

SECTION II.6

SETTING INCENTIVES AND SHARED SAVING SCHEMES

1. INTRODUCTION

The term “incentive” is broadly used to indicate anything that inspires and motivates action. In construction, the term usually refers to attempts to increase production or performance in return for some form of financial reward to the individuals and/or organisations involved in the project.

The purpose of this section is to provide guidance to help clients and contractors identify the elements of a project procured under the seven principles of BDB that may be incentivised. There are three parts to this:

- an introduction to the forms of incentivisation that support the BDB principles
- a check list which presents the major issues to be taken into account when considering the potential benefits of an incentive scheme; and
- some examples of typical incentive arrangements and a bibliography of texts describing specific schemes.

2. INCENTIVES

There are two basic types of rewards that can be used to motivate people: psychological and financial rewards. Psychological rewards are usually targeted at individuals or teams and aim at providing recognition and positive feedback to employees. Although the use of this type of rewards is fundamental to support collaborative relations in the supply chain, their examination goes beyond the scope of this handbook. We will therefore focus on the second type of rewards, namely financial ones.

Financial incentive schemes usually use a direct or indirect monetary reward to stimulate increased performance. These rewards may apply at all levels of the organisation: individual, team and corporate level. In UK construction the general thrust of financially based incentivisation schemes tends to deal with the “hard” issues of time and money. In other words, where the client gains a financial advantage through the contractor’s enhanced performance in delivering early or reducing costs, the contractor receives a financial benefit. But a number of “soft” issues may also be a suitable focus for incentivisation that benefits both parties. For example, improvements in training and quality may provide the contractor with repeat business from the same client, attract other (new) clients to use that contractor. This may give the contractor a commercial advantage over his competitors and an increase in market share. For the client, the long-term benefit is an improvement in the quality of the built product and the knowledge that the contractor is able to deploy skilled staff.

It is therefore useful to distinguish between different kinds of financial incentive on the basis of the nature of the reward. These are direct positive, indirect positive and direct negative incentive schemes.

Direct positive incentive schemes focus on achieving specific performance targets in terms of cost, quality and schedule. They are often used in conjunction with direct negative incentives, e.g. penalties and liquidated damages. Indirect positive incentive schemes avoid the stick and carrot logic, and try instead to identify targets that are of benefits for all parties. Research carried out in the USA by the Construction Industry Institute of Austin (Texas) and later corroborated by a UK survey conducted by the ECI, found that:

Direct negative incentives have negative or no effect on performance. Used alone, therefore, penalties lower performance income –liquidated damages are so common practice that they just do not make a difference.

Direct positive incentive schemes often increase certain aspects of project level performance, but have some serious drawbacks indications. For example, they tend to require more detailed contracts and stricter enforcement, and they consistently give rise to disputes. They are usually used simply to convince contractors to take more risk, which means that they increase project costs without enhancing performance.

As a result, it appears that effective incentive schemes need to be based on a mix of positive direct and positive indirect motivators within an arrangement that reflects a global approach. An effective scheme emphasises multiple objectives and focuses on influencing the work of the project as a whole in a positive way.

TYPE OF INCENTIVE	MOTIVATOR USED	FINDINGS
<i>Direct negative</i>	Penalties and liquidated damages	They do not improve performance
<i>Direct positive</i>	Immediate financial rewards for achieving specific performance targets in terms of cost, quality and schedule. Usually used in conjunction with direct negative	They improve performance but foster adversarial relations (disputes, risk taking)
<i>Indirect positive</i>	Vary in relations to the mutual goals of those involved	They are especially effective when used to foster the achievement of medium term goals within a collaborative framework

Figure 1: Incentives types and effectiveness (Source CII, 1986 and CIRIA, 1996)

3. PRINCIPLES OF INCENTIVISATION TO SUPPORT THE BDB APPROACH

In order to support the application of the seven principles any incentive strategy with the supply chain will have to adopt an incentive and shared savings arrangement based on the following criteria.

- Deliver optimum value for money by:
 - obtaining commitment on cost from all parties
 - Increasing efficiency
 - Focusing on value for money for the client and all parties
 - Encouraging the supply chain to exceed the project objectives;
 - Supporting the common objectives of the client and the supply chain;
 - Motivate the supply chain to adopt collaborative behaviour patterns
 - Promote better networks for communication and disclosure of mutual information
- Increase supply chain profit
- Minimise risk by promoting proactive management and sharing of project risks throughout the supply chain
- Improve allocation of resources for training

Accordingly, incentive and shared saving arrangements will have to display the following characteristics:

- Link profit level and performance at project level
- Relate to each party's business objectives, therefore offering worthwhile benefits
- Be based on the principle of sharing both gains *and* losses
- Link sharing of risks/rewards to "capacity to influence"
- Focus on collective performance (emphasise and reward the performance and success of teams or clusters more than that of individual persons or firms).
- Be subject to formal agreement and rules that make clear commercial arrangements and risk ownership
- Involve the key members of the supply chain
- Be based on equality of information and access to data (open books)
- Be understandable, easy to apply and administer
- Be based on performance indicators agreed by all parties
- Be able to be adjusted when major changes occur

4. SOME AVAILABLE OPTIONS

Incentivisation principles and criteria similar to those suggested here have been used in other sectors and projects to support the achievement of superior performance and increased profitability through the structured collaboration of the supply chain.

