The Causes of Major Outsourcing Failures

Many organisations are guilty of sub-optimal strategies because they do not understand the potential pitfalls of outsourcing

Managers are faced with an avalanche of advice about what they should do to be successful. The academic and consulting management literature is replete with articles and books that provide guides to success, with many case studies explaining why a particular individual or company was successful and what practitioners must do to emulate it in their own organisations.

This is not surprising, because practitioners are keen to find shortcuts and are desperate to emulate those who have been successful.

Outsourcing is no different, as it has become something of a dominant approach as organisations seek ways of improving competitive advantage and bottom-line performance.

There are, however, problems with this approach.

- First, practitoners copying what others have done can be dangerous if the emulator is not operating in exactly the same circumstances as the originator.
- Second, a little knowledge can be dangerous. A cursory perusal may allow an emulator to understand in general what the originator did, but not fully to appreciate what was required to put it into practice successfully.

Given that emulators often fail to achieve the same success as originators, it is somewhat surprising that managers do not spend more time trying to understand why. Even more so because, from an early age, human beings do not normally learn by being told what is the correct thing to do. In fact, most of us learn from experience – that is, from making mistakes.

Most of the outsourcing decisions that IIAPS staff have analysed over the last two decades have been failures rather than successes.

By understanding what goes wrong strategically and tactically in outsourcing decisions, practitioners will be in a much better position to understand how to be successful. This is a radically different approach to the normal advice that practitioners receive.

Strategic Pitfalls of Outsourcing

The most common difficulties experienced by organisations that outsource are those that occur pre-contractually and those that occur post-contractually.

The first pitfall, **pre-contractual adverse selection**, sees practitioners failing to understand the questions they should address pre-contractually about achieving value for money from insourcing or outsourcing. As a result, practitioners make sub-optimal decisions about insourcing based on short-term financial considerations that results in the loss of critical assets to the supply market.

The second pitfall occurs after the decision has been made to outsource and sub-optimal suppliers are selected to manage the outsourced operations. **Post-contractual Lock-in** (or moral hazard) is a fairly common problem in outsourcing in which practitioners fail to create effective contractual safeguards pre-contractually and find themselves highly dependent on opportunistic suppliers post-contractually.

The four key **major outsourcing failures** we have identified are:

Pre-Contractual

1. Outsourcing strategically critical assets
2. Retaining tactically non-critical assets in-house

Post-Contractual

3. Failing to understand post-contractual “moral hazard” and lock-in
4. Inappropriate post-contractual relationship management

Each of these generic problems is briefly outlined below, with case studies to provide empirical evidence of the errors that organisations make on a fairly regular basis.

Outsourcing Strategically Critical Assets

One of the key requirements of all organisations operationally is that they have a robust and rigorous make-buy framework to guide insourcing and outsourcing decisions.

This means that an organisation has a way of thinking about the resources (or assets) that it must own to allow it to operate its business successfully at a strategic level.

A private company, for example, must understand which of the resources, within any and all of its operational supply chains, are of critical importance to its competitive positioning vis-a-vis its actual or potential competitors now and in the future.

Competitive positioning implies owning those resources, tangible and intangible skills and capabilities, which allow an organisation to meet its customers' requirements, and its own strategic goals, effectively.

For a private firm this will normally be a financial goal (associated with some acceptable level of sustainable profitability), which forces it to seek resources that provide competitive advantage.

For public organisations, however, the make-buy criteria may only be partially financial (associated with value for money) because their strategic goals are combined with broader social or political goals.

When public and private organisations think about make-buy decisions, it is critical that they understand their differing strategic goals, since this will have an impact on what should be insourced and outsourced.

When private companies think about make-buy, they have to recognise that what is critical in one industry or supply chain may not be critical to strategic success in another. Similarly, in the public sector, it follows that what may be critical for one organisation may not be critical for another.

Despite this complexity of choice for any particular organisation, the general approach to make-buy decision-making within public and private-sector organisations should always be the same.

Practitioners have to decide which supply chain resources are critical assets (those that should be insourced) and which are non-critical assets (those that can be safely outsourced) given their overall strategic goals.

To say this is easy enough, but the operational problem for many organisations is to understand that make-buy decision-making is an iterative process.

In other words, practitioners have to understand that circumstances can change over time. What may be perceived as strategically critical today may not be so in the future; likewise, that which is currently only tactically non-critical may become of strategic importance in the future.

