
Application Management Outsourcing versus Insourcing

By Art Williams, Ph.D.

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Introduction:

Outsourcing critical, but non-core, activities to focused specialists improves ROI, and represents an accelerating business trend. While most non-core activities are candidates for outsourcing, those that are critical, complex and costly represent special opportunities. Application management outsourcing offers technical depth, focus and experience that are significantly superior to that available and affordable to most businesses. By distributing the cost of this depth, focus and experience over multiple customers, application management service providers actually reduce costs while improving service, especially availability. As Cisco Vice-President Eugene Lee puts it, This is all about economies of skill, not scale.

This white paper describes the pros and cons of application management outsourcing, a type of outsourcing targeted at the highest concentration of criticality, complexity and cost. The summary conclusion is that, for most businesses, such targeted outsourcing is clearly advantageous — strategically. But, getting there implies tactical challenges, including sunk costs, control and job security. These challenges are not simple, and are addressed most effectively with planning and an experienced partner. We provide an executive overview followed by an enumeration and discussion of the many relevant issues.

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Executive Overview

Why outsource application management?

The fundamental value proposition of application management outsourcing is the *simultaneous* service improvement and cost reduction obtained by sharing the cost of the required technical depth, focus and experience.

Considerations

Core and Critical Business Functions

Hackneyed clichés too often lump together business functions that are core and critical, urging us to treat them similarly. The reverse is true. Core business functions, those that differentiate your company from competitors, and critical business functions, those without which your company cannot function, warrant completely different treatment. For instance, an artist cannot outsource his painting, but he should outsource his surgery. In fact, the more critical a business function is, the more important it is to support it with the appropriate level of technical depth, focus and experience. Arguably the best example of a critical business function is the management of the company's ERP (Enterprise Resource Planning) system. A company's ERP system is like its central nervous system: very little productive activity can take place without it. It is correspondingly important to keep it running effectively.

Critical Processes and Competitive Differentiation

Critical business processes usually do not contribute directly to competitive differentiation. Their effects are primarily indirect. The demands of modern software applications, like ERP, are so diverse and expensive, in addition to being critical, that they frequently divert resources, especially management attention, from core business functions. ERP, in particular, is just too important to be managed with your left hand. When critical processes compete with core business functions for management attention and other resources they are adversely affecting competitive differentiation.

Additionally, critical business processes, such as back-office systems, do contribute directly to competitiveness through customer service and responsiveness. In this way, they contribute directly to customer satisfaction. They impact sales through the availability and ease of access to customer-specific data. Such critical systems also strongly affect the speed with which new product offerings can be introduced.

Another and perhaps even more important way in which critical processes can impact core processes is through the time and cost of implementation. Enterprise application software projects are notorious for their cost and time overruns. Not only do such overruns deplete the resources available for core business functions, they delay the benefits of the project, and, most importantly, they undermine the planning process. Planning depends on predictable costs and project durations. The ripple effects of cost and time overruns are inimical to the planning process.

Sharing the Cost of Technical Depth, Focus and Experience

For the very same reasons that you don't perform your own surgery, it is likely that you should consider outsourcing business functions that are, like surgery, critical, complex and costly. The sharing of technical specialists, especially those, like a surgeon, not required constantly, is the fundamental economy of scale that underlies application management outsourcing. A service provider can justify an entire hierarchy of specialization, distributing the cost of the most specialized over many customers. This is in contrast to individual customers, most of whom cannot begin to justify the cost of the expertise they need--especially the expertise they need only occasionally. Consider, as a concrete example, the role of database administrator. As specialized as this role is, there is a skill-cost spectrum within the role. That is, day-to-day management of the database can be performed by less skilled and less costly people than those qualified to fight unusual fires or to chase down and fix an intermittent error.

Cost Savings, Reduced Downtime, and Predictable Investments

Sharing the cost of the skill hierarchy among multiple businesses is such a powerful concept that application management outsourcing almost always reduces costs. The savings was predicted early on by Cherry Tree Associates to be between 30% and 50%. Fortunately, there has now been sufficient experience with this form of outsourcing to produce empirical data. A recent study of 54 ASP customers by IDC found an average ROI of over 400% and a payback time of less than six months for almost half the companies studied. IDC found that the average five-year ROI for enterprise resource applications to be over 1300%. Even such large estimates do not capture what are arguably the most attractive financial aspects of application management outsourcing:

- 1) reduced downtime,
- 2) predictable costs and
- 3) elimination of irregular investments.

