Managing Project Risk

CA™

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▶ SUMMARY

The reality is that too many projects are significantly delayed due to insufficient focus being put on the risks involved, with consequent losses to business or escalating costs. Project success is elusive. It is clear that making the right choices concerning the essential trio of people, time, and budgets, will yield competitive benefits and help control risk. There are a number of initiatives taking place that aim to make IT management less of a black art, and make IT more transparent to business executives.

It is only through better visibility and availability of information that IT operation can improve transparency and the risks are more widely understood. One of the vendors at the forefront of this approach is CA. Project Portfolio Management (PPM) combined with risk management within an IT governance framework allows project resources to be marshalled optimally, the risks fully understood, and lessons learnt in post-deployment to be fed back to development. Throughout project management the emphasis is now on delivering business value.

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CA Clarity provides the functionality to monitor the key risks to projects, especially for those professionals whose time is spent working on projects or activities where the time is either charged to a third party, or needs to be tracked and recorded in order to monitor progress on projects. Visibility and accountability are the key issues. Inherent within the design of CA Clarity is the ability to mitigate project risks, and provide visibility to staff at all levels within an organisation.

Integrating the functionality requirements of portfolio, project, and risk management is going to be extremely important to the success of projects, especially now that value must be delivered and balanced with risk. For most organisations the problem is not so much a shortage of information but a tendency to suffer from information overload. The most important issue, and the one which CA Clarity addresses, is data relevancy, ensuring that the correct information is recorded, stored, and made available to authorised users.

▶ THE IMPACT OF RISK ON THE PROJECT PORTFOLIO

A particular strategy or course of action for an individual project may appear to make excellent sense, both financially and operationally, but could expose the business to unconsidered risk. The suggestion is not that organisations need to become risk-averse, after all a risky strategy with potentially large paybacks may be exactly what the business is aiming for, but the magnitude of the risk(s) on the project portfolio needs to be quantified to as great an extent as is possible.

Market and credit risk are relatively well accepted elements of risk management. This is no doubt aided by the fact that the data that underpins the associated risk dimensions is fairly readily available. Each organisation will then undertake its own analysis on the data sets, for example, in the form of developing advanced forecasting models, simulations, and risk profiles. Operational risk is softer. For example, how many organisations are able to comprehend the impact of specialist resource being unavailable, or the risks associated with a project failing? Operational risk is more concerned with the day-to-day execution of tasks within the IT department and the implications of something going awry, incorporating people, time, and budget risks. By leaving risk indicators out of PPM, many organisations will easily be led down paths that look good from the view of an individual project, yet could lead to unforeseen outcomes. In this respect, risk management can be seen as yet another important criterion, used to further safeguard or justify important decisions.

There is also the impact of increased levels of regulation based on industry or market sector. For example, the Basel II New Capital Accord is due to become law in many countries by 2007, and national regulatory bodies are already issuing compliancy rules. The Accord now includes operational risk assessment as well as credit risk. Many organisations implicated by Basel II should therefore look beyond compliance, allowing risk dimensions to be introduced into their PPM initiative.

However, it must be recognised that organisations will use risk management at entirely different levels of maturity, and in this regard it has to be applied appropriately. Organisations that operate in the financial services sector have already made extensive use of risk management solutions, and for them the challenge will be to find the points of integration between risk and PPM. For example, by surfacing key risk indicators within a dashboard. The majority of organisations in other sectors will not have previously considered risk management, yet have deployed, or are seriously considering PPM. For these enterprises, risk management will be an entirely new discipline, and they will not necessarily need a comprehensive risk management solution, but utilise risk management capabilities found within PPM solutions, such as CA Clarity. For organisations new to risk management, undoubtedly the most complex issue relates to where, how, and when risk considerations need to be included in the PPM process.

The most obvious stage to consider the impact of risk is when determining and evaluating viable IT Investment options. The goal is to determine the most appropriate course of action for the IT department in light of its overall strategy and available resources. Forecasting will help the IT department get a better understanding of future activity and risk impact. Critically, it is not just a question of picking the option that maximises revenue potential, delivers the quickest payback, or generates the highest return on investment: all of the options must be compared against the overall strategy, which may lead to a less-risky course of action being selected. Risk management, therefore, needs to be considered as an integral part of PPM. It should allow the integration of both operational and financial risk measures in order to give a clear picture of the overall situation. The best PPM solutions will also support risk projections and scenario planning, allowing potential strategies to be evaluated prior to investing resources and allocating funds.

