PROBLEMS OF LARGER LOCAL CONTRACTORS: CAUSES AND POSSIBLE REMEDIES

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Abstract
The paper examines the problems faced by contractors in developing countries, discusses their causes and some possible remedies. It covers shortages of operative and management manpower, material shortages, plant and finance, as well as some problems of management of the firm. It reaches the conclusion that the time is ripe for TG29 to produce some simple 'How To Do it' manuals on measures which would be helpful and have wide applicability.

Keywords: Contractors, Finance, Management, Manpower, Materials, Plant

Introduction
Over the last ten years and longer I have talked to or more formally, interviewed many contractors in countries whose construction industries are underdeveloped. Some of these are in countries that suffer from long-term low income and lack of development; others are in former planned economies where the industries are in some cases in a worse plight than those in countries normally regarded as developing. Gross National Income per capita in some of the republics of the former Soviet Union, especially those in Asia, is considerably lower than that in the countries of East Africa, though on a purchasing power parity basis the differences between them narrow (World Bank, 1999). These former planned economies should not be forgotten when discussing underdevelopment (Hillebrandt, 1997). The causes of the problems are very different, but the problems are often similar and some of the remedies may be the same. I cannot quote many publications as the basis of this paper because much of the data was back-up for reports to clients, often international aid agencies, who required the information for their own use. This paper must therefore be regarded as a 'think-piece' based on personal experience and presenting the problems as seen by contractors themselves.

I shall consider the needs of contractors in terms of resources and functions. Conveniently, these arrange themselves as the five Ms: Manpower, Materials, Machinery, Money and Management. I shall deal mainly with the totality of the firm, rather than projects or sites, but as the firm is concerned with the latter, some overlap is inevitable. I shall concentrate on medium sized firms, which may be amongst the largest in any one country.

I envisage as medium-sized, a firm where there is at least one person who is concerned in his day-to-day activities with managing the total firm rather than controlling site operations, although he, or they may sometimes visit sites. At the conclusion of each section I discuss possible action by firms, or by some government or industry body to improve the situation. It may be that some of the conclusions are relevant to the very small firms but, that needs to be considered as a separate matter elsewhere.

Manpower

A wide range of persons are employed in the construction industry from unskilled labourers to top management and including clerks and administrators not specific to construction. Here I concentrate on site operatives and all management grades as those are the personnel most discussed by the contractors.

In many developing countries there are some problems with the supply of operatives. There seems, however, to be little consistency as to the nature of the problem. To some extent, the traditional system of craftsmanship being passed down from father to son still operates, but the supply may not be adequate for present needs and in many countries, the system is breaking down.

There was a major problem in Egypt, especially during the boom in construction in the Middle East, that skilled craftsmen went to work abroad, thus depleting the supply of skilled operatives for domestic work. This situation was exacerbated by regulations as to the maximum wages that the public sector contractors were permitted to pay. The private sector could often attract the best skilled labour (although almost all other differences between the two sectors favoured the public contractors). Restrictions on the wages and salaries paid by public sector companies occur elsewhere, for example in Ghana and Tanzania (Ofori, 1991)

Another difficulty is that the skills available may be only the traditional ones so that the supply and quality of say electricians, service engineers and operators and maintainers of equipment may be inadequate. In countries of the former Soviet Union the situation is reversed. Because it had been policy for decades to build large reinforced concrete buildings, the skills which have been largely lost are the traditional craft skills such as bricklayers and plasterers.

A survey has recently been undertaken in Sri Lanka on the state of the labour market (Gunawardena and Jayawardane, 1997) and this indicates that there is no general shortage of operatives as most trades were under utilised over 60% of the time. However machine operators and mechanics were employed for a high percentage of their time. In part this discrepancy is thought to be related to the method of employment, with an increasing amount of labour-only subcontracting for most trades, but with operators and mechanics usually employed on a permanent or contract basis. It is probable that one of the reasons for the different method of employment is a shortage of good mechanical personnel.

