White Paper

AppLabs
no doubt about it

Quality Governance and Testing in Outsourcing

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Introduction

As the business world becomes an increasingly globalized environment, innovations in technology and communications underpin every decision and process. As such, more and more organizations, realizing their limits in terms of resourcing these technological developments in-house, are building outsourcing and offshoring strategies into their business practices in order to boost innovation in technology and communications through partnerships.

Companies are no longer using outsourcing merely from an operational "box shifting" perspective. More and more organizations are realizing its benefit as a business strategy, as a way of transforming their business practice for the overall benefit of the company. Rather than getting the supplier to conduct the operation as it was in-house, more organizations are outsourcing with the intention of getting suppliers to revamp and vastly improve the operation. Often termed 'Transformational Outsourcing' this approach must be approached carefully to ensure the outsourced services do not degrade and the target benefits are realized.

As such, best practice in service delivery in all areas of outsourcing is imperative in maintaining a successful project – quality governance and testing are therefore critical in every aspect of outsourcing. This is the reasoning behind a joint venture between testing consultancy, AppLabs, and the National Outsourcing Association: to seek to investigate quality governance and testing procedures in outsourcing and develop best practice guidelines in this area.

Initially, an analysis of outsourcing successes and failures was conducted in order to ascertain whether there were issues relating to quality governance and testing in outsourcing. Once this had been established, a research study was conducted in autumn 2005 via an online questionnaire, to further investigate the thoughts and perceptions of outsourcing professionals on the issue of quality governance in outsourcing. The results of this research were then presented at a roundtable event, where the delegates were outsourcing professionals with an interest in quality governance and testing procedures.

The discussion and subsequent research was conducted in order to form the basis of this White Paper, the results of which will hopefully provide some valuable insights that will help organizations to challenge their own thinking when it comes to quality governance in outsourcing.

> ***Promoting Best Practice in Quality Governance and Outsourcing***

The NOA strives to promote best practice in all areas of outsourcing and offshoring and strongly advises that organizations, which adhere to best practice, are more likely to succeed in outsourcing endeavors. This sentiment was the principal driver behind investigation into the quality governance and testing practices in outsourcing projects. The recommendations that form the conclusion of this White Paper will form the "Quality Governance and Testing" section of the NOA's toolkit for best practice in outsourcing.

Current Status

Quality Governance and Testing – A Summary

Quality Assurance and testing are combinations of validation and verification. Both procedures establish that the specification is correct and whether the system has been built according to the specification. In other words "Have we built the right thing?" and then "Have we built it right?"

The desired result of quality assurance and testing procedures is the realization of a system, product service or process, which meets the outlined requirements and standards and enables the benefits to be realized.

Quality Governance is the set of regulations and requirements that provides a framework within which quality assurance and testing should be conducted. It is the overall management of successful quality delivery.

To achieve this validation and verification, and to steer the governance of quality "in-house" significant management of people and processes, clarity and visibility of communications and information is required. Outsourcing simply increases the challenges. From an end user's perspective, there may be less people to manage once the service or system has been outsourced, but they are out of the end user's direct control. This requires a need for mature and robust processes and airtight communications procedures between the supplier and the end user, to ensure the supplier adheres to guidelines and delivers a glitch free system, process, service or product.

The Role of Quality Governance and Testing in Outsourcing

With the era of global sourcing upon us, today's organizations can choose to source services from IT service provision to finance and accountancy operations, from multiple locations around the world. Whether companies

are motivated by cost savings or improving the quality in their service delivery, more and more organizations are selecting to work with suppliers in onshore, nearshore and offshore environments to tailor make the best service to fit their organization.

Despite the proliferation of outsourcing across all sectors, the industry has not been without its problems. As outsourcing matures as a business process, the successes and the failures that have occurred in different outsourcing projects have come to light. One such problem that has emerged is that a number of large and small scale outsourcing projects have failed due to inadequacies in the quality governance and testing procedures involved in the project. Case studies of these projects are outlined in section 3.

In order to investigate the issues in quality governance and testing procedures that often lead to these outsourcing disasters, in autumn 2005, AppLabs and the National Outsourcing Association, conducted a joint research study. This was to assess outsourcing professionals' perceptions of quality assurance and testing in the outsourcing environment.

Summary of AppLabs/NOA research

The primary objective of the research was to try and pinpoint the reason behind the fact that a number of outsourcing and offshoring projects have failed due to inadequate quality assurance and testing. Over 80 outsourcing professionals were questioned in the study, completing a 14-question, web-based questionnaire.

