



Outsourcing of professional services

by T.R. Stacey, O.K.H. Steffen, and A.J. Barrett*

Synopsis

Outsourcing of specialist and non-continuous services is common practice in international mining operations. There is an increasing trend towards this practice in South Africa as a result of the major organisational changes that have taken place in the industry, and as lower revenues and production cost pressures have reduced profit margins. Many specialist functions have been outsourced in the industry for a long time, an example being shaft sinking, which is undertaken by specialist shaft sinking contractors. In the professional services area, some activities have been outsourced, for example the design and construction supervision of tailings dams, but mining related activities such as geology, mine planning and scheduling, engineering, ventilation, and rock engineering, have traditionally been carried out by in-house staff. In this paper some of the industry problems which have led to an increase in outsourcing of professional services are considered. Then the pros and cons of outsourcing are dealt with before outlining the factors which should be taken into account in choosing an outsourcing partner.

Introduction

Activities within the mining industry cover a very broad range, including financing, planning, marketing and labour relations on the 'soft' side, and exploration, excavation, production, materials handling, processing and refining on the physical side, and the management of all of these, to name only a few of the activities. Some of these activities may be considered to be *core functions* by the industry, whereas others may be considered to be subsidiary functions. A business should retain complete control over its core functions, but may find it attractive to outsource the others. Outsourcing means the transferring of the responsibility for an area of service and its objectives and activities from management to a contractor (in the broadest sense) in terms of a contract. A clear example of an outsourced activity is that of shaft sinking. A mining operation does not have an on-going requirement for shaft sinking and therefore

cannot justify the retention, in-house, of the specialist personnel and equipment required for shaft sinking. This function is therefore almost always contracted out to specialist contractors with the experience and expertise to handle such an activity safely and efficiently. In this paper the concept of outsourcing in general is dealt with, followed by a consideration of perceived industry problems regarding professional services and the possibilities of outsourcing in this area.

Outsourcing

The concept of outsourcing has been defined in the introduction above. This could be simply the 'buying' of particular input or services on a project by project basis. However, with regard to professional services, the concept is better considered as 'partnering' which is a common approach in the contract mining area in other parts of the world. Partnering has been defined by Elliott (1996) as 'a commitment between two or more strategically linked organizations working together to maximize their effectiveness and reduce the total cost of their shared process'. To work successfully this implies a long-term relationship, and a high level of interdependence, between the 'client' and the external provider, who effectively becomes a partner to the client. In some cases, external providers accept responsibility for the assets and people seeking their services. The classic reasons for outsourcing (De Rose and Mc Laughlin, 1995) are:

- ▶ cost reduction—external providers with many customers in a variety of operations can be more effective than internal service departments

* SRK Consulting, P.O. Box 55291, Northlands 2116.

© The South African Institute of Mining and Metallurgy, 1999. SA ISSN 0038-223X/3.00 + 0.00. First presented at the SAIMM Symposium: Leaner and Smarter outsourcing in the mining industry. Feb. 1999.

Outsourcing of professional services

- ▶ adding expertise—outsourcing provides the client with partners who have proven records of performance usually in a much broader area of experience
- ▶ comprehensive services—external providers can usually offer a range of related activities
- ▶ continuous improvement—external providers are up to date on the latest developments in their specialist technology areas
- ▶ to sharpen the strategic focus—the mine is able to focus its internal resources on its core business.

In assessing which services to outsource, client organizations must decide which of their activities are their *core competencies*. Should mining companies have divisions which, for example, maintain mining vehicles and equipment, develop computer software, provide catering services, operate a hospital, maintain and manage property, operate and maintain aircraft, etc.? To assist in defining core competencies, some questions which mine management should ask and which may provide relevant answers are:

- ▶ what do we do better than anyone else?
- ▶ what do we do so well that we could sell our products or services on the open market?
- ▶ where do we achieve 'best in class' status?
- ▶ where are we not adding significant value to the production process?

