

IT and Software Programme Assurance Reviews

Hidden Threats IT projects and software development activities are complex and difficult endeavours. Complexity lies in the application spaces they attempt to automate, in the technology they seek to apply, in the process of applying it and in the intricate manoeuvres necessary to introduce change into a busy and challenged operation whilst avoiding disruption. Problems originate in missed activities, missed dependencies, flawed expectations, inadequate design, poor testing, poor coordination, user rejection and from missing fallback positions. Often there are multiple sources.

All on Track These problems are like rocks below the surface of the water. All is calm, the project or software development is on track to deliver to expectations on time and then the rocks intervene. Suddenly, with little warning, the dates are slipping back and the scope of the delivery is contracting. Reduced capability, delays bringing these into service, maintaining existing systems and extended development periods cause substantial cost increase. The benefits the project will deliver shrink. Cancellations are not unknown.

Avoiding the Rocks Generally hindsight not only shows that the location of the rocks could have been foreseen but also that it would have been perfectly possible to have navigated around them. People were too focussed on pushing for success to spend time considering potential problems. Nobody objectively reviewed identified and addressed the risks and so opportunities to avoid them were lost. Programme Assurance Reviews close this gap and guide projects safely through dangerous waters.

Programme Assurance Review is a fundamental way of avoiding disastrous encounters with the rocks. The review operates alongside the project to scan for risks, measure the threat they represent, plot appropriate courses of action and ensure that risk reduction measures do not drift off course. Risk reporting at key decision points provides sponsors and the governance team with an objective understanding of the projects status and likely prognosis.

Effective Reviews Many projects have a risk register but few actually practice effective risk management. The risks they track are secondary issues to do with executing the plan; they rarely question the plan itself. To be effective a review has to break the mind set that the plan is inherently sound. It may even need to question the objectives of the project. Difficult to do well and a potential source of conflict Programme Assurance Reviews are an area where effectiveness depends on a disciplined approach and on the application of extensive experience.

Three Base Disciplines Success depends on the informed and appropriate application of three disciplines.

Identifying the Threats Threats come in diverse forms. The system can do harm by doing something wrong or if a circumstance arises that it should be cannot deal with. Damage can also come from a failure to deliver capabilities in time. These threats must be understood and impacts assessed.

Understnading the Risk A threat tells us how much harm could be done but not how likely it is to occur. The factors that govern whether or not it will occur must be identified and assessed. When this is done the risk is known. When risk is known it is possible to prioritise to determine which threats to spend most time and attention on.

Effective Handling Significant risks have to be managed. Ways of tolerating their effects or of reducing their likelihood are identified. This can trigger system changes, amended plans or additional activities. Careful monitoring ensures mitigation activity does not fall by the wayside.

Programme Assurance from SQC

Experience Fifteen years providing assurance and project leadership services has given us a breadth of experience that enables us to undertake effective independent project assurance reviews. We are used to encountering new situations, to rapidly acclimatising and establishing an appropriate world view and to quickly crystallising significant aspects and issues.

Our track record is one of spotting the risks others missed and of bring to the surface ones that some people are aware of but that are not fully exposed and managed. Once surfaced we ensure that the risks are recognised and managed.

Depth and Focus The form of reviews we have undertaken varies. Some have been one or two day big picture assessments; others detailed deep dives taking a number of weeks. Some have needed to focus heavily on systems issues whilst others have been biased towards delivery and operational matters; the thrust of the review being matched to the main areas of concern and risk. Where these are not clearly understood in advance we have started with a broad balanced review and then delved deeper into areas found to be contain more risk.

Who Needs Review? Many types of organisations need reviews. Clients who have benefited from reviews include small IT functions, end user organisations, specialist development teams and the IT and product development organisations within major blue chip companies. Reviews have dealt with real-time embedded software, innovative consumer products, enterprise IT services and critical systems. Projects include first off solution development, systems technology uplifts, major changes on existing systems and in service modification of business critical systems. Most complex projects with risks benefit from disciplined reviews.

More Information To find out more about the things we can do to help you to manage your programme risk please email enquiry@sqc.co.uk and we will contact to discuss what we do and what you need.

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SQC Technology provides software testing, software test management and software test automation services and consultancy. This includes formulating software test strategies, test analysis and development of test suites, test automation and interim management. More information on our advanced capabilities and innovative approaches can be found on the company web-site. www.sqc.co.uk

Programme review stories

Stalled Project Having embarked on their first venture into complex software development this company suffered from a lack of concrete progress. Though possessing some software experience they were not equipped with the disciplines required to deliver real-time embedded software. Committed to supplying the device to major customers in the oil and gas extraction industry the company found this project had become critical to its short term health and future prospects.