The findings confirmed the overall hypothesis that quality assurance and testing were not as high a priority in the outsourcing environment as perhaps they should be. Most of the sample agreed with the fact that quality assurance and testing are extremely important, but due to time and resource constraints, they can often be compromised in the haste to reach deadlines and fall within budget.

Some of the key findings are as follows:

- Although 93 per cent of respondents considered testing and quality assurance a priority, almost 80 per cent of the sample believed that testing was not conducted thoroughly enough in outsourcing projects
- 62 per cent of outsourcing professionals believed that insufficient financial backing was given to testing in the outsourcing space
- In the outsourcing lifecycle 39 per cent of outsourcing professionals conduct testing just prior to system go live, whereas a mere 20 per cent use it as an upfront planning (and risk management) tool for testing the success of the project
- Almost 50 per cent of respondents believed that the pressure to meet deadlines was the main reason for insufficient quality assurance procedures and poor testing. Resources in terms of man power was the second reason (30 per cent) followed by cost (22.5 per cent)
- In order to ensure that failures in quality assurance and testing procedures are minimized, 98 per cent of respondents believe that outsourcing contracts should detail quality assurance and testing at each stage of the project lifecycle linked to formal acceptance criteria – currently, contracts that echo this sentiment are almost non existent

Why Quality Governance and Testing Fail in Outsourcing

One of the major reasons why outsourcing amplifies the need for airtight quality governance and testing capabilities is because the involvement of two or a number of partners in an outsourcing environment increases the probability that problems will occur. When multiple partners are involved in service delivery, so the need increases to ensure that the system is sufficiently tested and adequate quality governance procedures are applied, in order to ensure delivery is as problem free as possible.

Other reasons why outsourcing projects fail as a result of flaws in quality governance and testing procedures include:

- **Lack of strategic perception around testing:** Testing and quality governance is often considered a tick box, operational function, when it should be about the verification of a solution to fit the business. It is not simply about checking that the system works. Testing needs to be thought about in terms of the whole organization because if any problems do arise, it can seriously affect the business. In terms of the whole outsourcing environment, the complexity of testing can be doubled – problems and potential scenarios need to be thought through from every perspective.
- **Inadequate needs analysis:** Problems often occur when the original requirements analysis is

poorly conducted. This is particularly prevalent in transformational outsourcing. It is often the case that once the original needs analysis is conducted, requirements can change drastically – this can seriously impinge the effectiveness of delivery. If the end user continually changes the boundaries of the project, the quality of the service delivery can be damaged.

- **Leaving it too late:** A problem that was cited in the AppLabs/NOA research was that testing is often left too late – 49 percent of respondents alleged that testing was generally only conducted prior to go live in outsourcing projects. This could be highly detrimental to the business as any problems are only flagged up at the latest possible stage. This makes these issues extremely expensive to rectify. If problems are detected at an early stage, before ambiguity becomes rife and while the clarity of the requirements can still be improved, this not only saves money, it means they can be corrected immediately, which will minimize their effect on the contract overall.

- **Deadline pressures:** Suppliers are often under serious pressure in outsourcing contracts. Having to adhere to deadlines, fall within budget and meet stringent SLAs often means that testing and quality governance can be compromised in order to meet these targets. Pressure from the end user to push systems out on time, often means that testing is compressed into a reduced time period to decrease delays in implementation. Suppliers are also often paid to deliver on time – if they fail to do so, they forgo payment or are penalized in terms of "fines." How suppliers are incentivized to adhere to deadlines has to be carefully thought through, or the customer could have problems with what is delivered.

- **Blurring over lines of responsibility:** Problems can also arise over where the responsibility for testing and quality governance lies. With the supplier or with the end user? While there is no definitive answer, it is highly recommended that all parties retain procedures for testing and quality governance and all of these procedures are tightly integrated. The end user needs to retain a high degree of control over this area – the supplier should not be left to "mark its own homework."

In outsourcing projects, quality governance and testing needs to be involved at the outset and it needs to be independent and objective. This approach will maximize both the supplier's and the end user's chances of delivering a successful outsourcing project to budget and on time with as few hitches as possible, and will ensure that delivery of the outsourced service will continue to be as seamless as possible.

Issues in Outsourcing – Some Examples

Following investigations and analyses of outsourcing failures, it has emerged that a number of projects have gone awry due to insufficient or inadequate adherence to quality governance and testing procedures in outsourcing.

