

THE MYTH OF THE ALL-INCLUSIVE TURNKEY CONTRACT

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Abstract: In recent years, most submarine system equipment has been supplied on a turnkey basis. Although the supply contract is a major deliverable for a submarine cable project, it is not the only one: other items can make up a significant share of the overall cost and project management effort, particularly for system upgrades. This paper considers the reasons why turnkey projects have historically been preferred and studies how the perceived advantages have not always been achieved in the submarine cable industry. Alternatives to the turnkey model include systems supplied by a consortium of suppliers, where, for instance, the Purchasers integrate segments provided by different manufacturers. Purchasers can even act as system integrators, mixing and matching between suppliers for particular equipment in order to obtain the best solution for their precise needs.

1. TURNKEY CONTRACTS AND THE SUBMARINE CABLE SYSTEM MARKET

Submarine cable system projects in recent years have been described using the word “turnkey” and contracts have been specified on the basis of turnkey supply. Non-turnkey proposals are usually rejected out of hand. However, the reality of submarine system projects can be very different from this aspiration: the idea of a product that can be immediately used just by “turning the key”, that is, with no additional effort on behalf of the purchaser, is not often borne out in reality in the submarine cable industry. Submarine cables are expensive to buy and purchasers are keen to retain involvement in these important projects. The large numbers of purchaser delegates flown around the world at great expense to attend procurement group meetings to manage the activities of suppliers indicate that submarine cable projects are certainly time- and resource-intensive on the purchasers’ side.

In theory, turnkey procurement means that the supplier provides the product or service

ready to use by the customer, as shown in Figure 1. This model is most usually appropriate to simple products which can be provided “off the shelf”.

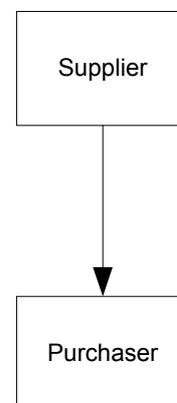


Figure 1: Simple Model of Turnkey Supply

One of the key advantages claimed for turnkey projects is that system design is integrated and the organisational structure is simple. The contractor has full responsibility for the project, including design responsibility, and represents a “one stop shop” for the purchaser. The intention of a purchaser entering into a turnkey contract is to effectively outsource the project to a third party whereby the

customer's input is minimised and normal business can continue without interruption.

The turnkey model has not been a straightforward fit to the submarine cable system industry, largely due to the complex nature of the industry and the diverse number of products which make up a submarine cable system. A submarine cable project is a complex, technically challenging product. Submarine cables are bespoke products and no two are exactly alike. It is immediately apparent that the example in Figure 1 is too simplistic.

The first objective of a turnkey project mentioned above, namely the integrated design and organisational structure, is seldom fully achieved. Although a single point of contact is usually established at the top level via a supplier contract manager or project manager, in practice the various activities are devolved as an inevitable consequence of the large amount of work and the large number of dissimilar products. Suppliers usually have different project managers for different products, who liaise with the appropriate experts on the purchaser side. In fact, the different products may be produced by different business units or divisions with the supplier, and in such cases the supplier may have difficulty speaking or acting as a unified entity. For suppliers without in-house marine capability, the cable ship will be provided by a third party and although the contracts between purchaser and supplier and supplier and marine subcontractor are theoretically back-to-back for a turnkey contract, it is questionable whether this is always completely accomplished. For such cases it is not clear whether purchasers are deriving any benefits from the nominally turnkey supply in comparison with having let separate contracts.

Moreover, the concept of a single supplier providing everything, a notional benefit of a turnkey solution, can act against the

purchaser obtaining the optimum solution for his needs. A turnkey contract locks the Purchasers to a single supplier for all types of equipment. For a submarine cable project, with its variety of unrelated projects spanning diverse fields of engineering, it may be better to mix and match to get the best equipment available for each function.

It is rare that submarine cable purchasers fully enjoy the benefits of minimising their effort and handing over the implementation in its entirety to a supplier. The purchasers continue to have substantial involvement in their cable projects to provide quality assurance and project management input. The project meetings alluded to above entail a large amount of man-hours and travel costs.