The PC Case

The history of make-buy decision-making in the IT industry is an excellent example of how companies can make serious mistakes strategically when outsourcing.

When IBM decided to outsource its PC operating system and its microprocessor to Microsoft and Intel respectively in the 1980s it was not initially obvious that it had, in fact, outsourced the two strategically critical assets in the PC supply chain.

With hindsight it is clear that the two most financially valuable resources have been the operating system and the microprocessor. The ownership of these two supply chain resources has allowed Microsoft and Intel to make consistently above normal (ie, double-digit) returns.

IBM, on the other hand, failed to make any significant returns from the design and manufacture of PCs, and was forced to sell this strategically non-performing business unit to a Chinese company.

What is perhaps not well understood about this case is that when the decision to outsource was made, IBM was already a world-leader in software development and was concurrently developing its own operating system, OS2.

At the same time, IBM also owned something like 40% of Intel's stock, which it then sold, allowing Intel to be the single-source provider of the microprocessors for its PCs.

Two better examples of a failure to understand the need to insource because of the strategic importance of particular supply chain resources could not be found.

IBM also made similar errors with two other in-house supply chain resources. It was German IBM staff that originally developed the ideas for enterprise resource planning systems. This was, however, seen within IBM as non-strategic, which eventually led to the creation of SAP by former IBM staff.

The company also sold off all of its internal router business to Cisco Systems, rather than compete, and is now a major provider of after-sales service support for Cisco equipment.

Clearly, companies that make errors in understanding which assets are critical and of strategic importance are likely to suffer serious financial consequences. In 1992 and 1993 (prior to the Enron and WorldCom fiascos), IBM recorded the two of the highest annual corporate losses in the USA.

The Call Centres Case

Outsourcing call centres has been something of a fad recently. Examples of this practice abound, even in the public sector. While there are often very sound reasons financially (especially in terms of lower bottom-line operating costs) for call centre outsourcing, it is still the case that this may also be a serious error for some, if not all, organisations.

Clearly, while it may matter less to publlic sector organisations whether or not customers are dissatisfied with the service they receive because they have few alternatives, this may be less true for private sector companies operating in highly contested markets.

It is interesting to note that even though there has been a relative exodus of call centres to lower-cost developing countries, there is also evidence that not all companies see this as sensible. Dell, for example, brought back some aspects of call centre work from India to the US because of complaints from its US customers.

Similarly, a Swedish electrical company outsourced to India but all of its call centre facilities are still owned, with Swedish graduates working in them on short-term contracts. Why?

The company understands that it must own the facilities and control them in India, while seeking to obtain lower costs of operation, but not by outsourcing the customer interface which it regards as critical to its competitive positioning and retains internally.

This demonstrates that sometimes it is safe to outsource call centres completely, but sometimes it is not and these supply chain resources may remain a critical asset. The lesson is that unthinkingly copying what others are doing can be a dangerous game.

The Retail Case

In the retail sector the importance of brands is well understood so it is somewhat surprising to find organisations that do not fully understand the need to protect the value of their brands.

A major multinational confectionary company in the 1990s decided that it could outsource some of its brands, which were old fashioned and had been around for a very long-time. These were perceived to be of less strategic importance to the business than other newer and currently more successful brands.

At that time the senior management team believed that the success of the new brands in emerging markets (where more profits could be made) would obviate the need to retain the older more traditional brands, which were under-performing relative to the newer brands.

The brands were outsourced to a management buy-out team from within the company, who were allowed to acquire the brands and operate them under license for a ten-year period. The selling company had the contractual right to buy back the brands at the end of the ten-year period or allow the acquirer to own the brands outright for an agreed figure.

Ten years after the event this outsourcing decision appeared to be a serious mistake for the selling company, primarily because of two factors.

First, during the 1990s the growth of the new brands had been highly successful until the downturn in global (especially emerging) markets after the end of the technology boom, and also due to a shift in preferences against western products in many Islamic countries in which this company had stacked its future.

Second, in the early 2000s the relative value of the old fashioned brands was much more valuable than the innovative brands and the company was experiencing a serious decline in profitability. This ensured that the outsourcing company now wished to take back the formally outsourced brands to bolster its own profitability.