"Incorporating risk management into the PPM process will benefit the organisation in a number of important ways."

Incorporating risk management into the PPM process will benefit the organisation in a number of important ways. Firstly, it reduces the probability of encountering unexpected risks by creating an understanding of the cause-and effect relationships that are at work. It also delivers an improved understanding of the impact of risk and supports the mitigation of that impact. In more advanced cases, businesses can also look to develop parameters for acceptable risk, just as with Key Performance Indicators (KPIs), thus ensuring that ongoing actions remain within those parameters and the changes in risk exposure, and/or mitigation costs are fully exposed in a timely fashion. However, there is a cost associated with risk mitigation – this needs to be balanced against the cost of absorbing risk.

▶ CONTROLLING PROJECT RISK

IT departments face risk on an ongoing basis. The risks associated with one-off projects are well documented, but what about the less obvious risks that are also being faced? An IT manager needs to be able to identify all the risks that must be dealt with from a project portfolio perspective, then subsequently manage and mitigate these threats effectively. For example, managing the IT budget is a labour-intensive process subject to error. Overspending will result in IT being viewed as a drain on the organisation, whereas under-spending will not deliver the levels of service required for the organisation to be competitive or to deliver the best value to its customers. IT managers clearly need sufficient IT resources if they are to meet organisation objectives, so require the ability to plan resource capacity based on the total demand from the business for IT services and projects.

There are a number of issues with current practices for assessing project costs and the associated risks. The traditional process typically encompasses estimating the size of project (perhaps in the number of lines of code, or now more commonly in function points), estimating the time resource that is required in person days or weeks, factoring in resource availability to arrive at a calendar schedule, and then deriving the cost for the project according to the nature of the resources consumed.

However, there are two distinct problems with this approach. Firstly, it generally takes place at the very beginning of the project lifecycle, sometimes even before any detailed requirements capture has been carried out. Secondly, it is rarely iterative, with perhaps the worst case being when a 'fixed price' model is used. In this scenario IT management is caught in a difficult position, either over-estimating to make sure that there is less chance of an overrun and risk the project being cancelled, or sub-contracted to an external provider; or making a realistic estimate based on the limited available information, and join the long list of projects that end up over budget and fail to meet requirements.

Undertaking a major IT project is very complex, therefore a change to the management paradigm is needed to reflect this. From a PPM perspective, at the outset this process would be reflected in the degree of risk that is attached to a project at any particular time over the span of the project. The estimated range of costs is quite wide, and there is a higher degree of risk. As the project proceeds, the estimated range narrows and the risk and uncertainty decrease. There should be a specific gateway review associated with the point where the cost estimate cannot be sensibly refined further, and a go/no-go decision made for the project to continue. Now sceptics will say that inserting this decision point adds up to further cost and potentially wasted effort, but looking at the often quoted project failure rates the approach makes sound economic sense.

A PPM solution can also help to lower the risks associated with decision making on project resourcing: many IT projects will have experienced reliance on one or two key members of staff that have in-depth knowledge of the way in which a particular system or service works, and without their input the IT department would take much longer to resolve any problems. The use of managed services is currently on the increase in organisations of all sizes, and an IT manager must continually assess if it would be more appropriate to use managed services, or deliver the same service in-house. A PPM solution will help to assess and mitigate the risks associated with these choices, and provide visibility into the impact on the project and on the organisation's overall portfolio.

"IT governance is key to the identification and management of the risks."

IT governance is key to the identification and management of the risks. The governance of IT aims to bring about a better-managed IT environment and as part of the process there are a number of steps that need to be undertaken when looking at risk management. The first of these is to actually understand what the IT department needs to deliver to the organisation. Thus it is an information gathering exercise for all the ongoing, planned, and proposed projects. Only by taking a holistic view of the IT portfolio and being aware of everything that is to be delivered is it possible to consider the potential threats that are posed to these projects. A PPM solution such as CA Clarity which can be integrated with other IT management tools, helps the IT organisation to track all forms of demand on its services, including new projects, application enhancements, problem resolution, and system maintenance, and provides a structured process for understanding and prioritising these demands against the available IT resources.