Case Study 1: The Child Support Agency is a prime example. Dogged by innumerable problems, the CSA's £456 million computer system caused havoc with the organization's attempts to track and secure child support payments from absent parents. Failing to live up to requirements, the government threatened to pull the plug on the system. In response, the supplier, EDS, also blamed the government for ordering 2000 changes from the original requirements that were mapped out. However, the real reason behind the system's failure was a lack of testing – inadequate capacity and performance testing plunged the CSA's working practices into chaos. Recent reports tell of users literally crying with frustration when trying to use the new system.

Case Study 2: Another example of an outsourcing project failing due to insufficient testing is a desktop project at the Department of Work and Pensions. Poor testing procedures meant a local PC operating system upgrade was erroneously applied across the organization, disabling host access. It may not seem the most serious of incidents, but it just highlights how a seemingly simple local upgrade can have such widespread effects if the right testing procedures are not in place. Up to 80,000 of the DWP's PCs were affected, making it one of the worst IT failures in the last year.

Case Study 3: The Job Centre Plus project is another outsourcing project that has endured serious problems, principally due to defective quality assurance and testing. In a report, the House of Commons Work and Pensions Committee recently denounced the project as being a "catastrophic failure in customer service." Problems arose from the outset, with an insufficient needs analysis being

conducted, through to inadequate capacity testing procedures. The fundamental problem seemed to be that the system was built with little thought given to the actual business needs of Job Centre Plus.

Despite the fact that public sector outsourcing problems are more widely publicized, the private sector too is just as likely to endure problems (but they are not subject to press scrutiny, the National Audit Office or the Public Accounts Committee!) resulting from a lack of attention to quality governance and outsourcing procedures. Failing to adhere to sound quality governance and testing procedures can have disastrous results. From loss of productivity when systems are affected and the resources that need to be invested to rectify problems, to the damage that can be wrought on an organization's reputation for publicly failing to manage systems correctly and the decrease in stakeholder confidence in the organization as a result, the fall out can be substantial.

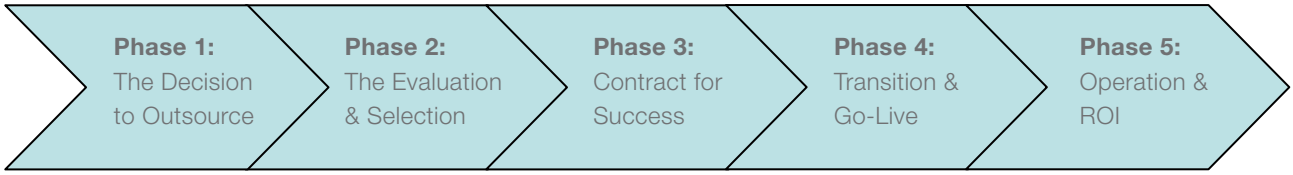
The Path to Outsourcing Success

The Path to Outsourcing with QG and Testing in Mind

The path to outsourcing success needs to be underpinned with project management best practice and robust quality governance and testing procedures that resonate throughout the outsourcing lifecycle.

If the template path to outsourcing is not adhered to and sufficient due diligence, research and requirements definition is not undertaken, the operational lifecycle of the outsourcing project will be fraught with problems, ranging from ambiguity about roles and responsibilities, to let downs in management, communications and expectations. It will be doomed to failure from the outset.

Diagram 1: The 5 step Path to Outsourcing Success



Phase 1: The Decision to Outsource

It is imperative that the organization involves commercially minded decision makers in any outsourcing decision, who will have a higher level view of the business strategy and realization of what the outsourcing project is expected to achieve. These decision makers also need to take into account the risks involved in outsourcing and the necessity of sound quality governance and testing procedures in place to mitigate these risks.

Phase 2: The Evaluation & Selection

Selecting the correct outsourcing partner depends on a number of criteria, from a "testable" and "measurable" perspective in the evaluation & selection phase. Considerations include:

- The reason(s) for outsourcing:
- Can the supplier(s) reduce costs as claimed?
  - Can they provide the skills?
  - Can they deliver in the timescale?
  - Provide Innovation?
  - Can quality really be maintained/improved?
  - Will productivity efficiencies be possible?
  - Will the supplier(s) offer a flexible, rapidly deployable resource pool?
- Are robust processes in place to define and communicate requirements both at the organization and the supplier(s)?
- Are robust processes in place to manage change within both the organization and the supplier(s)?
- Is there a definition of who will perform Quality Governance & testing at each stage of the operational lifecycle? For example, who is responsible for what areas, how it will be performed, who will perform it and how it will be measured and signed-off at each quality gate?
- Are processes in place to ensure effective, efficient, open, honest and trust based communications and visibility in all directions?
- Is there a definition of who will perform Quality Governance & testing at each stage of the operational lifecycle? For example, who is responsible for what areas, how it will be performed, who will perform it and how it will be measured and signed-off at each quality gate?