In any case, large complex projects have always involved substantial purchaser input despite being nominally turnkey. From the purchasers' point of view, submarine cable projects viewed as a whole are never completely turnkey, even in theory: there are always purchaser-specific responsibilities essential for the project in addition to the supply contract, including items such as station space and power, network administrator and operational systems, station mux equipment, backhaul, trans-national links, etc. All of these items form essential parts of the cable system and their implementation needs to be managed. Indeed, the submarine cable supply contract may not be the most significant item for the project implementation. For new build systems, cable station build may be on the critical path and determine the submarine supply contract timescales, rather than the other way around. The submarine cable supply contract may be of secondary importance. Similarly, for upgrades where no new submerged plant is purchased, non-supply contract costs can be dominant.

Figure 2 illustrates a more realistic model of submarine cable system procurement, reflecting the complexities outlined above. Looking at a project as a whole, the purchasers will use a number of different suppliers for the various activities and products shown in Figure 2.

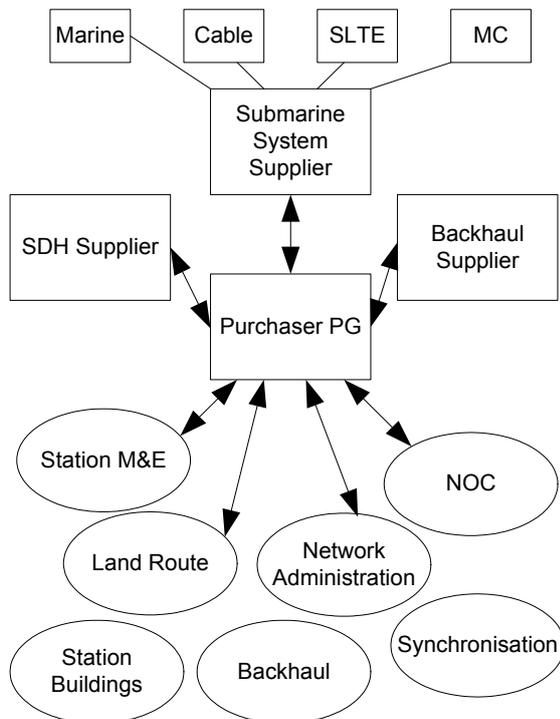


Figure 2: Model of Submarine Cable System Procurement

Focusing again on system supply, the submarine cable industry has used some alternatives to the simplistic turnkey model. These approaches are modular, in that more than one supplier is used.

2. CONSORTIUM BIDDING

The most widespread modular approach is “consortium bidding”, whereby different segments/links are provided by different suppliers, similar to the dividing up of work common during the PTT consortium club days. The risk and capability are shared by the different suppliers. While individual segments are turnkey, the overall system is not and the purchasers work on the integration of the elements into a single system.

Alternatively to dividing the work geographically, it can be divided by product. For instance, it is becoming increasingly common for SDH equipment (where required) is delivered by a different manufacturer from the SLTE/submarine cable link supplier. This is a step towards suppliers concentrating on their areas of expertise, and the purchasers cherry-picking the most appropriate supplier for each part of the job.

3. PURCHASERS AS SYSTEM INTEGRATORS

This last point has been taken further by recent projects where the system integration was done by Cable & Wireless Submarine Systems Engineering. In such projects, there are different suppliers for marine activities, submerged plant and terminal equipment, and the responsibility of ensuring that the completed system performs correctly as an integrated whole rests with the purchaser.

The key driver for Cable & Wireless to act as system integrator was cost. The systems in question had previously been uneconomic based on turnkey quotations and the projects only happened because of the input of the purchaser as integrator. Suppliers build the turnkey risk into their project management costs; this cost can be saved when the purchasers take on the integration responsibility.

