THE CHALLENGE OF MANAGING FINANCIAL RISK IN SUBMARINE CABLE PROJECTS

Nick Smith, Leigh Frame (Alcatel-Lucent Submarine Networks)

Email: <nick.smith@alcatel-lucent.com>

Alcatel-Lucent Submarine Networks, Christchurch Way, London SE10 0AG, UK

Abstract: The financing of submarine cable projects has turned full circle within the past 15 years, and today the corporate financing paradigm, implemented via traditional consortia, has returned as the dominant mechanism within the industry. Risk management options within the submarine cable industry are much more limited than in other industries that successfully use highly leveraged project financing methods. The provision of revenue certainty is an essential element needed to allow more flexible forms of finance to return and thus provide a greater diversity of funding options.

1 INTRODUCTION

Submarine cables are capital-intensive infrastructure projects that face considerable uncertainties when forecasting the future returns to investors. As such, they are not dissimilar to projects in other industries such as petrochemicals and satellite communications. However the structures that have evolved to manage these risks in the submarine cable industry are significantly different to those in other industries. The aim of this paper is to examine the factors unique to submarine cables and the lessons that might be learned from elsewhere.

2 MODELS OF SUBMARINE CABLE FINANCING

Any discussion of the management of risk in submarine cables requires an understanding of the normal structures that have been used to finance and implement submarine cables, and these will now be briefly reviewed.

2.1 Consortia

The traditional model is that of the consortium of telecommunications operators. In this case the partner companies enter into an agreement between themselves, known as the "Construction and Maintenance Agreement" (C&MA) and then contract with a system manufacturer for the implementation of the system. Each operator receives a share of the original (or in more recent arrangements, the ultimate) system capacity in proportion to their investment.

The risk to each individual operator is diminished, because they only bear the liability for a small proportion of the total project costs, and the cost is optimised as the capacity is paid for 'at cost', with no intermediary. The downside is cash flow relative to capacity take-up.

If desired an operator may choose to take small stakes in a number of systems, thus mitigating against the risk of any one project running into difficulties (while maintaining a visibility across the market on costs and prices).

In financing language, this type of arrangement is better described as ***corporate finance*** rather than ***project finance***. A large telecommunications operator may be able to fund its project

investment out of its own available capital and revenue without resorting to specific fund raising for the project. Even if the operators are arranging financing specifically to fund their involvement in the project, prospective lenders and investors will base their assessment on the overall financial health and cash flows of the operator, as opposed to the forecast cash flows from the project per se.

2.2 Project Financing

In the late 1990s and early 2000s alternative models became fashionable, in which project sponsors established a legal entity with a limited amount of capital specifically for the purpose of developing one or more submarine cable systems. These entities then raised significant further sums of capital as a mix of debt and equity finance, generally either from financial institutions or system suppliers.

These models were examples of highly leveraged ***project finance***, in which the lenders had to rely on the revenues solely from the project to repay the debt, and in the event of default had recourse only to the project assets as a source of collateral. This innovation in project financing was closely associated with the development of the *"carrier's carrier"* model in which the new operators focused on selling wholesale capacity, often in the form of "Indefeasible Rights of Use" (IRUs) to other telecommunications operators, rather than to end users such as consumers or businesses.

Following the bursting of the dot-com bubble and general collapse of the telecommunications market in the early 2000s most project financed submarine cable systems failed to repay their construction costs and the legal entities behind them entered into bankruptcy protection. The financial institutions who had provided the bulk of the funding were unable to recover their investments because the value of the system assets forming the collateral traded for a fraction of their cost [1]. As a result, obtaining project debt financing for submarine cables has since become restricted to a very limited number of cases, for example Main ONE [2] and Seacom.

It might be assumed that the error behind this demise was that of poor market timing. However project finance has a successful track record in other industries with cyclical demand and volatile product pricing, notably petro-chemicals. Below we discuss how the financing structures put in place for these project financed cable projects lacked the risk management mechanisms that are applied to project finance in other industries.

It is generally acknowledged that certain regions were overbuilt during the early 2000s, and a simplistic view would be that this led to the collapse in capacity pricing and therefore in the realisable value from the asset collateral. The root cause of this dramatic excess of supply over demand however, can still be traced back to a failure to adopt appropriate risk management techniques, which would in themselves have imposed the necessary discipline and bottlenecks on the process of obtaining project finance.

2.3 Hybrids and Alternatives

A number of variants on the above two themes have also been used. One example is where a small number of existing operators have established a dedicated joint venture company to build and operate a system. Others include the "anchor tenant" where one or more fibre pairs are pre-sold to a customer in advance of system construction, and the provision of governmental or inter-governmental (e.g. World Bank) funding for projects that would not otherwise be economically viable. While these are interesting, and some structures have proved to have benefits in implementation and operation management, they do not change the fundamental principles of risk management.

3 THE NATURE OF FINANCIAL RISK IN SUBMARINE CABLE PROJECTS

It was asserted above that submarine cable projects face considerable uncertainties in the returns that investors will receive. This section will review the sources of that uncertainty or risk and how they might be managed both within the submarine cable industry and in other industries. The framework is that which might be applied by a financial institution assessing a project finance proposal. However the risks exist in all project structures even if the consequences are less catastrophic in some structures than others, should they materialise.