Unfortunately this was not that easy. The primary reason for this was that, although they had the contractual right to buy back the brands, when they had outsourced they had only focused on the price that they would exact from their licensees if they decided to sell the brands outright to them.

The outsourcing company now faced the problem that they had not specified the price they would have to pay to the licensee if they opted to retain the brands.

Unfortunately, the brands were now understood by both sides to be critical assets and the licensee was only prepared to give up the brands for a ransom price.

It is clear in this case that the outsourcing company initially took only a short-term view of business relationships when they made the original outsourcing decision—a decision that was dictated primarily by how much money could be obtained.

No real thought was given to how the balance of power between the buyer and supplier might change overtime. This was a failure of foreseeable foresight and demonstrated a complete lack of understanding of the risks in outsourcing critical assets as circumstances change.

A robust approach based on general clause contracting in the outsourcing process would clearly have resolved these issues.

Retaining Tactically Non-Critical Assets in-House

Perhaps the most obvious error that organisations make is continuing to retain in-house non-critical supply chain assets that could be safely and cost-effectively outsourced to suppliers.

There is considerable scope for increasing the level of tactical outsourcing in organisations, because much of what is done internally only supports the critical assets that deliver strategic goals.

Many organisations still retain in-house many support activities (catering, facilities management, security, PR and marketing, R&D, product development and manufacturing) that are merely tactical. The reason they are retained in-house is normally because of historic inertia. Today, however, with many specialist service providers available, the opportunity to outsource to obtain better value for money is axiomatic.

Despite this, many organisations struggle to tackle this issue effectively because they lack a methodology to understand what is strategically and tactically important. The most effective way to think about this problem is to use the concept of value-add as developed in process improvement thinking.

When considering the value that any asset brings to an organisation it is necessary to understand to what extent any operational resource contributes to what is strategically valued. A resource, whether it is a skill or capability, can be one of three kinds:

- *Value-adding* – it contributes directly to the strategic goals of the organisation
- *Essential but non-value-adding* – it supports the value-adding goals but does not directly ensure that these goals are achieved
- *Non-value adding* – it is neither essential nor does it contribute to strategic goals

If possible, all value-adding (VA) activities must be insourced as strategically critical assets. At the other extreme, all non-value adding (NVA) activities must be removed from the organisation – in other words, neither be insourced nor outsourced.

However, it is the tactically non-critical assets, those that are essential but non-value-adding (ENVA) activities, that cause the greatest problems for make/buy decision-making.

There are two reasons for this:

- First, organisations find it very difficult to agree on which activities and resources are VA, ENVA and NVA, because individuals and functions resist being labelled as anything other than VA.
- Second, when ENVA have been isolated, and a case for outsourcing has been made, practitioners make poor sourcing decisions and fail to understand "moral hazard" and lock-in post-contractually. This is discussed in more detail in later sections.

The Mobile Phone Case

A provider of mobile phone testing equipment discovered that, like the major PC manufacturers, it was operating a business model that was not sustainable. In a fiercely contested market providing low-volume but high-value products, it was the most heavily insourced of its competitors.

Manufacturers in this market have to be able to innovate constantly to provide products that give improved functionality, for which customers will pay a price that generates very high returns. The challenge is to keep up with the pace of change.

The company in this case discovered that although it was able to provide very competent products at the cutting edge of technology it could not make the same double-digit returns as its competitors.

Analysis demonstrated that the fundamental reason for this was because it retained in-house all of the R&D, final and sub-assembly and fabrication work, plus the manufacture of key components, with only standard components and sub-components outsourced to suppliers.

After a thorough review of its supply chain using a rigorous make/buy methodology it was clear that the company could substantially reduce its operating costs by outsourcing sub-assembly and fabrication and three-quarters of the manufacture of ECAT components.

Interestingly the company did not outsource one of the four ECAT boards, or the final assembly of the product. This was because this one board, and its configuration and testing with the sub-assembled components, are the critical supply chain assets that must be insourced.

Despite this, the financial benefits to the organisation were considerable once basic tactical ENVA activities had been outsourced and all NVA activities eradicated.

Failing to Understand Post-Contractual Lock-In and 'Moral Hazard'

The third major mistake organisations make when they outsource occurs post-contractually. While errors are made related to whether assets are strategic or tactical, serious mistakes are also made even when organisations have correctly decided an asset is tactical, and that it can be safely outsourced. This is because practitioners fail to understand the different power and leverage circumstances that exist for buyers and suppliers pre- and post-contractually.