The financial value of downtime is difficult to quantify, but this difficulty should not obscure its importance.

Cost predictability is one of the benefits most appreciated by customers of application management service providers. The benefit to the customer is clear, and is derived from the experience of the service provider, who has, in most cases, delivered similar services to other customers. That is, the service provider is experienced both with the services delivered and with the associated costs.

The elimination of irregular investments is another benefit that is popular among customers of application management service providers. Large investments distort budgetary planning. Conversely, the elimination of those associated with expensive information technology is strongly appreciated.

What Might Deter Me from Outsourcing?

Tactical Hurdles

While strategic planning should not, in general, be held hostage to tactical impediments, the tactical hurdles of this context are serious, and should be addressed with care. A very common scenario involves a potential outsourcing customer enthusiastically accepting the arguments above, but delaying action. The delay almost always reflects a collection of tactical hurdles, including sunk costs, control and job security. Without careful planning, the decision to outsource can force the relevant executive to deal with all of these hurdles simultaneously--a daunting prospect. With planning, the relevant hardware can be allowed to age, new career opportunities can be found for affected personnel and the transfer of control can be managed. Planning does not eliminate these hurdles, but it can greatly reduce them. The planning itself can be greatly facilitated by the outsourcing partner. Such a partner has seen these issues before, and can help with their management.

Continuity of Service

While sunk costs, control and job security are the most prominent tactical hurdles, service continuity is often an anxiety. The best service providers do everything in their power to guarantee continuous service. They proceed in three steps. First, service provider personnel assume responsibility for administration of the existing application at the customer's site. At the same time, a new implementation is constructed and brought on-line at the service provider's data center. Customer personnel then test the new implementation while its predecessor is available for comparison and backup. Finally, when all concerned are comfortable with the new implementation, the old one is shut down and removed. In this way, the probability of a disruption of service is reduced to a minimum.

Confusion Regarding Customization

Application software is usually more effective when it is customized to the specific business using it. This is true for software of all levels of complexity, but it is especially important for the complex software used by large enterprises. Additionally, different business segments, such as healthcare, finance and manufacturing, benefit greatly from segment-specific customization. For example, segments like healthcare and finance have government-mandated reporting requirements that can be handled effectively by software developed specifically for such requirements. The trade press has confused the issue of customization in the context of hosted delivery. The fact is customization and hosted delivery are largely independent, and hosted solutions can be as customized as their in-house counterparts.

Summary

The increasing complexity of IT and the decreasing supply (relative to demand) of experienced personnel capable of managing it at high performance and availability is driving the growth of outsourcing. Both cost and the quality of service benefit when multiple customers share the cost of the required technical depth, focus and experience. Outsourcing convincingly wins the strategic arguments: service, especially availability, is improved; costs are reduced. The technology is kept up-to-date. Infrequently used processes, such as disaster recovery and problem diagnosis and fix, are dramatically improved. The strategic, steady state benefits are compelling and well supported by customer satisfaction surveys. The tactical hurdles to be surmounted are significant, and call for careful planning, which can be assisted by the outsourcing partner. The summary is: Outsourced application management is, in fact, better, faster and cheaper, and careful planning will facilitate reaping these benefits.

Outsourcing vs. Insourcing: A More In-Depth View

Understanding Core and Critical Business Functions

Core business functions are those that distinguish your company from its competitors, whereas critical business functions are those without which your company cannot function. Information technology is unambiguously critical, ever more so. Within information technology, ERP is arguably the most critical.

This is a simple point, perhaps best made with a medical analogy. You are probably not even tempted to remove the appendix of a family member; and for brain surgery you are probably willing to travel some distance. The greater the criticality and complexity, the more sense it makes to timeshare experts and the greater the need for the best.

Among the business-critical functions, complexity increases the benefit of outsourcing, because complexity requires expensive human skills that can be effectively shared by multiple businesses. Again, ERP is the prominent example. So, the more complex and critical the business function, the greater the outsourcing benefit.