④ Are there significant cultural boundaries that cannot be overcome and could affect the governance of quality issues?

Phase 3: Contract for operational success

When the organization has selected their outsourcing partner(s), it needs to ensure the contract is constructed with the right level of flexibility, to ensure the mutual success of both parties.

All of the factors which were explored in the Evaluation and Selection phase should be formalized in the contract, all of which should be measurable and testable. As with any form of testing, these contractual tests should be defined with clear criteria and managed in every subsequent operational lifecycle in the same way as quality gates in any other project.

The research that AppLabs and the National Outsourcing Association conducted bore out the notion that outsourcing professionals are overwhelmingly in favor of the concept that outsourcing contracts should detail testing at each stage of the lifecycle linked to formal acceptance criteria.

Dealing with quality governance at this juncture is essential in establishing an effective outsourcing environment, so it should receive priority attention during the negotiation and contracting phase of an outsourcing project. Broaching it at this stage ensures that all parties can clarify their respective roles and responsibilities around quality governance and testing.

Incorporating quality governance and a testing structure into the contract increases the likelihood that the end user and the suppliers will fully adhere (as they are contractually obligated) to fulfilling QG and testing requirements. For example, if applied to the CSA scenario, which was outlined in section 3, case study 1, if quality governance and testing had been formalized in the contract, it would have ensured the verification of the continued alignment between the CSA business processes and the IT system being developed.

Phase 4: Transition and Go-Live

Organizations reap what they sow, in that a hurried transition phase will result in poor relationships between both parties and the partnership will begin on an unstable foundation. It is essential that training, education and knowledge transfer results in the cooperation of all parties, all of whom should be aware of their roles, responsibilities, the processes and how the outsourced service will be managed and communicated.

Phase 5: Operation and ROI

The success of each operational project delivered in an outsourcing framework will depend on how well phases 1–4 have been conducted. Often, within an outsourcing environment, extra projects are initiated – if organizations have an established framework that has evolved from successful phases 1–4, this can be used as a blueprint for other outsourcing projects going forward.

It is essential that a quality governance process is run in parallel with the operation of an outsourcing project (as outlined in the following “operational stages” section of this white paper) – this will ensure that no party takes its eye off the ball and all quality assurance procedures are adhered to for the duration of the development of the outsourced program, during the transition from development to production and throughout the rest of the outsourcing lifecycle.

In order to ensure that the quality governance and testing initiative is actually working effectively, it is essential to measure it in terms of ROI, to ensure there is a benefits realization. This could incorporate a measurement on opportunity cost i.e. what could happen should the quality governance and testing procedures fail or are if they are not adhered to correctly.

Operational QG and Testing Stages in Outsourced Projects

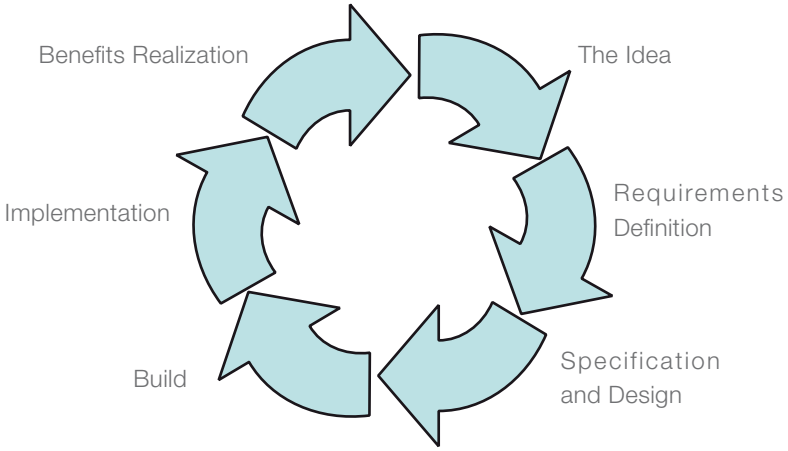
Diagram 2 represents the different operational stages of testing and quality governance considerations in an outsourced program and pinpoints the different stages where these strategies should be prevalent.