Practitioners appear to spend most of their make-buy effort focusing on whether an activity or resource is strategic or tactical and, having made this time-consuming and difficult decision, they then forget one of the key aspects of procurement and supply competence.

This is the requirement to obtain value for money both now and throughout the contractual relationship with a supplier. All too often the only major consideration for managers when outsourcing is which supplier can provide the lowest total cost of ownership for any given level of functionality relative to the current in-house provision.

Decades of work in this area has demonstrated that it is nearly always the case that, in the short term, suppliers will beat the in-house team on cost. Suppliers will typically offer substantially improved terms and conditions if the buyer is prepared to enter into long-term rather than short-term relationships, especially if these are single sourced.

Why are suppliers prepared to offer these deals, and what is the significance of them for informed buyers?

It is clear that many organisations do not understand that there are complex trade-offs to be made about how many suppliers should receive the business and over what contractual terms when outsourcing. Far too many outsourcing decisions, in my experience, demonstrate that buyers do not understand the principle of the Trojan Horse (Greeks bearing gifts).

What this means is that before practitioners decide to outsource, and right up to the moment that they decide to do so, there is a particular pre-contractual power and leverage situation between the buyer and supplier.

Unfortunately, because many practitioners do not understand post-contractual **moral hazard** (the ability to overlook how power circumstances may change over time owing to a lack of foresight on the part of the buyer) and **lock-in** (the ways in which suppliers use tangible and intangible switching costs to tie the buyer into permanent supply relationships over time), there is considerable evidence that many organisations are guilty of sub-optimal tactical outsourcing.

In other words, practitioners fail to understand that power can shift over time and that if no safeguards are put in place pre-contractually, then post-contractual costs will make switching from the incumbent to another supplier highly improbable.

A shift in power and leverage takes place in favour of the supplier relative to the buyer that should have been guarded against by the buyer. This is one of the major errors made in outsourcing decision-making, as the following examples demonstrate.

The Logistics Case

A company undertook a review of its logistical delivery system. Eighty per cent of the delivery of its goods to market was undertaken through a fleet of its own lorries, with only 20 per cent provided by a small haulage supplier. The company decided that logistics was non-core to its business and that considerable short-term cost savings could be made if it outsourced.

It chose a large single supplier and let its existing small supplier go. The new supplier offered 100% coverage at vastly improved service levels and lower cost, as well as free training for the company's procurement staff in its own proprietary software systems.

After nine months, however, the company discovered that not only could the service levels promised not be delivered, but also that performance was far worse than that achieved previously in-house and by the smaller supplier. Furthermore, the new supplier was now demanding a substantial increase in rates because of its inability to obtain competent staff at the rates agreed.

The company was over a barrel. Its revenue stream was dependent on logistical supply to outlets and its outsourced single sourced supplier (which had control of the software) now effectively controlled this operationally. This was not an easy problem for the CPO to fix quickly.

The ERP Case

A company outsourced its enterprise resource planning systems to a supplier. The company had historically developed its own software on the understanding that the ability to optimise systems and processes provided competitive advantage.

New senior management, who took a short-term view of costs and performance, decided the current software was non-core and outsourced it to one of the major suppliers in the market.

The company's view was that it would achieve best-in-class performance and substantially reduce the costs of ownership by sacking its in-house team of software designers and maintenance staff.

Unfortunately, after a short period line managers at the company noticed that the performance of the software, while superior in some respects to the previous in-house software, did not optimise all aspects of its production process as effectively.

They were keen to resolve this problem and decided to work with the supplier, on whom they were now operationally dependent. This involved considerable staff time to educate the supplier's software developers about the problems that needed to be resolved.

Despite this, the supplier retained all intellectual property rights in the new software. Not only did the company not get any revenue-sharing or cost-reduction benefits, but the supplier then also sold the improved software to its direct competitors.

The company was now paying the standard market rates for something it had helped to create, was completely locked into the supplier's software for process and system optimisation, and had also given away one of its primary sources of competitive differentiation.

The Printing Services Case

A manufacturing company was facing severe competitive pressure in its core markets. It decided to undertake a root and branch review of its activities to reduce operating costs and offer more competitively priced products.