Hamel and Prahalad (1994) indicate that what might be a core competency in one decade may be a mere capability in the next. In answering the above questions therefore, it is vital that the context is that of the future decade rather than the present decade. For the mining industry, it is suggested that there are perhaps *only two core competencies* required—financing and managing. All other activities could be outsourced. For example, a mining company could make use of the best exploration company, the best mine planning company, the best shaft sinking company, the best contract mining company, the best process design company, the best process and reduction plant operating company, etc., all in terms of contracts. All activities could be carried out by the 'best in class' operators. The mining company's function would then be to *finance* the operation and *manage* the contractors. It should be noted that this process is almost exclusively used in the civil engineering industry, where the client appoints a professional team to undertake the planning and design, from the conceptual stage through to completion, and to supervise construction of the project, which construction is carried out by a civil engineering contractor.

Outsourcing in the mining industry has become a major corporate trend internationally. Examples of outsourcing at several mines in Australia are given by Hills (1996). It is now more common in the South African mining industry where a range of functions has been outsourced by several companies for some time. These functions include:

- ▶ mine planning services, particularly for smaller mining companies
- ▶ tailings dam design and operation
- ▶ shaft sinking and underground development
- ▶ tunnel support installation, and stope support installation and management

- ▶ various aspects of environmental management and design
- ▶ mining and backfilling operations (contract mining).

In evaluating the outsourcing of professional services in particular, mining companies must consider very carefully the nature of the dependency and the long-term competitive implications that will result.

Perceived industry problems regarding professional services

Over the past decade, several new problems and new issues have arisen for South African mining companies. These include:

- ▶ cost increases, which far exceed the corresponding revenue increases. This has led to a review of the traditional head office functions, and the implementation of sweeping changes, in most of the mining houses. In this regard it is relevant and interesting to quote from an article concerning the revival of the copper industry in the United States (Zaburunov, 1990):

'A mine foreman best summed up the cause of the remarkable turn-around of the copper industry. "No, what caused the turn-around in the copper industry was not the rapid rise of copper prices to \$1.55 per pound. What caused the copper industry to turn-around was the price of copper falling to 55 cents per pound".'

A copper executive echoed these sentiments. 'Copper is cyclical. It always will be. The low prices forced the copper industry to look at issues they wouldn't have normally considered.'

- ▶ Difficulties in retaining specialist staff for service functions in an industry which is currently production/management driven
- ▶ Reducing new investment in the local market and increasing investment in foreign markets
- ▶ Safety is receiving increasing emphasis as a result of the Mine Health and Safety Act.

The relevance of these changes to the provision of professional services on the mines are as follows:

- ▶ where head office functions have been changed, the senior technical support which was previously available from head office may no longer be available. Perhaps more importantly, the solutions to reducing mining costs, which may lie in innovative solutions to technical problems, may also no longer be available internally
- ▶ staff retention in service disciplines is more difficult in an industry where management- or production-focused mining engineers are perceived to have more prestigious career opportunities
- ▶ mining geometries in foreign operations are often quite different from the typical South African mining geometries. For example, there is generally limited experience of massive or near surface ore bodies in the South African gold mining industry.
- ▶ with the increasing public profile of safety, health and environmental issues, the importance of these areas in mining is increasing.

Outsourcing of professional services

Are professional services appropriate for outsourcing?

The key question here is whether professional services are core competencies for mining companies. Do professional services give rise to strategic advantage over other companies in the industry?

The authors believe that, in general, professional services are not a core competency of mining companies. As suggested above, core competencies in the mining industry include the financing and management of mining operations. Generally, most other activities can be outsourced.

Obviously, the question will need to be posed at individual operations and the answers may not be the same in each case. However, it is interesting to note that, with regard to rock engineering services in Canada, a review of 65 hard rock mines (Anon., 1986) indicated the following data:

- ▶ about a third of the mines had a rock mechanics department with at least one full-time engineer
- ▶ about a third of the mines had an engineer who spent at least some of his time on rock mechanics issues
- ▶ the remaining third had no engineer specifically responsible for rock mechanics.