A rapid forensic assessment was undertaken; wide ranging and detailed it encompassed the state of the product, the coherence and suitability of the technical approach, the quality of the implementation, development and management practices, resourcing and realism of plans. Recovery plans were outlined and agreed with the team.

The recovery programme focussed on delivering core high value functionality. Some additional resource was committed but improved progress also came from better organisation and discipline, clearer objectives and the elimination of many inhibitors of progress. Within five months the two year old project had gone on to deliver the first product into service.

Headlong Dash A review of a single sign on project revealed serious flaws in the overall approach; flaws that exposed the organisation to a high risk of a poor implementation with a potential that a roll-back would not be possible. There were inadequate pre execution test activities and the general approach was high risk with little contingency, inadequate live verification and no predefined and rehearsed roll-back approach. The programme had become totally focussed on hitting the published date and oblivious to the risks this was creating.

The consequences of the review were the rescheduling of the exercise and a comprehensive testing programme covering both the solution and rehearsal of pre planned manoeuvres to recover from post deployment issues.

Safety Threat A small industrial systems company found itself delivering a supervisory system that integrated with a control system automating the robotic stacking and movement of one a tonne metal ingots in a smelting plant. Concerns that their system could lead to incorrect positioning of ingots creating hazards to people and plant led to a technical review of the design and to a development and assurance practices review.

High Profile Move A leading blue chip company had to move its website onto new virtualised technology and into a new data centre. The site provided many

advanced eCommerce services to customer and was heavily integrated into back end systems. The move had to occur whilst the site was the subject of heavy development activity.

The challenge was not only to move the site and its many complex interfaces safely with minimal downtime but to do so without halting the ongoing development of the services it provided. The review was assessed the approach and the way the team were proving both that the virtualised system would operate correctly and that the approach to migration was effective and safe.

Unrealistic Plans Starting off as a review of the plans for the testing a replacement emergency call handling system this review identified endemic issues in the programme. Unrealistic timescales and major omissions from the plans quickly surfaced along with strategic flaws in the delivery approach.

Luckily this occurred before placement of the contract with the main system supplier. Recognition of the flaws in the approach drove the formulation of a far more realistic programme approach and associated delivery plan.

Missing Parts A project to integrate two CRM systems had a near miss when a review spotted that an essential data feed needed to align data within the systems had not been deployed. Furthermore the review then went onto to identify that if the feed was turned on immediately it would take many more days to transfer the existing data than people expected. Armed with this information alternative methods of migrating the data enabled the project to recover and hit its dates.

Failure to Scale A high technology network solution was dependent upon an unproven platform from a technology start up. A review of the programme identified concerns around the non-functional behaviour and assurance of the platform; particularly around its ability to scale.

To address this issue the supplier was required to execute and demonstrate a series of externally defined performance and scaling tests. This rigorous testing highlighted that the platform was affected by fundamental scaling limitations. The end result was a reassessment and simplification of the architecture and the removed of the platform from the solution.

Quality Issues The sources of poor quality and hence progress in a software solutions supplier was traced through to a lack of clear ownership of delivery, a lack of a regular pattern of development and a core team whose membership lacked adequate representation of test focussed people.

Our Approach and Capabilities

Perspectives Assessments are done from multiple perspectives. They are not limited to looking at project management aspects to the exclusion of technology issues nor to assessing development without considering assurance.

Facets considered include clarity of objectives, feasibility of the plan, problem space complexity, technology suitability, use of technology, development disciplines, test and assurance practices, project disciplines, deployment and migration approaches, fall-back planning, organisation experience, track record, flexibility and robustness of plans, end user engagement and external dependency.

Targeted Depth One depth does not fit all; each situation has risks in different areas; sometimes a risk lies buried in the depths of the system or in an undeclared business dependency. Our balanced mix of technical, assurance and management skills enable us to cover the full breadth of the project and to deep dive into any areas of concern. Our unique combined perspective helps us to spot the areas where problems may lurk and then to look at them in more depth and detail.

Objective Assessment Reviews step back and provide a true picture of a project's status, risks and prognosis. They clarify and capture what the project or activity is aiming to achieve and what will mean success. Comparison of the trajectory the project is on with the intended trajectory and the objectives enables an overall (re-) assessment and (re-)alignment of activities.

More on SQC

History SQC has been operating since 1996. We mainly work in the fields of programme assurance and software testing.

What do we do? We can supply consultancy, leadership, services and skills transfer. We introduce and apply new ways of working; we change the culture inside organisations we work with.

The bottom line is that we make a difference to what happens. Things do not carry on as they would have done; once we are involved they start to change.

More Information?

More Information To find out more about the things we can do to help you to manage your programme risk please email enquiry@sqc.co.uk and we will contact to discuss what we do and what you need.