Standards also play a role in IT risk management. The Information Technology Infrastructure Library (ITIL) is a methodology for delivering IT services, and has become a de facto standard in the drive to improve IT service management. The Control Objectives for Information and related Technology (COBIT) is generally held up as a template for IT governance. However, there is a danger that it can reinforce the tendency for many IT departments to be inward-looking. One of the processes in COBIT, PO9, is used to assess risks. Although this is useful for IT risk management the most important part of IT governance is alignment with the business and a wider relationship with the organisation. Therefore, although standards can aid IT risk management, they should be seen as guidelines rather than the be all and end all of how to tackle the problem.

CA Clarity features risk management capabilities that enable potential threats to be monitored, documented, and administered. Risk types can be created, assigned, and tracked. These risks can then be rated using pre-defined risk factors by severity level, with response strategies designed for them. The full lifecycle of risk management, from discovery, evaluation, mitigation, to monitoring, along with the communication of risk, can all be supported in CA Clarity.

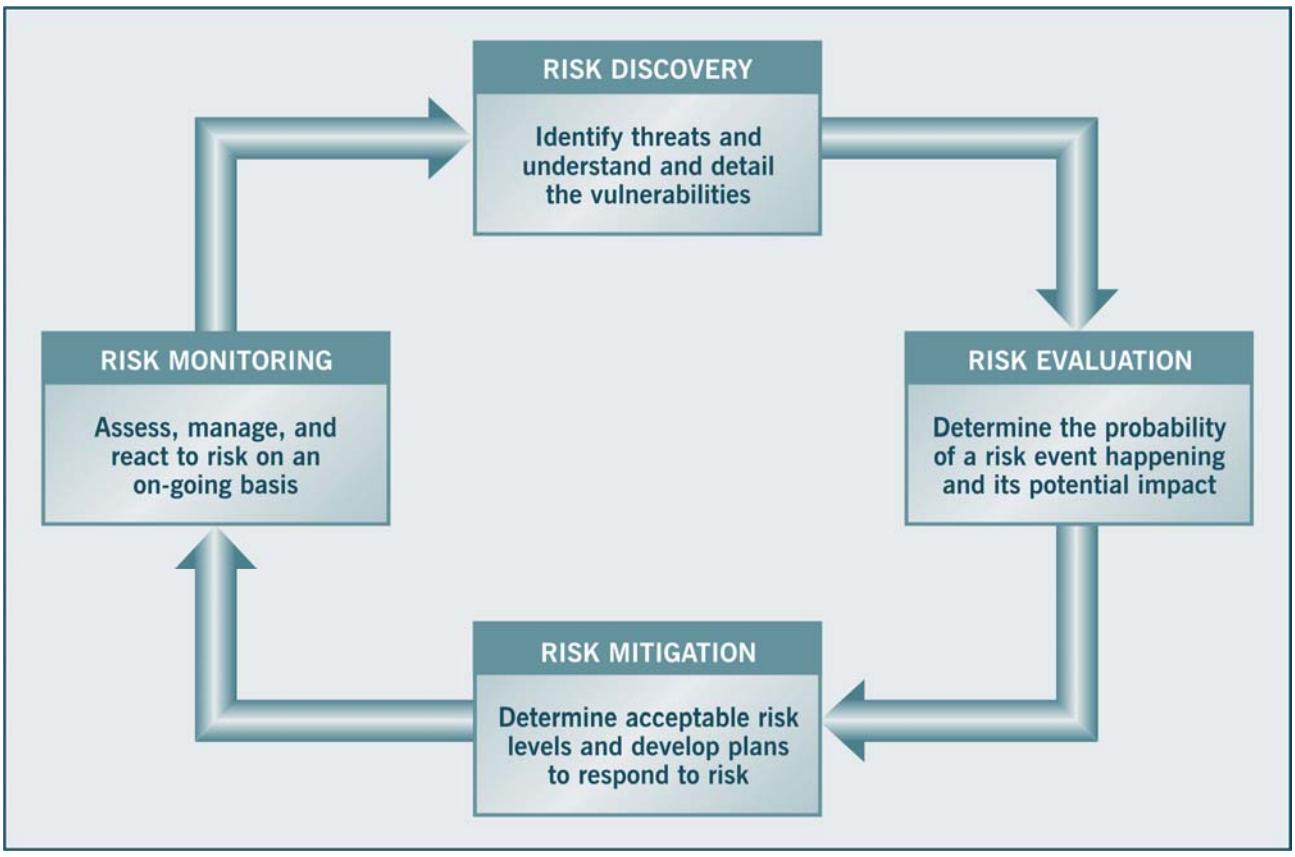

Figure 1: The Risk Management Lifecycle

Risk Management Stages

Risk Discovery

The first step is that of threat identification and to detail the vulnerability. The controls that potentially need to be put in place are defined. For example, what is being done now to ensure that more people are trained, or increasing the resources available. Additionally, reactive controls should also be identified and taken into consideration, such as monitoring the increase in productivity or tracking the availability of key staff.

Risk Evaluation

The next step is to determine the probability that the risk will actually happen. One example is trying to determine the probability that everyone capable of designing a new system will be unavailable to the organisation simultaneously. This probability would be based on the threat itself, the vulnerability, and the current controls that are in place. After which, the impact of such an event happening is determined, will it affect the organisation in a minor or insignificant way, or would it be worse than that, ranging up to catastrophic? Butler Group suggests a range of five levels of impact (Insignificant, minor, moderate, major, and catastrophic), but these can vary according to organisational requirements. The level of the risk can then be assessed, using three levels such as high, medium, and low, or as in CA Clarity, indicated in a dashboard as either: red, amber, or green status. Again, these can be adjusted to meet enterprise needs, and some IT managers may prefer to assign numeric values to the likelihood and impact in order to arrive at a risk rating within a range. This enables the IT manager to easily and quickly identify how to prioritise the various risks identified.

Risk Mitigation