In the first two-thirds about 70% of the mines made extensive use of independent external rock mechanics consultants.

Benefits of outsourcing professional services

Benefits of outsourcing of professional services could include the following:

- ▶ innovation—an appropriate external provider will have experience of 'world best practice' and should be in a position to bring a fresh look to the specific problems. An interesting example of innovation is the management of rapid yielding prop utilization. Prop utilization has traditionally been managed by rock mechanics personnel on the mines. It is considered worthwhile quoting from a recent publication dealing with outsourcing of this function (Anon., 1995):

'Hydraulic prop utilization is currently running at 25 per cent or less. This means that for every prop installed, the mine must keep three in reserve. An estimated 33 per cent of installed props are lost each year and on some mines this figure is higher. Labour productivity, too, is far from what it should be, achieving only 10 to 20 props installed per person per month...

'By using Stopetek, mines only pay for the props installed and this could save them up to R250 per installed prop per month...

'As a result, Stopetek's asset utilization is far better than that achieved by the mines with a utilization three times higher. Lost props are kept to a minimum. "If we lose 20 out of a 1000 a year, that is a lot. In addition, our labour productivity is more than double that achieved by the mines."...

'The savings that we could have achieved for the mines to date could equate to an industry-wide saving of approximately R250 million per annum'.

This example illustrates very clearly the difference regarding core competencies—prop utilization is not a core competency of the mining company, nor even of the mine itself, but it is a core competency of the prop utilization company.

- ▶ Quality—an external provider will generally have in-house quality control systems, and could well also provide international status and acceptability
- ▶ Independence—external providers are independent of mine management and may therefore be more credible to unions for example. Professional companies usually work according to specified or recognised codes of ethics and are answerable to the professional bodies to which they are affiliated
- ▶ Reduced overheads—external input is only paid for when it is required;
- ▶ Choice—if an external provider does not meet agreed performance criteria, the mine may change to an alternative provider
- ▶ Continuity—in a long-term 'partnering' relationship, knowledge and records are accumulated which are invaluable to the operation. The continuity tends to be better with an external provider, whose filing and archiving systems are geared to storage and retrieval of long-term information. An example of this from the authors' own company is that of an open pit operation. The company has been involved with this mining operation for more than 25 years during which period many mine management and on-mine geotechnical personnel have come and gone.

The benefits of outsourcing of professional services are not as easily quantified as in the contracting example above, in which a direct cost saving can be attributed to the activity.

An example of appropriate outsourcing is that of due diligence studies. In such studies independence is often a requirement, which means that the mining company cannot carry out the work internally. Further, for technical due diligence investigations, all the technical aspects of the operation are considered to identify potential fatal flaws, or issues that will have a material influence on the operation. Since a mining operation consists of a number of processes, which vary in importance depending on the type of mine and mineral being mined, to carry out the necessary investigations, a large team of specialists is often required, and specialist consultants are more likely to be able to provide and coordinate such a team.

Disadvantages of outsourcing professional services

Mining companies may perceive several problems with outsourcing which may include some of the following:

- ▶ availability—the external provider is not available full time and may be committed to other clients when required at short notice
- ▶ confidentiality—the external provider will probably need to keep some of the mine's records off-site, and will in all likelihood also be working for competitors of the mine

Outsourcing of professional services

- cost—the mine may perceive that unit costs for the external provider are high
- perceived lack of accountability and commitment—the mine may feel more vulnerable when using external providers who do not share the risks of the mine.

These and other concerns must be addressed in the outsourcing contract. This aspect is dealt with in more detail in the next section.