Historically, the company had undertaken all of its own printing requirements in-house. It had a dedicated printing shop with highly qualified staff. Eventually, the company decided that printing was not core to its business and that, given the highly contested market, it was sensible to outsource.

Following market testing, it opted to award the contract to a management buy-out team. It allowed this team to create a new company and to operate both it and the existing printing equipment (which it acquired for lower than market prices) rent-free in its own buildings for five years.

No service-level agreements were put in place to guarantee that the host company's printing requirements were given priority, or provided at a preferential rate. The result was that the host never had anything printed by the buy-out team, which was too busy servicing other clients, and it was forced to use alternative printing suppliers.

The Power Plant Case

A company needed to build new infrastructure facilities for production with a new power plant to support a major expansion programme. Its board imposed short-term capital spending limits on the project and insisted that all non-core activities should be outsourced.

After a review, the company decided to retain ownership of the production facilities, but outsource the power plant. This would allow the company to pay for energy over 25 years rather than face a substantial initial capital investment cost.

The company recognised that it needed to control post-contractual opportunism because, in awarding a 25-year contract, there was considerable risk that the supplier could use its operational dependence on the power plant as a way of raising prices later.

It spent, therefore, considerable time developing a 25-year view of the relationship between the overall costs of build, operation and maintenance for the supplier. Having agreed the total costs of ownership, it then negotiated a very tight annual price for the cost of energy for 25 years (with some elements agreed for unforeseeable but legitimate increases in supply input costs).

Managing Outsourced Relationships Appropriately Post-Contractually

There is a final pitfall that outsourcing companies experience called inappropriate relationship management post-contractually.

This pitfall arises because the outsourcing company does not fully understand how to effectively manage relationships with the outsourced provider post-contractually. Figure 1 overleaf demonstrates the sourcing choices available to buyers when they source from suppliers.

FIGURE 1

THE FOUR SOURCING OPTIONS FOR BUYERS

FOCUS OF BUYER RELATIONSHIP WITH SUPPLIER	First-Tier	Supply Chain
Proactive Sourcing	Supplier Development	Supply Chain Management
Reactive Sourcing	Supplier Selection	Supply Chain Sourcing

LEVEL OF WORKSCOPE WITH SUPPLIER AND SUPPLY CHAIN

As the matrix demonstrates there are basically four ways in which buyers can interact with suppliers of outsourced goods and services.

When a company manages reactively it sources on a short-term basis and can either do this at the first-tier (*Supplier Selection*) or in the supply chain (*Supply Chain Sourcing*). When sourcing in this manner the outsourcing company normally operates at arm's-length and does not engage in extensive close working relationships with suppliers.

On the other hand, when a buyer sources proactively at the first-tier (*Supplier Development*) or in the supply chain (*Supply Chain Management*) the outsourcing company is supposed to make extensive long-term dedicated investments in the relationship. The supplier is supposed to do the same.

In recent years it is clear that many outsourcing companies only really undertake a fairly limited and short-term view of outsourcing and then operate at arm's-length with their suppliers when they should be working on the basis of long-term collaboration.

Related to this is the second problem that arises when outsourcing companies do enter into long-term outsourcing relationships. Often the suppliers understand how this can create switching costs and lock-in, but the buyer does not.

All too often we have found that outsourcing relationships are poorly managed by the buying company, with the creation of significant post-contractual switching costs favouring the supplier. Often this is a function of complacency by the buyer or outsourcing company once a long-term relationship has been established.

Unfortunately the ability of far-sighted suppliers to offer loss leaders to hard pressed outsourcing companies who then find themselves unable to manage outsourced relationships effectively post-contractually are legion.

Avoiding the Mistakes in the Future

Our research and consulting activities over decades show that there are 10 major reasons why organisations appear to make these mistakes when outsourcing (see below).