- **Completion or construction risk** arises due to the possibility that the system may not be completed due to technical difficulties or failure of the system supplier. It is mitigated by sound project planning and feasibility studies, the engagement and management of a reputable contractor and the provision by the contractor of guarantees that can be called upon in the event of non-completion.
- **Country and political risk** management requires evaluation of the legal and economic framework of the countries where the system is to be installed and the locations of the project sponsors.
- **Financial risks** such as exchange rate fluctuations and interest rate risk are common across all major capital projects and are managed with well known tools such as currency hedges and a mixture of fixed and floating interest rates.
- **Off-take risk** is the petrochemical industry terminology for the risk that no buyer may be found for the product produced by a project (oil well, refinery, gas pipeline) etc irrespective of the market price.
- **Pricing (market) risk** arises because the wholesale price of capacity on a route is not constant, but fluctuates (generally decreases) over time.

4 MANAGEMENT OF OFF-TAKE AND PRICING RISK

It is in the last two areas that the approach between submarine telecommunications and other industries is most marked, and it is these risks that were the source of failure in many private submarine cables in the early 2000s.

Most debt financed petro-chemical projects include a guaranteed purchaser for the product on a “take-or-pay” contract. The equivalent mechanisms in submarine cables are where capacity is pre-sold in advance of construction, either in the form of fibre pair sales or IRU contracts. However these in general only guarantee a proportion of the project revenues.

In the petro-chemical industry, pricing risk is managed through the use of forward sale contracts and derivatives. These mechanisms allow parties who value certainty about future prices (either as buyers or sellers) to exchange risk through parties who offer arbitrage, or offset the risk with parties who will price the volatility or uncertainty. For example an oilfield developer may enter into derivatives contracts that produce a positive return in the event of falls in the spot price for oil, thus making up shortfall on the revenues from selling the project’s physical product.

Telecommunications markets for international capacity lack transparent and liquid futures markets that would allow project sponsors to pass these risks either to prospective customers or financial institutions. Attempts were made to found bandwidth exchanges in the late 1990s [3] [4] however the concept did not take root. Impediments to the implementation of futures or hedging markets for telecommunications capacity include:

- Lack of price transparency. Most transactions are conducted 'behind closed doors', and many feature visible or not-so-visible bundling, offsetting or other deal features.
- Telecommunications capacity (except for satellites) is tied to geographical locations and routes, as opposed to being a globally transportable commodity such as oil.
- Lack of standardisation on Quality of Service issues.
- A perception that capacity prices can only decrease with time. In theory this should not be an obstacle, as for the right premium some institutions should be willing to assume the risk on the rate of decrease. In practice the effect has been a dearth of buyers for future capacity.
- The historical tradition of selling capacity on long term contracts (e.g. IRUs) and the increasing need, with point to point meshed networks, to understand the specifics of the physical route and not just the end points, making parties reluctant to enter contracts via an anonymous financial exchange market.
- Capacity increments from new systems on a given route come in large increments compared to the existing installed capacity, leading to step changes in forecasts of demand versus supply.
- A general historical unwillingness on the part of operators to commit on the basis of their forecasts, partly based on the view that commitments beyond a few years could be anyway met by a new build if there was a tightening of capacity availability in the market.

The general approach of the industry in recent years has been to side-step the risk of fluctuations in wholesale capacity prices by system promoters vertically integrating into the retail distribution market for corporate telecommunications services. This has happened through the resurgence of PTT type operators who have an existing retail business buying capacity through consortia type arrangements, and private wholesale carriers diversifying into the value-added capacity markets, including LMEs and other retail markets. However this serves more to disguise the risk rather than eliminate it; if a network operator with a retail business participates in construction of a system and later discovers that the equivalent capacity could have been acquired more cheaply then it is a signal that the original investment decision was suboptimal.

What is certain is that the lack of acceptance of take-or-pay mechanisms in subsea project financing introduces potentially catastrophic revenue shortfalls versus the business plan, and as history has shown, drives these large infrastructure projects into Chapter 11 or its equivalent, creating a domino crisis, as other competitors are forced to match capacity pricing based on incremental capital expenditure.

4.1 Possible Hybrid Financing Vehicle

It is possible to imagine a structure (with variants), which combines features of consortium cables and asset-backed financing, with risk mitigation borrowed from other commodity markets based around large infrastructure (notably the petro-chemical industries).

The equity and management would be provided by a small group of operators, who in exchange for their risk taking would have 1) a certain allocation of day-one capacity and 2) take options going forward which were on a matching price basis to the take-or-pay customers. A proportion of the build cost would be financed by debt, for which the repayments would be covered by take-or-pay contracts with other operators.

In effect this structure offers a similar level of certainty as a consortium structure but for the take-or-pay customers, they trade the benefit of deferred cash-out (a consortium structure requires 100% funding prior to going into service), with the disadvantage of non-proportional access to or allocation of the total system capacity. This trade has a perceived benefit and a resulting value. Negotiating across a take-or-pay customer group based on this perceived value is likely to be a similar, but no worse, challenge to agreeing a current C&MA.

5 CONCLUSIONS AND FUTURE OUTLOOK

It has been examined above why the risk of financing submarine cable projects is very different to infrastructure in other industries, and how risk management mechanisms are much more limited. Looking to the future, there are some grounds to believe that this situation could change. There is an increasing trend in some markets (e.g. the Atlantic) for capacity to be sold on short-term leases as opposed to IRU contracts. Additionally the price of capacity in a number of markets is below replacement cost, leading to the probability of price rises for the first time in a generation. It is possible that some of these elements will make it easier for project finance to return to the subsea market, but as this paper argues, a mechanism to provide revenue certainty – for example, take-or-pay contracts – is essential to make such a return viable in the long term, and to create the stability for this project model which is needed by the banking, subsea and wider telecommunications industries.

6 REFERENCES

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