Some organisations will want to play IT risk management 'close to the edge', with a very fine line between the point at which risks are prevented and the cost of preventing those risks. Other organisations will be more risk averse, putting as much resource as possible into ensuring that the risks are mitigated. In consultation with senior executives, the IT manager needs to determine what level of risk the organisation can accept. The remainder is the input of the IT manager in understanding the particular circumstances of the organisation and the factors that go into running IT to deliver organisation objectives.

Risk Monitoring

An IT manager should not see monitoring risk within the project portfolio as a burden. There is no doubt that it can be cumbersome and time-consuming, although this can be considerably eased by using an integrated PPM tool, such as CA Clarity. Governance should certainly be viewed as a key enabler, with IT risk management being implemented as part of the IT governance framework. Furthermore, controlling the risks that IT faces will support the business objectives and ultimately improve the effectiveness and value provided by IT to the organisation. There will always be a level of uncertainty when it comes to responding to the risks that the IT department faces. The exact level of risk will not always be known, hence IT risk management is not a one-off project. It must be an ongoing process, reassessed regularly, and integrated in the relevant PPM procedures, to cater for changes in circumstances and to ensure that the IT department is able to support the organisation in its objectives.

▶ USING CA CLARITY TO IDENTIFY AND MITIGATE PROJECT RISKS

CA Clarity is an IT governance system that offers an integrated PPM solution for providing visibility across multiple aspects of organisational planning and project execution. The cohesiveness of informational view allied to a range of tools for planning, project, and resource management is a key strength of the product. Modular in nature, the end-user and administration modules are underpinned by a common service layer that resides on top of a highly scalable and secure foundation. This approach of interlaying common services away from the functional specifics of individual modules has many advantages. The architecture ensures that personalisation and organisationally-specific customisation is reflected across all the modules.

"Visibility and accountability are essential for managing risk."

Visibility and accountability are essential for managing risk. CA Clarity has a configurable user interface, ready-to-use portlets, and dashboarding capability, which works on a hierarchical structure so the user can, with relevant regard to access permissions, 'slice and dice' information in any required form, and have customised interfaces just the way they are required. CA Clarity also allows the user to drill down into any relevant piece of information to discover the detail behind the issue or risk. The solution provides the ideal bridge between IT and senior management, providing the transparency into IT processes that were hitherto opaque. For example, executives can have access to Web-based dashboards and real-time reports that provide snapshots of the status of various projects. Also, CA Clarity's graphical workflow that enables collaboration, manages documentation, and provides the reporting and analytics to further manage the IT portfolio and effectively manage risk.