Choice of an outsourcing partner

The following factors should be borne in mind when selecting an outsourcing partner:

- shared values—the external provider needs to understand the value system of the mining company and how to behave in the context of the mine's culture
- reputation—the external provider should be known for the quality of its services, as well as its ability to deliver these in accordance with requirements. With the increased globalization of the South African mining industry, international reputation may be necessary
- financial stability—the external provider must be stable as the mine will become vulnerable to its demise
- experience—the external provider should have a track record in the delivery of the required services
- systems—the external provider needs to have adequate internal systems to ensure that it provides consistent, effective and efficient performance
- human resources policies and procedures—the external provider needs to be able to recruit, train and retain staff, and have access to specialists internationally and retain staff in order to be able to deliver services in a consistent manner over a long period of time.

The outsourcing contract needs careful thought. The relationship is ideally not a short-term relationship and the contract needs to ensure that both parties deliver according to the required criteria. The outsourcer will be vulnerable to poor performance by the external provider, and likewise the external provider needs to be protected against mine management issues which would cause it to deliver inefficiently or at excessive cost.

The outsourcing partnership should be reviewed regularly. Effective outsourcing arrangements tie success to the mine's strategic plans. The relevant objectives in this regard need to be clearly spelt out at the beginning of the contract, reviewed periodically and updated if necessary.

The partnership should be a living/growing entity. As new roles and needs surface, the partnering relationship should be reviewed to accommodate these.

In order to commence with outsourcing, the starting point is ideally a scoping study which defines the nature and extent of the services to be outsourced, and the means of achieving these. For example, is the external provider required to employ existing professional staff from the mine, and perhaps take over computer equipment and software? Alternatively, is the external provider only required to provide specified personnel for defined tasks, with contingencies for extraordinary events or circumstances? These

criteria are carefully identified and evaluated, and then a Request for Proposal (RFP) is prepared. The RFP is then sent to candidate external providers who have been identified for the specific outsourcing task.

In evaluating the RFP, a critical aspect for the mine to consider is the management of the outsourcing contract.

This will include the following aspects:

- the outsourcing goals and how these are to be measured. Short, medium and long-term goals need to be considered;
- reporting requirements—what does the external provider need to tell the mine and how often?
- feedback mechanisms—what does the mine have to tell the external provider and how often?
- review mechanisms—how does the mine need the external provider to participate in its strategic review process? How does the mine wish to incorporate strategy changes in the outsourcing contract?

Conclusions

The concept of outsourcing of professional services has been dealt with in this paper. Outsourcing of many construction and excavation activities in the mining industry has been practised in South Africa for many years. Outsourcing of professional services has not been as widely practised in South Africa, though it is common in other countries. It is expected that it will become more common in South Africa owing to pressures on the mining industry. Advantages and disadvantages of outsourcing professional services have been outlined, and approaches to the choice of an outsourcing partner considered.

References

- ANON. *Improving ground stability and mine rescue: The report of the Provincial Inquiry into Ground Control and Emergency Preparedness in Ontario Mines*, Ontario Government Bookstore, 1986, 108 p.
- ANON. Prop utilization management system, *Mining World*, November 1995, pp. 24–25.
- DE ROSE, G.J. and McLAUGHLIN, J. Outsourcing through partnerships, *Training and Development*, vol. 49, no. 10, 1995.
- ELLIOTT, G. Partnering and strategic alliances, *Proc. Contract Operators' Conference* Kalgoorlie, Western Australia, 28–29 October, The AusIMM, 1996. 16 p.
- HAMEL, G. and PRAHALAD, C.K. *Competing for the future*, Harvard Business School Press, 1994.
- HILLS, A. Use of contractors at Placer Dome, *Proc. Contract Operators' Conference* Kalgoorlie, Western Australia, 28–29 October, The AusIMM, 1996, 9 p.
- MCCARTHY, P.L. Providing technical and consulting services, *Proc. Contract Operators' Conference*, Kalgoorlie, Western Australia, 28–29 October, The AusIMM, 1996. 11 p.
- ZABURUNOV, S.A. Copper comes back—Phoenix (and Tucson) arise from the ashes, *E.&M.J.* January, 1990. pp. C11–C13. ◆