It is difficult for the contractors themselves to have much impact on the quality or quantity of operatives, although training on the job will take place to some extent. A major problem in all countries is that labour subcontracting makes company training schemes impractical. Consequently, some other organisation has to assume responsibility for training. Wherever organisations for development of the construction industry have been set up, one of their main remits has been training, for example in Singapore (Ofori,1991; 1994), Tanzania (Msita, 1998), Sri Lanka (Abayesekera and de Zylva, 1997). It is however clear from the above that the problems of different countries, their causes and hence remedies are very varied.
The Sri Lankan approach (Gunawardena and Jayawardena, 1997; Wijeyesekara, 1997) to find out about the labour market is a good model for consideration by others so that training can be concentrated on skills which are most urgently required.

Contractors generally complain that they have problems with recruiting management staff of the desirable quality in the right quantities. There are several types of shortage. First there may be a shortage of technically qualified engineers or technicians. In Tanzania in the 1980s one of the reasons why DANIDA (the Danish Aid Agency) could not hand over the operation of a cement works to Tanzanians was that they could not recruit sufficient young engineers to give them any choice as to whom they should select to become section heads to replace the Danish engineers. Other countries such as Sri Lanka, have a reasonably good supply of engineers although contractors listed a whole lot of improvements they would like to see. A major complaint which is heard in nearly all countries is that technically qualified persons do not have a sufficient knowledge of management. This is a particular problem in the former Soviet Union because although engineers are well educated and may be knowledgeable about site management, as senior managers, they have to learn everything about how to run a firm in a market economy.

As in the case of operatives, many of the measures to rectify this situation are best undertaken by construction industry organisations, which may initially be supported by government, including the construction industry development organisations as set up in Singapore, Tanzania and being developed in South Africa. Construction management training is a generally accepted priority (Miles, 1998)

Materials
In many developing countries there are problems with some materials. There are several reasons for this:

- A general shift from the use of indigenous materials, fairly easily produced, for example, bricks, to those requiring a more capital intensive process, such as cement, or to those that must be imported, for example curtain walling.
- An upward shift in the quality required, particularly in the former Soviet Union;
- A balance of payment and/or a hard currency problem which makes imports of materials and plant to manufacture them expensive, impossible to obtain or subject to long delivery times;
- Unrest in the country which disrupts production and/or transport, for example, the Sri- Lankan cement industry, especially in the early 1990s;

- Allocation or control systems which may worsen the situation for some contractors because they are not in the favoured categories and can cause long delays in the allocation process, for example, Egypt in the 1980s.

Nearly all the above problems are outside the control and often outside the influence of contractors. Most of them depend on improvements in the economy. The situation is complicated by the diversity of client types and hence the influence that national organisations can have on their actions. At one end of the spectrum are purely local private clients and at the other end International Aid Organisations with work normally carried out by large international contractors.
In between are the government, expatriate manufacturing or commercial organisations and combinations of these various types. Nevertheless, there are some ways in which problems in material supply might be reduced.

Governments, in planning their construction programmes, should assess the real inputs likely to be required and identify the action necessary to ensure that there is a reasonable balance between requirements and availability. Some countries have tried to do this, but there have, as yet, been no spectacular successes. However, methods of assessment and the type of data that are available should enable an assessment to be made (Hillebrandt and Meikle, 1985 and Meikle and Hillebrandt, 1988). If the resources are not adequate, ways of creating a balance must be examined in terms of finding a way to increase the supply of resources; change the technology used to match existing resources to demand or reduce demand. In the short term, changing technology is the most attractive and the least painful.

If the problem is mainly shortage of foreign exchange to buy imports, clients or their designer/surveying team could be required to submit statements of inputs required from abroad and their estimated cost. If the project is funded from abroad, either as part of an aid package or as foreign direct investment, the foreign currency is likely to be available. If however the foreign exchange would have to be provided from the general national pool, it might be worth exploring whether, perhaps through the planning system, permission to proceed might be granted only below a certain import threshold.