Stage 1: The Idea

Right at the inception of an outsourced project, before any concrete decision has been taken to go ahead with the outsourcing, it is critical that all the core concepts and benefits of the process/system as is, and the perceived concepts and benefits of the outsourced project, are captured and documented in such a way that underpin the delivery of any subsequent project. Often these will be in the business case and/or business plan.

Testing and quality governance need to be tightly integrated with the ideas stage and any high level business analysis or business transformation strategy work that is being conducted around the potential outsourced project.

Diagram2: Representation of the Operational QG and Testing Stages in Outsourced Projects



This early engagement will enable the definition of the steps required to fulfill contractual obligations and ensure that thorough testing and quality governance is conducted at every stage. In addition, early engagement ensures that "Static Testing" (the inspection or review of the idea) could demonstrate that the outsourcing project is un-testable or flawed. In this scenario, the idea can be modified to a stage where it becomes deliverable and testable so that the benefits will be realized.

Stage 2: Requirements Definition

The requirements analysis is a stage that is often the Achilles heel of an outsourced project, particularly where transformational outsourcing is concerned. Organizations often may have no set idea of how the transformed system or process will look, or at least, the idea will change and develop with time. This can have consequences for the supplier, in that the goal posts keep changing. It also means that it is extremely difficult to implement and control quality governance and testing procedures if the specifications keep changing from the original remit.

The definition of requirements is a critical stage in providing a firm footing for the project. It is important to integrate a requirements testing program at this stage and capture the requirements of the outsourced system into scenarios that can be tested throughout the lifecycle of the project. As with the ideas stage, "Static Testing", by inspection, walkthrough or review of the requirements may demonstrate that they are ambiguous or lacking in clarity, making them untestable. "Static Testing" allows the requirements to be modified so that ambiguity is eradicated and the requirements become testable.

It is essential that the scope and the focus of the change and the key requirements that are core to business case are properly documented and tracked so they do not become lost or forgotten. This approach will provide a firm foundation for mitigating any risk in outsourcing.

Stage 3: Specification and Design

If defects go undetected in the early stages of an outsourcing project, they can wreak substantial damage. The resolution of defects is much easier and cheaper to fix if they are detected at an early stage of the outsourcing project. In this way the damage is ring-fenced and prevented from causing further disruption as the defect ages. We have already introduced the concept of "Static Testing" at the ideas and requirements definition stages – it equally applies to the specification and design stage and can be utilized to good effect to ensure that the design is clear, as simple as possible and testable.

Using this approach to quality governance and testing in outsourcing, organizations can ensure that the business scenarios that were captured at the ideas stage and developed through the requirements definition stage are fully supported during the design. This ensures that the investment is protected as the outsourced project progresses and limits the damage that can be caused.

Stage 4: Build

The quality governance and testing techniques that are applied at the Development stage are dependent on the size and structure of the project and the development method being applied. A flexible approach to QG and testing, plus ensuring that all elements are closely integrated with the outsourcing project design and the working methodologies of the partners, can ensure that defects are captured quickly and the governance procedures are put in place to resolve these problems.

This paper is not concerned with the mechanics of testing or the different types of testing which can and should be

deployed through the system lifecycle. It does, however, advocate the early engagement of testing (at the first three stages) and that the planning and design of testing should take place in parallel with these first 3 stages so that the execution and recording of the testing (and therefore resolution of the discovered defects) can start as soon as a system or process is released from the Build and Unit Test stage. In this way quality governance and testing becomes an effective planning and risk management tool which is focused on the successful outcome of the project and the realization of the expected benefits.

This approach can drastically reduce development timescales and costs, another factor, which is problematic in outsourcing. As the outsourcing environment changes and the requirements of both partners evolve, it becomes more and more difficult to attempt to stem the spiraling costs that often have such a negative impact on outsourcing arrangements.

Stage 5: Implementation

Once the outsourcing project or system moves towards the implementation stage, other factors of quality governance and testing come in to play. Non-functional quality and testing such as security, performance, compatibility, failover and recovery should all be catered for in this stage of the outsourced project.

Implementation is the stage at which many outsourcing projects have fallen over. From failures to conduct adequate capacity testing before a web service goes live (the Inland Revenue's self assessment project when it went live in 2004) to failing to conduct the performance testing of an outsourced desktop service adequately, many outsourcing projects have failed to meet the required standards at implementation.