The WIN-WIN” Model

The basic “WIN-WIN” model is derived from the offshore oil industry. It is presently being used by the “Britannia Topside” project. It is widely used in the USA, and there are indications that it has been adopted in some long-term construction partnerships in the UK. The model is also mentioned in CIRIA’s “Win-Win” report. (CPN, 1995)

The scheme is specifically intended for use in a private, commercial collaborative context. Its basic principles are the following:

<i>What aspects of project performance are be considered in the incentive scheme</i>	Cost, time, operational efficiency, value for the client, safety
<i>What are the main priorities ticked in the incentive scheme?</i>	Cost, culture change, and training
<i>How is the TLC dimension taken into account?</i>	Trade off between any of the following components of TLC and take only capital cost into account: Acquisition running cost maintenance energy residual value replacement
<i>How are rewards and benefits shared?</i>	Negotiated percentage of sharing of financial savings, joint development of innovative practices
<i>What elements of capital cost is incentivised?</i>	Risk, management efficiency savings, design savings, programme savings, productivity savings
<i>On what basis is the business case (“reference cost”) established?</i>	Market survey, client’s historical data.
<i>At what stage was the target cost agreed?</i>	Before the beginning of the project.
<i>How was the target cost arrived at? .</i>	Target cost derived on the basis of market considerations.
<i>How is risk taken into account?</i>	Shared risk: reimbursement within set limits.
<i>How many tiers of the supply chain are be involved in the scheme?</i>	First and second tier (main contractor and key players in the supply chain, at each cluster level).

<i>How would disputes be resolved?</i>	Senior management only.
<i>What kind of rewards are used as incentives?</i>	Future business with same or other clients, commercial advantage from innovation, improvement in corporate image, financial.
<i>When are rewards made available?</i>	After the conclusion when targets have been confirmed.

The “WIN-WIN” model defines the following process for setting targets and incentives:

- Do homework: derive business case information on the basis of market survey
- Agree estimated TLC target cost (in NPV) for the project at the outset
- Reimburse construction specific net costs regardless of actual performance
- Set limits to the costs to be reimbursed
- Attack estimated TLC and minimise it
- Establish auditing procedures and open book procedures
- If performance equals the agreed performance standard, then the contractor earns “normal” profit margin
- If performance achieves reduction in estimated TLC, then savings are shared between the parties (same logic applies with time completion)
- Work and normal profit is reimbursed when finished. Incentives, if any, are paid at the end of the project.

The NASA Model

The following model was developed by NASA in the 1960s.

On completion of the concept phase, the contractor produces a network to show all of the activities and the relationships between them. For each activity a 3-point estimate is made (base, average and maximum likely) of time and cost.

These data are used to generate the base, average and maximum likely out turn (capital) cost, using a Monte Carlo simulation or other sophisticated risk management tool.

The employer and contractor share any savings made below the MLRE and a share line is agreed between them. It is possible to agree a different share line for savings made above or below the ARE. But any costs above the MLRE are borne by the contractor.

The employer reimburses the contractor’s actual costs on an open book basis plus an agreed profit. Any incentive payment is paid on completion.

The basic principles are the following:

<i>What aspects of project performance are be considered in the incentive scheme?</i>	Cost, time, productivity, value for the client
<i>What are the main priorities ticked in the incentive scheme?</i>	Value for the client, cost, operational efficiency, productivity
<i>How is the TLC dimension taken into account?</i>	Trade off between the following components of TLC and take only capital cost into account: Acquisition running cost maintenance energy replacement residual value
<i>How are rewards and benefits shared?</i>	Future work, sharing of some but not all financial aspects.
<i>What elements of capital cost is incentivised?</i>	Risk, management efficiency savings and productivity savings
<i>On what basis is the business case ("reference cost") established?</i>	Client's or contractor's historical data, project specific costs + risk
<i>At what stage was the target cost agreed?</i>	Target cost = reference cost
<i>How was the target cost arrived at?</i>	Target cost derived computing risk
<i>At what stage is the target cost agreed?</i>	At the end of the concept design
<i>How is risk taken into account?</i>	Shared risk: reimbursement within set limits
<i>How many tiers of the supply chain are be involved in the scheme?</i>	First and second tier (main contractor and key players in the supply chain, e.g. cluster leaders)
<i>How would disputes be resolved?</i>	Covered by the contract
<i>What kind of rewards are used as incentives?</i>	Future business with same client, commercial advantages from public, retention (% paid at milestones for subcontractors)
<i>When are rewards made available?</i>	After the conclusion when targets have been confirmed

5. SOME FURTHER RESOURCES

Further accessible information on incentive approaches and models can be found in the following documents:

Ashley, D. B. and Workman, BW. (1986) "Incentives in Construction Contracts". Austin (TX): CII, SD 8.

Construction Productivity Network (1996) 'Incentive Based Contracts for win-win Solutions?', *Notes of afternoon workshop jointly sponsored by ECI & CPN on 16 July*. WR 96. 14L, London, CIRIA.

DEFCON (1979), "Incentive (Target Cost) Contracting", DEFCON Guide, No. 5;

Collaborating for the Built Environment (Be) – www.beonline.co.uk

Be is an independent body formed from a merger of the Reading Construction Forum and the Design Build Foundation in 2002. Its 100 member organisations come from the demand and supply chains of the 'industry formerly known as construction', ranging from public sector and private sector clients and developers to contractors, designers, consultants, specialists and suppliers. It leads research and implementation activities in support of a vision of delivering integrated built environment solutions through collaborative working.

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Collaborative Working Centre – www.collaborativeworking.co.uk

The Collaborative Working Centre of Be is a not-for-profit organisation set up from members of the team that facilitated *Building Down Barriers* to provide consultancy, training and other continuous improvement services to support the development and implementation of collaborative working.

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