Impact of Application Management Outsourcing on Competitiveness

Because critical, but non-core, business functions do not represent a core competence, they usually do not have *direct* competitive impact. Nonetheless, they can have very significant *indirect* impact. For example, when delayed or over-budget information technology projects draw management attention and other resources away from core activities, competitiveness suffers. The outsourcing of critical processes to specialists significantly improves both the predictability and the availability of these processes. The impact of these benefits is widespread within the company. These benefits can be particularly striking in the context of information technology, because the scarcity and mobility of qualified technical staff constitute a daunting management challenge by themselves.

Impact of Application Management Outsourcing on Business Functions

Availability

Availability and reliability are all about procedures, process and discipline. Processes like change control can appear stultifying and bureaucratic to those not familiar with their necessity and benefits. Availability and reliability are glasshouse issues, and require glasshouse commitments and discipline. For an application management service provider, the required processes and procedures are the business because this is what they do.

Staying technically up-to-date

Individual activities, like performing software updates, are performed over and over again by the service provider. Each repetition raises issues in a new light and deepens understanding. Similarly, the reaction to technical personnel reading the trade press or participating in animated discussions laced with IT argot tends to be very different, depending on whether the participants work in a cost or profit center. For all of these and related reasons, service providers offer a very attractive work environment for technologists, which in turn raises the quality and commitment of the staff. It is symbiotic.

Access to infrequently used services

While technical depth and cost tend to correlate, both correlate inversely with frequency of use. That is, staff members with the greatest technical depth are used on the relatively rare challenges, design questions and the fighting of exotic fires. This issue is among the strongest for outsourcing. The great technical depth that is required rarely is precisely what individual businesses can least afford, but need most *when they need it*. Sharing the cost of technical depth is a very strong argument for outsourcing. Adding to this argument is the fact that the need for great technical depth is often difficult to predict.

Skill availability

Infrequent use causes knowledge to recede and skills to atrophy. So, the less frequently a process is used, the more sense it makes to share those skills and knowledge with others. This is why we have shared resources like hospitals and fire departments. From disaster recovery to scheduled vacations, Murphy's Law guarantees that needed personnel will be elsewhere when the need for them is greatest.

The entire collection of issues surrounding the availability of personnel possessing specialized skills, and the frequency of need for such skills can be viewed as a question of risk management. If the need can be covered by money, we buy insurance. When the need is for human skills, the risk should be managed by sharing it with others.

Impact of Application Management Outsourcing on Costs

Magnitude of cost savings

Application management outsourcing typically generates significant savings. A recent study by IDC found an average five-year ROI of more than 400%, and almost half the 54 businesses studied reached payback in less than six months. The average payback period was 15 months. Perhaps the most interesting aspect of the IDC study for readers of this white paper is IDC's finding that the ROI was especially large for companies who outsourced ERP-like applications. The average five-year ROI for this subset of the 54 companies was over 1300%.

Financial value of availability/downtime

Because it is so hard to quantify, the benefit of improved availability is usually ignored in cost comparisons. This is unfortunate, as it is a principal benefit of application management outsourcing. Let us try to establish the *scale* of the benefit. It is this issue that brings out the real meaning of critical when we speak of critical business processes. Because so little can be accomplished when a critical system, like ERP, is not available, the availability benefit scales as the revenue of the company grows. Thus, for example, for a small \$100M company the seemingly small difference between 99.5% availability (44 hours of downtime per year) and 99.9% availability (9 hours of downtime per year) has a value on the scale of \$400K per year. This simple estimate ignores the strong correlation between actual system outages and business activity. That is, business systems tend to fail when they are most stressed. Again, our objective here is scale, not precision. The scale of the availability benefit is very large.

Predictability of costs

Among the most popular benefits of application management outsourcing is the predictability of the cost, as opposed to the cost itself. Some of this benefit derives from the greater experience with the application(s) possessed by the service provider, and some of it reflects the transfer of risk to the service provider. In any event, customers very much like a contracted monthly bill.

Capital investment savings

This is another very popular benefit of application management outsourcing. This one has an ironic twist. Service providers in this context take on the burden of acquiring all the hardware, software and personnel required to host packaged applications. It is extremely attractive to customers to be unburdened in this way. The irony is that it is this aspect of the hosted-delivery market that is most responsible for the delayed profitability of such service providers. The requirement that the provider acquire, install, integrate and test all the required resources before the contract period begins gives every contract a loss-leader character, deferring profit to the latter portion of the contract period.