Stage 6: Value Realization

Following implementation, many outsourcing projects often fail to meet the financial targets set out in the initial business case as a result of poor resilience and reliability of the systems that are involved. Sound quality governance and assurance ensures that by the time the implementation is complete, the outsourced system or process is in a robust enough form to deliver the promises set out in the original outsourcing business case and requirements documentation. It will also ensure that the system can change pace in accordance with any rapid and controlled changes to implementation.

Particularly useful in the outsourcing environment is that quality governance and testing of this nature allow the outsourced system to continue to be enhanced without the risk to the business operation it is now supporting. It also ensures that regression testing can be performed in an automated way, which reduces ongoing maintenance costs and reduces the 'time to market'.

Key Considerations

When it comes to the implementation of quality governance and testing procedures in an outsourcing environment, in addition to the points that have already been made, there are a further set of considerations to be borne in mind, which if ignored or if executed poorly, can lead to serious problems that can hinder the outsourcing project. These points include:

- **Test with the business in mind:** It is essential that all quality governance and testing procedures are considered from the wider business and organizational spectrum – this will help to minimize risk at an early stage. From capacity testing to regression testing, every element of the quality governance and testing strategy needs to be planned with the business in mind.
- **Testing as a strategic planning and risk management tool:** As mentioned, all too often testing is left until too late in the outsourcing lifecycle. If it is used upfront, as a strategic planning and risk management tool (as indicated in section 4 in the "stages" section), it will detect system flaws earlier and prevent bigger problems from occurring. Quality governance and testing should be involved right from the outset.
- **Where the responsibility lies:** The outsourcing environment can also cloud where the responsibility for testing lies. Should the end user rely on the supplier's judgment? Or should the responsibility for testing lie with the end user? There is no definitive answer as no two projects are the same. As a customer, there is often a temptation to devolve all responsibility to the supplier – however this can leave the customer in a vulnerable position as it could be a case of leaving the supplier to "mark its own homework." The realms of responsibility must be decided at the outset, at the contractual level, and there should be secure quality governance and testing procedures in place on both the end user's and supplier's (or multiple suppliers') sides that are

undertaken from the beginning of the project. This will ensure that problems are detected early on and the earlier they are spotted, the more easily and cheaply they can be rectified.

Another issue is at the end user site and the supplier site – which person should be responsible for overseeing and managing the testing and quality governance procedures? Most organizations tend to employ a test manager - whilst it is recommended that there is a person or team solely responsible for testing, it is also essential that testing and quality governance have the buy in from the wider outsourcing team and also from the board (from the end user organization). It is imperative that testing and quality governance are considered from the wider business perspective and to do this, strategic business input is required.

- **Define the business requirements:** The primary bug bear for suppliers in the outsourcing environment is often that the customer's requirements can change vastly from what was originally requested (in the case of the CSA, the supplier alleged that the customer had ordered 2000 changes from the original requirements). Constant changes to the system can have repercussions on the testing program, so all changes have to be monitored carefully and appropriate testing procedures amended in accordance.

- **Use independent expertise:** The actual outsourcing of testing and quality governance can also greatly impact the success of the outsourcing project. In addition to retaining quality governance and testing capabilities, the addition of objective quality governance and testing experts to oversee the project can greatly increase the chances of success in an outsourcing project.

Conclusion

This White Paper has clearly identified that there is room for improvement when it comes to quality governance and testing in outsourcing environments. As opposed to a blatant lack of regard for these procedures in outsourcing, other external variables tend to come in to play which means that quality governance and testing standards are often compromised. As many organizations are guilty of rushing into outsourcing in a bid to cut costs and streamline overheads, quality procedures have often been left by the wayside to the detriment of the outsourcing project.

However, the number of projects that have suffered serious issues as a result of inadequate quality governance and testing procedures, signals that the industry needs to be alert to failures of this nature. Outsourcing failures can result in substantial loss of face, with organizations losing millions of pounds in resources. They can have a negative influence on productivity and down time; and can wreak significant damage to the organization's reputation, therefore having a knock on effect on stakeholders' confidence in the efficient running of the organization. In extreme cases, this can affect share price and the organization's financial performance.

Adhering to the best practice quality governance and testing guidelines that have been laid down in this paper will give organizations a head start in terms of managing quality risks and maximizing chances of success through improvement of quality governance and testing procedures.

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