COMMON OUTSOURCING MISTAKES

1. A lack of a robust and rigorous make-buy methodology that is consistently used by all staff throughout an organisation, with individual managers developing their own idiosyncratic approaches.
2. A failure by managers at all levels within organisations to be trained in the basic principles of commercial exchange.
3. A failure to understand pre- and post-contractual power and leverage, and its relationship to moral hazard and lock-in.
4. Short-term decision-making that is focused primarily on financial headcount reductions and/or operational cost reduction, without consideration for the long-term strategic and operational consequences of this.
5. A lack of cross-functional participation by all relevant managers and functions within the organisation.
6. Decisions being made to protect or defend standard operating procedures and historic "turf" boundaries unrelated to a strategic or tactical understanding of value add in the business.
7. A lack of iterative review of past outsourcing decisions, with a view to a flexible approach to re-insourcing or re-outsourcing past decisions.
8. A failure to monitor market and supply chain circumstances externally once outsourcing has been undertaken.
9. A failure to create proactive sourcing mechanisms to drive continuous performance improvement by the supplier once outsourced contracts have been awarded.
10. A failure to create a robust exit strategy before entering into any outsourcing relationship.

Many companies think about make-buy issues infrequently and this leads managers to devise their insource-outsource methodologies on the spur of the moment. These are normally informed by a common-sense understanding of the key issues, but often without a proper understanding of the keys questions that must be asked about post-contractual moral hazard and lock-in.

Indeed, in over 30 years of working with public and private-sector organisations it is very unusual to find those that have a rigorous and robust make-buy methodology that it is taught to all aspiring senior and middle managers in the business.

Many current make-buy decisions appear to be made in order to massage quarterly or annual returns by finding short-term cost reduction opportunities, without any real understanding of the medium to long-term post-contractual risks being entered into.

This is compounded by the fact that the decisions are often made by senior managers, who lack a basic understanding of the principles of commercial exchange, and who have decided what the answer is before the review is undertaken.

Such managers often decide to exclude from the decision-making process those with the necessary commercial knowledge, who are often the very managers who will be operationally responsible for managing any subsequently outsourced business relationships.

Many organisations also fail to:

- overcome "turf" wars and divisions between internal departments about supplier relationship management;
- undertake an iterative review of what has been done;
- monitor market and supply chain circumstances;
- put in place the proactive sourcing mechanisms to drive continuous performance improvement with suppliers post-contractually; and,
- create exit strategies before entering into a relationship in the first place.

In our experience, therefore, there is far more evidence of outright failure and sub-optimality in outsourcing than there is of success. This has led us to conclude that outsourcing can only be successful if five key steps are taken (see below).

FIVE STEPS TO SUCCESSFUL OUTSOURCING

1. Develop a robust and rigorous organisation-wide methodology for make-buy decision-making.
2. Train all relevant managers in the commercial principles of pre- and post-contractual power and leverage; in understanding how to determine strategic and tactical value-add; and in how to use proactive sourcing tools and techniques with suppliers.
3. Involve all affected functions and managers in the process before a decision is taken on make-buy, and before a supplier is selected.
4. Never enter into an outsourced relationship without understanding all of the potential post-contractual risks that might occur, and without a strategy to manage post-contractual changes in supply chains and markets.
5. Always ensure that an exit strategy is in place, with all of the commercial and operational switching costs clearly understood.

If these steps are not taken, it has been our experience that far too many organisations end up like the couple that married in haste and then had to repent at their leisure.

Many commercially astute couples nowadays enter into pre-nuptial agreements before they marry. It is surprising that organisations do not do something similar when they outsource.

Final Summary

It is clear, therefore, that before any organisation undertakes outsourcing it must understand whether or not any activity it is contemplating outsourcing is of strategic importance to its business.

In order to understand this it must have a methodology to understand what are the critical assets in the supply chains within which it operates. Clearly, companies must not give away resources to suppliers that are the basis by which they can achieve above normal returns.

Beyond this it is clear that when it is safe to outsource operationally that buyers should have in place a methodology to understand how to avoid adverse selection and also post-contractual lock-in.

It is our view that the power perspective provides the most effective mechanism for buyers to understand the objective pre and post contractual power situations that they face, so that the appropriate relationship management choices can be made with selected suppliers.

It is also clear that, if buyers are to avoid the problems of post-contractual lock-in and understand how to manage relationships with suppliers appropriately in the future, they must adopt general clause contracting strategies.

General clause contracting strategies are those that provide general agreements about post-contractual opportunism, which suppliers have to accept before the buyer is prepared to enter into what is likely to be a long-term relationship with the supplier.

What is clear in practice is that, despite the many thousands of words written on the subject of outsourcing, most organisations we have worked with appear to be guilty of sub-optimal strategies. This is because practitioners do not fully understand the pitfalls of outsourcing.