

The Search for a Perfect Arrangement – Is Turnkey the best ?

In the project-based business of construction and engineering owners and contractors have searched for decades for the “perfect” contract arrangement. Years of research, countless special initiatives sponsored by governments and academic institutes have sought means of improving industry performance and reducing the tensions and the disputes that are an everyday occurrence. Turnkey remains the most tried method for procuring process plant projects. Is it the best approach?

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Because of their one-off nature, engineering projects are full of risks both for the owner (or project sponsor) and the contractor. The more complex the technology or the more new it is the greater the risks.

The history of contract arrangements is characterised by attempts by both sides to offset, reduce or pass on to the other as much risk as possible. It has also been characterised by the perception held by owners of late delivery by contractors, poor quality control and a pursuit of extra profit through “claimsmanship”. How true or how justified such a perception is, is not considered in this article. However, that such views are held cannot be denied and nor can it be denied that they have shaped trends in contract management in recent years.

The following table summarises the principal procurement or contracting arrangements that have been developed by the construction and engineering industries:

Traditional Approach (mainly in building and civil engineering)	The owner contracts with the builder for the supply and with a separate design firm for the design. The owner is responsible to the contractor for the design. A representative of the design firm is appointed as owner’s agent for the purposes of administering the contract between the owner and the contractor.
Management Contracting/Construction Management	The owner contracts with a number of suppliers who in the Traditional Approach would have been subcontractors of the main contractor. In addition, the owner appoints a firm as manager to coordinate and control the execution of the work, the Management Contractor or Construction Manager. The design could be done by the individual suppliers or by a design firm contracted by the owner, often also managed by the Management Contractor.
Design Build/Turnkey	The design, supply and execution of the work are the responsibility of one contractor appointed by the owner.
“BOT” Build Own Transfer	A variation of Turnkey but where the contractor also contracts to operate the completed project for a period of time after which he transfers the project to the owner.
Partnering	A means whereby a group of companies form a partnership, normally temporary to share the risk in delivering a particular project e.g. through a Consortium arrangement.
Public Private Partnership Initiative or Private Finance Initiative (PFI)	A variation of the BOT approach used by State organisations for public projects. In reality a means of procuring project financing that does not need to be reported as borrowings in government “balance sheets”.

Keine dieser Konstellationen hat bisher dazu geführt, dass die Anzahl der Reibungspunkte und Dispute bei der Abwicklung von Bauvorhaben reduziert wurde. Kernpunkte bleiben weiterhin die unterschiedlichen Auslegungen des Liefer- und Leistungsumfanges und des dafür zu zahlenden Preises.

None of these procurement methods of themselves has led to better performance or a reduction in arguments between owners and contractors over what is to be done, when and who will pay.

In essence these procurement methods fall into two broad camps. The first involves design provided by the owner, the second design provided by the contractor. The latter, turnkey approach remains the most tried method for delivering engineering projects and through the recent developments of BOT and PFI with their added responsibilities the most fashionable.

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Engineering Projects are Normally Turnkey

The majority of process plant projects are procured as Turnkey. The word turnkey, "clef en main" in French, "schlußelfertig" in German, has always caused difficulties. At this point it is worth stopping to consider what the somewhat ambiguous term turnkey actually means.

It implies some form of completeness, to many people the most absolute form of completeness, implying the completion of a project such that it is ready to use i.e. that all that is required is that the owner insert his key on completion and begin full use of the work.

A US court laid down the best and most widely accepted definition of the term:

The term turnkey construction job under the applicable case law imposes on the contractor the responsibility for providing the design of the project and responsibility for any deficiencies or defects in the design, except to the extent such responsibility is specifically waived or limited by the contract documents..

Turnkey projects are characterized by the owner's reliance on the contractor's design. The law in most jurisdictions is that in such circumstances the contractor is responsible for producing a project that is suitable for its purpose. As the definition above makes clear, the contractor's responsibility may be modified in certain circumstances provided for in the contract documents. Typical examples of such circumstances include where part of the design information is provided by the owner or certain supplies are provided by the owner for inclusion in the project (provided no exclusion of liability attaches to such provisions).

A turnkey project might be a complete house, a complete and fully functioning steel mill or it may be a single particular piece of equipment. Engineering contractors often wrongly refer to a project as being turnkey or comprising of turnkey elements when it contains elements out-with their normal scope of supply. For example a steel machinery supplier contracted to supply an entire steel mill comprising building and civil engineering works or a pipeline contractor employed to supply processing facilities as part of the project.

For the owner a turnkey contract (often referred to as EPC, Engineer, Procure, Construct in the petrochemical industry) provides the comfort of a single point responsibility for the design and the supply. In addition he has the comfort of knowing that the design is to be undertaken and guaranteed by acknowledged experts. This is of particular importance if the project involves new technology. However, turnkey projects also carry certain risks for owner:

- It is difficult to evaluate the relative merits of competing bids.
- Contractors might be tempted to "design down" to a cost.
- The cost of making changes is relatively high.

For the Contractor the risks are substantial. In addition to the risk inherent in providing and warranting the design, Owners increasingly insist on the fastest possible completion times. This is a reflection of the speed with which market demand changes. Owners proceed with projects

as soon as they perceive of a change in demand for the products or services they produce, and they look for the quickest return on their capital investment. Most turnkey projects therefore involve “fast-track” execution, where supply or construction begins before full completion of the design. To execute successfully projects of this type Contractors require a highly efficient integrated approach to project management with proven execution and control processes.

Making Turnkey Work

Experience shows that the most successful turnkey projects are paradoxically those in which the owner’s involvement in the execution is very high. This active involvement of the owner can be achieved by specifying in the contract the project management techniques and deliverables the contractor is expected to comply with to guarantee performance and enforcing compliance through a system of owner led audits.

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This “open-book” approach to project management involves the contractor in designing and publishing execution procedures to cover such matters as planning, scheduling, design management, risk planning, change control, and claims management and other associated management processes. The Contractor is encouraged by the terms of the Contract to provide the fullest information on his management approach and the status of the project, and work with the owner to determine goals and solve problems.

In the End It’s Management that Counts

No contract arrangement can guarantee a problem free project execution. In the final analysis, it is the quality of the people and the quality of the management systems of the owner and the contractor that is the best guarantor of success.