Where there is a shortage of materials, either because of a real shortage or deficiencies in the distribution system, a black market invariably develops. It is indeed often the only way that construction can continue. Society is, in effect paying the black marketeers to establish a distribution system to supplement the inadequate official one. Contractors can often keep their sites in production by buying on the black market and, when the official allocation comes through, selling those materials back to the black market. Government must be wary about stopping the operation of such a system. It will disappear when it is no longer needed.

Machinery
I am using the heading of machinery to include all plant and tools used by the construction industry. There has been a general shift towards the use of more plant and machinery. This is inevitable with the move towards modern higher building.

It is argued elsewhere that this should, in certain circumstances and for certain types of construction, be discouraged for the long-run health of the economy (Hillebrandt, forthcoming) but the long term trend will continue.

Many contractors complain that they have inadequate plant and machinery and indeed often this is the case. In many instances, however, it is not so much the absence of plant which is the problem but shortage of spares, which often have to be imported, and lack of good mechanics and capable plant operators. The reasons for shortage of both plant and of spares are basically the same as for materials. The consequences of the shortage of spares are in some ways worse than those of the shortage of plant itself because capital has been locked up in the purchase of the plant and if that cannot be used, the capital is being wasted.

In some instances, the existing plant is not being properly used. A large local contractor in Egypt who had a substantial plant holding, managed by a plant manager whose job was to provide a service to sites, seemed always lacking the necessary plant for his sites. He converted the plant during the time it was on site. The site agents, finding they had to pay, returned the plant to the depot as soon as it was no longer in use. As a result, not only did the contractor find he had adequate plant, but he was able to hire some out to other contractors.

In countries where there is a shortage of plant (and even where there is no shortage) it is generally beneficial to set up plant hire organisations so that as little plant as possible is lying idle.

There are some ways in which, even with acute shortage of foreign exchange, a construction industry organisation can assist. First, it can persuade contractors to standardise on the makes of plant so that a merchant specialising in the supply of spares is able to hold stocks, knowing that he will be able to sell them. If there are plant hire organisations, they may hold spares but, in any case, standardisation of makes is likely to be greater. A difficulty is that the make of plant held may not depend on the decision of the local contractor or hire organisation because it is often purchased second hand from foreign contractors who have been working in the country.

The problem of the supply of mechanics and plant operators has already been discussed above under "Manpower."

Money

Money, or rather lack of it is probably the most discussed problem of contractors in developing countries.

Contractors need relatively few fixed assets and have a low capital base compared with other industries. They should need relatively little working capital because the traditional contractual arrangements provide for payment as the project proceeds. However, clients often do not pay the monies due to them for work done. They may be behind with payments from the first monthly certificate to the last.

Final payment, including retention may never be paid. In some countries the problem is greater with public sector clients but in others the private sector is the worst payer.

The reason that public sector clients do not pay is usually that they do not have adequate funds available to meet all their obligations (see also Ndekugri *et al*, 1998). Reasons for lack of funds for specific projects include initial underestimation of the cost of a project. This fault may be due to inefficiency or it may be deliberate because it is easier to get the finance ministry to give approval for a cheaper project and, once it is started, it will not be stopped., Inflation may be greater than has been allowed for, especially as projects are often delayed because of shortages. The detailed implications of the failure to get paid varies greatly from one country to another.

Because contractors usually, for the reasons cited above, have very little collateral for loans, it is difficult for contractors to borrow from banks. Moreover banks do not really understand the contracting process and are unable to make an assessment of risk. They are right to be wary as, even in some developed countries, insolvencies occur more in contracting than manufacturing businesses (Hughes et al, 1998). Similarly bank guarantees are difficult to obtain and expensive.

Government must stop commissioning projects which it has not the funds to complete and/or must stop using funds allocated for a new project to pay for one already under way. Unfortunately, this poses political problems because if that happened, there would in many countries be a period when no projects were announced or started. Curiously, it would also pose problems for the construction industry because there would be a high demand for finishing trades and finishing materials and no work on foundations etc. Change would have to be gradual.