Origins of the Cost Reduction

The fundamental fact of life when comparing the insourcing and outsourcing of application management is that similar software is being run on similar hardware by similar personnel. The principal structural saving is the economy of scale resulting from the sharing of costly expertise. Personnel generally represent more than half of IT costs, and the sharing is greater for the relatively skilled, relatively costly and relatively infrequently used personnel.

Economies of scale vs. increasing returns.

Another source of confusion in this context is the great difference between economies of scale and increasing returns. Even body shops, like consultancies, enjoy economies of scale. In the body shop model, the incremental cost of adding a customer is a large fraction of total costs. The economy of scale refers to the incremental customer addition cost being smaller at large business volumes than at small business volumes. Software vendors enjoy increasing returns, because the incremental cost of adding a customer is tiny compared to volume-independent costs. Application management service providers enjoy significant economies of scale, but weak increasing returns.

Practice makes perfect and results in cost savings

There is far more repetition of similar application-related tasks at an application management service provider. This repetition creates specialized expertise, related intuition and speed, all of which tend to reduce costs.

Accounting ambiguities for in-house costs

Service providers usually know their costs more accurately than potential customers know the cost of the in-house alternative. In-house accounting for IS costs is notorious for its ambiguities. It is often based on internal budget entries that fail to capture a variety of indirect costs. Costs associated with facilities, such as floor space, power, air conditioning and even some personnel, for example, are not accurately identified with individual business functions and applications.

Another collection of ambiguities can be labeled *burden*. This group includes personnel office space, vacations and benefits. One application management service provider provides prospective customers with a spreadsheet that serves to remind the user of the many costs that are easily forgotten or obscured by budget structure.

Frequency of use

Often the activities requiring the greatest and most costly technical depth are those least frequently used, and, therefore, the most sensibly shared. This is not a matter of just two categories: routine and inexpensive, on the one hand; rare, exotic and expensive, on the other. There is an entire spectrum or hierarchy here. The broad and up-to-date knowledge required for data center design changes is seldom required in an insourcing environment. Fire fighting and bug diagnosis and fix are used more frequently, but less often than backup and restore. The long set of implications of infrequently made decisions makes it very attractive that they be made by highly qualified experts. Outsourcing is well suited to sharing the costs of this type of risk-reward management.

Risk of demand anomalies and other surprises

Risks of this type tend to be reduced by outsourcing, because service providers aggregate the resource requirements of many customers, and are likely to have unused capacity available for new customers. This capacity can be used to cover demand anomalies. Independently, proactive capacity management is more directly tied to service provider financial health than in the case of in-house cost centers. Thus, it is more likely to be present in the outsourcing environment than in the corresponding insourcing environment

What might deter me from outsourcing?

The high-level conclusion of this analysis is that the benefits of outsourcing complex, non-core business functions are numerous and significant. This summary conclusion is supported by numerous customer satisfaction surveys. The challenge in this context is, therefore, not the steady state, strategic benefits, but rather the tactical hurdles that must be surmounted in order to obtain these benefits. It is easy to pontificate that strategic benefits should not be hostage to tactical inconveniences. But, in reality, it is these tactical hurdles that are gating the adoption of application management outsourcing. In this section, we enumerate and discuss the most common and important of these hurdles.

How do I deal with sunk costs?

Sunk costs, that is, investments already made in the insourcing alternative, are the most familiar and important of the tactical hurdles. Sunk costs, in turn, come in many forms: hardware, software, personnel and all the components of what we call *facilities*, such as raised floor, power supplies, air conditioning, etc. We discuss some of these in greater detail below, but the useful tool for all of them is planning. If outsourcing is foreseen, then investments that will become troublesome can often be avoided. Similarly, with lead-time, alternative opportunities for displaced resources can be identified. This applies to both human and other resources. Planning in this context is one more aspect of the context with which the service provider is likely to have more experience than the business customer. The fact that these challenges are common implies that service providers have confronted them before, and experience, as with more technical issues, is very valuable.

Can the service provider use hardware that I've purchased?

This is rarely a good idea. Some of the benefits offered by outsourcing are derived from minimized heterogeneity in the data center. Note that homogeneity was not used. The rapidly improving cost-performance and functionality of technology provides plenty of entropy in the data center -- without taking in stray dogs. Independently, outsourcing of this type implies an infrastructure upgrade for which a stimulus is often needed. The upgrade implicit in hosted delivery is coherent, consistent and appropriate to the task.

