital expenditure for the super-sized equipment within the plant was also not pro rata. The land and building requirements would need to be larger.

So the proportional benefit of the increase in size for 8% of the production mix was not worth the expenditure and it was realised that by removing the 18m capability the viability of the project was vastly improved. The 18m technical assumption was out of context. The project is now under construction and will make its first product in May 2018. The real world risks outweighed the advantages of a wider product portfolio.

When a project first starts therefore, the borrower's initial instinct is to completely believe in the environment in which their project sits.

Maybe it is because a borrower considers a project infallible, has invested blood, sweat and tears over what could be many years to get to a point with a potential lender, that they rarely think that their idea may not be techno-economically viable.

Funding is normally the limiting factor and so the project finance community is alerted, which is when the due diligence process starts and the request for technical review is often kick-started. I have been requested many times to provide a bankable feasibility study for a borrower because the bank has asked for one.

Rarely is it because it is part of the borrower's internal sense check. Which is why bringing TAs in early and giving them the same level of credibility as legal and financial advisers is essential in the project finance world. ■

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