Another measure which might help is to persuade banks to establish sections specialising in the construction industry so that ignorance would not be a reason for contractors being unable to obtain loans. In Ghana a state-owned bank offered pre-financing for approved projects but the scheme suffered from too many defaults and has more or less ceased operations (Ofori, 1991). Work is ongoing by the Civil Engineering Contractors Association in Tanzania to establish a Construction Industry Development Trust Fund to alleviate problems faced by contractors in obtaining credit (Lemunge, 1998). In Sri Lanka negotiations are at an advanced stage to establish a Construction Guarantee Fund (Abeyesekera and de Zyla, 1997).

For medium and smaller contractors some advance payment, of say ten per cent helps the cash flow situation and is beneficial for the smooth running of a project. On the other hand, arrangements by which a high down payment is given have often failed because in a situation of shortage of resources it is an incentive to obtain as many projects as possible and then do as little work as possible. In this situation guarantees may be required from contractors to ensure that they do not renege on their agreement and the difficulty of obtaining such guarantees poses more problems.

Additional support services probably need to be combined with financial assistance if the system is to work. This was one of the conclusions from a study of firms in Egypt. The problem is that in a country as Sri Lanka, many of the best engineers are running the largest local contractors. Who is going to advise them?

Some contractors have found it helpful to develop links with expatriate contractors at least for the larger projects. A subsidiary advantage is that the expatriate contractors can usually obtain finance on more favorable terms.

Management

By management in this paper I mean mainly the management of construction firm. Ofori (1991) is critical of attempts to transfer management theory formulated in a developed country to a developing one. I must tread warily! But I do believe that there is a role for some of the ideas and this was confirmed when I was working in Sri Lanka in 1992.
There was a very great discrepancy between the extent to which top firms had a view of what they would like to be in the long term of strategies in the next few years to make thier 'vision' of the future achievable (Ramsay, 1989) All wanted to grow but most had not considered the implications of growth. They had not related their growth aspirations to what was likely to happen to total demand in the country as a whole and hence what it might imply for market share. Those companies which had a sound management base tended to be more conservative in their growth aspirations than those weak in management. The latter were in danger of over-fast expansion because they seemed unaware of the dangers.

It must be accepted that the environment in Sri Lanka makes any numerical planning unrealistic. Nevertheless, I believe an examination of the implications of various alternative courses of action could be beneficial.[1] At the least, an attempt to look forward highlights relationships between financial factors, the use of resources of various types and the organisation of the construction process, which may not have been appreciated for the present situation, let alone the future. Company planning is a good entry point to the management of the firm.

Although some contractors could say what size of contract they were aiming for or the type of work they wanted to do in general there were no corporate plans which attempted to examine where the companies were going over the next few years and what they should be doing now and in the intermediate years, to make their objectives possible to achieve. Almost without exception these companies were keen to explore further the methods and advantages of corporate planning.

Conclusions and Recommendations

One generalisation which may be made from the examination, from the contractors' view point, of the problems of the construction industry in developing countries is that possible solutions to many of the problems have been discussed in the literature to considerable length and that there is a good deal of agreement on appropriate courses of action.

I would suggest that various measures, which can be beneficial have wide applicability, should be publicised in a different more accessible way. This is in keeping with the objective of TG29 'to dissemination.' The format I have in mind is a series of TG29 manuals of a 'How To Do It' type each covering quite specific subjects, in simple step by step terms. Subjects would include some of the matters mentioned in this paper. Probably the most important but fairly complex one is Steps Necessary to Set up a Construction Industry Development Agency. Others include Company Planning in an Uncertain Environment; How to Assess Skill Shortages or Setting up Plant Hire Organisation. They could equally move towards other types of subject, such as, Assessing Overall Construction Output or Developing a Simple Cost Index for Construction Work. The manuals could include a bibliography. A matter for investigation is whether the publication of relevance to this whole subject area could be made available on the web. It seems to me that the subjects are endless; the expertise to write them considerable and, last but not least, it would force some clarification of the practicalities of some of the ideas.

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[1] A study in the UK in the late 1980s found that one of the few conclusions that could be drawn as to the management practices that were beneficial was that those companies who did not plan or had only just started planning generally performed less well than those with an established planning system. (Hillebrandt and Cannon, 1990)

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