Will the service provider hire the in-house personnel?

Only very rarely is the answer yes. This is one of the features that distinguish application management outsourcing from traditional outsourcing as offered by IBM and EDS, for example. The latter typically implies a wholesale takeover of the customer's information services infrastructure, including the rebadging of IS personnel. It should be noted that the wholesale takeover seldom provides the application focus and expertise offered by the younger, smaller application specialists.

How do I deal with job security?

Job security is much more than a matter of sunk costs. It can be very emotional. Fortunately, it is arguably the greatest beneficiary of planning. Outsourcing almost always implies a transfer of responsibility and jobs, which can be painful. The fundamental source of cost savings with application management outsourcing is the *sharing* of expensive personnel. So, some job elimination is almost inevitable. Again, planning is key.

How much control can I retain?

The fundamental truth in this context is that a responsible service provider cannot simultaneously guarantee high availability and expose the control of complex applications to customer personnel. This issue does not often arise in the context of mature software, such as ERP applications. It does arise in the context of web-based e-commerce applications, when the customer finds the service provider's response to change requests too slow. Generally, high availability is too important to be compromised by inappropriate access. Responsiveness, in general, should be negotiated into the SLA (service level agreement).

Control can take on another form. When in-house personnel manage a complex application, informal lines of communication can grow up between those responsible for business processes and those responsible for the application components embodying such business processes. These informal lines of communication by which the application is controlled can be damaged or broken by outsourcing. And, since they are usually not documented, they are subject to the perils of personnel changes. This effect is minimized by attention to the details of the processes discussed under continuity of service below.

There is one aspect of control that customers should try to retain: the timing of scheduled outages. Such outages are required for system maintenance and updates, but they need not occur during periods critical to the customer's business operations, such as quarterly rollups. This is another example of the importance of good communication between the customer and the service provider, and also of the existence of an advocate on the provider's staff for each customer.

Another aspect of application management over which a customer might want to retain control is the application configuration. This type of control can almost certainly be negotiated, but details of testing, staging and change control should be written down as part of the contract. An aspect of such shared control that should also be completely thought through and written down is the boundary of responsibility for diagnosing and fixing problems that appear to be caused by customer-introduced configuration changes.

How do I ensure continuity?

Another source of anxiety associated with application management outsourcing is service disruption associated with the actual transfer of responsibility and control. The best service providers focus great attention on minimizing any service disruption. They proceed in multiple steps. First, personnel of the service provider methodically assume responsibility for administration of the existing application at the customer's site. At the same time, a new implementation is constructed and brought on line at the service provider's data center. Customer personnel then test the new implementation while its predecessor is available for comparison and backup. Finally, when all concerned are comfortable with the new implementation, the old one is shut down and removed. In this way, the probability of a disruption of service is minimized.

Other Considerations

Will a service provider share MY priorities?

This question is fundamental to all types of outsourcing, and the rate of outsourcing growth is evidence that this challenge can be met. It should not, however, be brushed under the rug, and it is amenable to safeguards. For example, aspects of the SLA dealing with problem reporting and escalation procedures should be explicit and well understood by customer personnel. It is also helpful to have an employee of the service provider unambiguously identified as the advocate for each customer. One bottom line in this context is the customer satisfaction survey discussed below.

Does application management cost savings preclude customization?

The particular economy of scale derived from application and configuration homogeneity is often asserted by analysts to be so critical to the profitability of application delivery outsourcing that any form of application in-homogeneity, such as customization, is precluded by the model. This is nonsense. The principal confusion underlying such assertions is the failure to account for the gross difference between creating and managing customization. If customization is accomplished by configuration, as is common with SAP, for example, the impact on application management costs is completely negligible. The customizing configuration data is simply a subset of the data on which the application operates. Even if the customization is accomplished by code (not configuration) the impact on management costs is small.

Outsourcing: The Fundamental Value Proposition

We've reviewed a number of issues and looked at the opportunities and challenges for outsourcing an enterprise application in this paper. Although there are many considerations, the fundamental value proposition of application management outsourcing is the *simultaneous* service improvement and cost reduction obtained by sharing the cost of the required technical depth, focus and experience.