CA Clarity allows IT organisations to effectively manage key areas of risk impacting the successful delivery of IT projects which include:

- Effectiveness (meeting objectives and financial budgets).
- Availability (resources and people).
- Efficiency (time keeping and scheduling).

Measuring Effectiveness Throughout the Project Lifecycle

The effectiveness of IT can be used to measure the management of risk in the IT department. PPM helps to monitor project delivery and how it matches business need. CA Clarity portfolio management capabilities enable users to align investment with strategic aims, ensuring projects provide business value. One of the key requirements for managing any investment is the ability to carry out monitoring. CA Clarity Portfolio Manager allows organisations to gain a better understanding of the performance of their assets and investments.

Simply being able to understand the performance of any given element is only part of the picture. Portfolio Manager also allows the creation of complex 'what-if' scenarios. It can measure performance across a number of user-defined parameters, which can range from detailed financial information, such as cost, ongoing ROI, and projected revenue, to more conceptual measurements, such as employee tie-in to a project.

The solution works from the very initial stages of investment planning, considering investments in isolation and also in relation to other ongoing or proposed investments. Investment ideas can be documented at an early stage and with little surrounding context. This context can be built up in a collaborative environment, further ensuring closer alignment between IT and strategic imperatives, as well as reducing cost as non-practical proposals can be isolated at an early stage. Dependencies upon ongoing investment projects can be monitored in real-time with complex inter-relationships hidden from the end user who will be presented with changes at the very highest level, but who will also have the ability to drill down into the root cause of changes.

The solution addresses the four key phases of investment:

1. Portfolio Modelling.
2. Investment Inventory.
3. Portfolio Planning and Analysis.
4. Performance Assessment.

The solution provides the ability to have control from the earliest possible stage right through to the end of the investment lifecycle, whether that is days, months, or even years. For portfolio modelling, CA Clarity delivers in-built standard criteria used by many organisations, including true benefit, true cost, strategic alignment, risk profiling, and milestone scheduling.

CA Clarity also works by managing all financial aspects associated with projects. It contains sophisticated and customisable categorisation functionality, alongside the ability to allocate costs at a fine level of granularity, with the automatic creation of invoices for external clients and chargeback for internal accurate cost control. With project teams typically assembled from different sources it is important to create detailed and accurate cost models and to have access to historical financial data for reporting purposes. As with all the other modules in Clarity, the setting up of specific requirements are simple and graphically rich. One of the key elements within the CA financial management is the ability to drill down and allocate costs at an individual task level if required. This ensures maximum accuracy for budgetary reporting.

Tracking Resource Availability in Real-Time

The availability of IT resources is an area of risk to projects, especially people, and therefore something that can be measured to assess the management of these risks. Clarity Project Manager provides the ability to create project plans that are as simple or complex as required, the use of definable search criteria to select the best resource for the project, and the use of pre-defined best-practice methodologies for creating the project plan. There is a strong workflow element embedded within the module that allows users to model the phase gate process with automatic generation and transmission of all documentation and tasks to the relevant people involved in the project. The workflow capability handles complex processes, with the project manager able to define as detailed a workflow as required, including the attachment of all relevant documentation such as approval sheets, time sheets, and budget updates. Project Manager provides its own project interface and also integrates into Microsoft Project.

Open Workbench, the open source desktop project scheduling application, supplies the necessary link between the individual projects and the portfolio management aspects of CA Clarity. It not only provides scheduling functionality, but also creates a larger picture of the inter-dependencies between projects. Open Workbench can use the objects created in CA Clarity to create schedules based upon past successful implementations. Scheduling is a complex task for any but the smallest projects and teams, and Open Workbench has an auto scheduling feature that will create the optimum scheduling plan, taking into account any dependencies or constraints that exist within the system.

CA Clarity also provides the people-based functionality, giving the facility to find and manage the best people for any given project. Not simply a ‘search engine’ for skills and availability, the resource management features capacity planning ensuring the correct balance of people’s time. It also works in a dynamic manner by aiding the tracking of personnel development.