If a purchaser can contribute a key asset to the system, the case for purchasers to act as integrators can become compelling, especially when the asset constitutes a large portion of the overall cost. A notable example is the use of redeployed submarine cable provided by the purchaser^[1]. Other items that the purchasers can similarly provide include second-hand terminal equipment and shore ends^[2]. Such options allow operators to maximise the use of existing assets and reduce capital expenditure.

Although on the surface the idea of purchasers performing the system integration function appears to be a new concept, in reality it is a return to the historic paradigm where purchasers acquired the various system components from multiple suppliers and were responsible for the system design and integration themselves^[3].

4. DISCUSSION

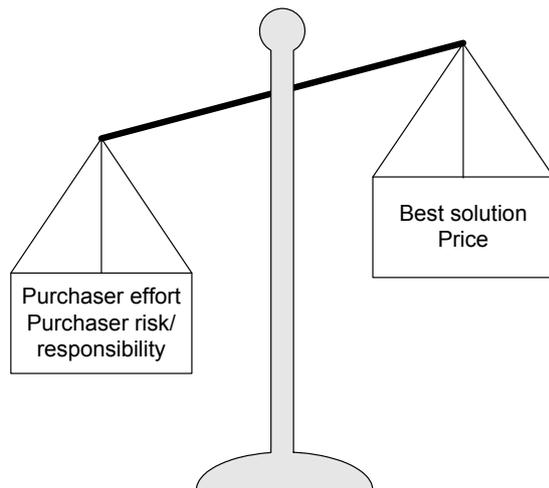


Figure 3: Benefits Versus Disadvantages of Modular Approaches

The advantages of using a modular approach are shown diagrammatically in Figure 3 and explained further below.

- The system is optimised to the purchasers' precise requirements.
- The best supplier can be used for each specific job.
- The increased flexibility allows the purchaser to use cheaper equipment (for instance, terrestrial equipment) if required. The turnkey model limits purchasers to the traditional submarine suppliers only. With vendors aligning their terrestrial and submarine portfolios, there is great benefit to the purchasers in considering other suppliers^[4].
- It is possible to take advantage of new technologies from smaller suppliers.

- The purchasers make full use of the expertise of their specialist submarine cable system engineering departments.

On the other hand, there are some restraints against the adoption of these ideas:

- Multiple, interconnected contracts are needed, with specific, bespoke terms and conditions.
- The purchasers need to be willing to assume the integration responsibility.
- Some suppliers only provide equipment as part of a turnkey solution, so the full range of suppliers in the market may not be available to a purchaser seeking to integrate a system from various sources.
- A key difference between the purchasers of today compared with historically is that most purchasers have divested themselves of their cable ships. As such there is less work than previously that the purchasers can accomplish in-house.

A long haul repeated submarine cable system is a complex and expensive investment. As a consequence, purchasers of long haul submarine cable systems are risk averse and perhaps unlikely to want to assume any more responsibility than they have been accustomed to in recent years. As a result, it is likely that new-build, long haul systems will continue to be purchased via turnkey contracts, either for entire systems or on a modular "consortium bidding" basis.

However, for upgrades, regional systems and particularly systems where the purchasers are able to contribute a significant asset, a systems integration approach by the purchasers is likely to increasingly find favour. This may allow further development of regional markets in areas where submarine systems could not previously be justified on economic grounds.

Purchasers are more likely to act as system integrators in private systems or systems with a small number of purchasers. Purchasers of such systems can be more agile and proactive than the cumbersome procurement group structures used by large consortium systems^[5].

Purchasers willing to take on the burden of system integration and with the capability to do so are already enjoying the benefits outlined above. It is expected that this trend will gain momentum in future, especially for projects where cost is a particular concern or where the purchasers have suitable submerged plant or equipment available for re-use.

5. CONCLUSIONS

Although risk-averse purchasers have usually specified turnkey projects, we have seen that the benefits of the turnkey procurement model have not always been realised in the submarine cable market. This, in conjunction with the need to drive down costs, has led to a change of mindset: purchasers are now open to the possibility of performing the system integration themselves. While this appears a new development, it is in fact a revival of a model used in a previous incarnation of the industry.

6. ACKNOWLEDGEMENTS

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