Driving Greater Efficiency

The efficiency of an IT department can also be a significant contributor to the degree of project risk factors. CA Clarity can be used to create best practice methodologies, or to ensure created project plans follow organisational standards and guidelines. It can be viewed as an overlaying conceptual model to which all plans have to conform. It speeds up each individual project plan by pre-inserting required objects at the correct stage. All that is left is for each individual plan to be filled in with the objects that are special to that plan.

Efficiency also equates to managing time pressures. CA Clarity allows disparate operational processes to come under a single point of control for greater visibility and understanding. One of the key elements is the graphical workflow status indicator, which displays the precise location and status of any element of a running process.

Changes need to be fed through to developers/testers in a timely manner, as well as feedback from end-users. CA Clarity integrates with CA Service Desk and CA Harvest Change Manager. This integration enables an IT help desk representative, when first notified of a problem that might have something to do with a software change, to look at whether there has been a flurry of similar complaints. If that is the case, they can submit a change request for the bug to be fixed or for the software to be rolled back to the previous version. Change requests would be submitted via a Web services request to CA Clarity, which can respond by automatically creating a task from which the program or project management office can assign developers and resources, and create milestones. That in turn would generate a request to Harvest, the source code control system, to create a change package that would then be completed and checked out by the developer when the bug fix or rollback is completed, with CA Service Desk and CA Clarity updated accordingly.

▶ MANPOWER

An example of where CA Clarity has been used to manage risk successfully is at Manpower, a global employment services provider, serving the requirements of more than 400,000 customers each year via 4,300 offices in 68 countries. Manpower's IT operations are distributed across its global network. With CA Clarity, Manpower has been able to provide more accurate forecasts of risk against return for all IT projects.

The solution offers a single, integrated system through which Manpower can prioritise, manage, and monitor all IT investments and resources throughout the organisation. CA Clarity provides Manpower's IT and business management with the information they need to make governance decisions. It also supplies local IT managers with the tools to manage projects and programs more efficiently and cost effectively, according to particular requirements.

For example, using 'what-if' scenario planning, Manpower can forecast the potential risk against return of all IT projects, internal support services, offshore development, and outsourced projects enabling investment decisions to be based on actual information rather than guesswork. The company can also exploit CA Clarity's integrated portfolio planning, demand management, and resource planning to balance available resources and budget against IT priorities. Finally, project and time management functions help IT managers keep initiatives on track and evaluate progress to ensure that the organisation is achieving optimal results.

Supported by CA Clarity, Manpower took a very progressive approach by designing and implementing a 'global/local' IT methodology. This approach took into account the requirement for local IT operations and projects to have some autonomy to be effective and that imposing a rigid, 100% centralised governance model would mean local offices would not yield the best results or ROI. This enabled Manpower to exploit and consolidate what is common or what can be made common on both the infrastructure and the applications, and still allow local offices to set their own priorities on IT spending and major projects – rather than the CIO controlling everything from corporate headquarters on the other side of the Atlantic.

▶ COMPANY PROFILE

CA, formerly Computer Associates International, Inc. (NYSE:CA), positions itself as one of the world's largest management software companies. It delivers software and services across operations, security, storage, life cycle, and service management, to help organisations optimise the performance, reliability, and efficiency of their enterprise IT environments. Founded in 1976, CA is headquartered in Islandia, N.Y., has 15,000+ employees, operates in more than 140 countries, and has achieved ISO 9001:2000 certification.

Revenues and operating income for the last three fiscal years (ending 31 March) were as follows:

	2005 (US$ million)	2004 (US$ million)	2003 (US$ million)
Revenue:	3,530	3,299	3,042
Change on previous year:	7.00%	8.45%	5.08%
Total Net Income/(Loss):	(21)	(94)	(349)

CA has a stated policy to enhance and protect its clients' IT investments by integrating a wide range of systems in heterogeneous environments. To maintain this stance it has a wide range of partnerships with technology vendors, systems integrators, and IT consultancies.

Key alliance partners include:

- Microsoft.
- HP.
- SAP AG.
- BearingPoint Inc.
- Intel.
- Oracle.
- PeopleSoft.
- Ernst & Young LLP.

CA counts 99% of the Fortune 500 amongst its customers.

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